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# International Conference on Sustainable Globalization

**January 11-13, 2018**

**Kochi, India**

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## Proceedings Contents...

---

- *Foreword*
- *Keynote Speech*
- *Committee Chairs*
- *International & National Advisory Committee*
- *Table of Contents*

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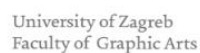
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## FOREWORD

It is with a great sense of pleasure that the executive board welcomes you to the first International Conference on Sustainable Globalization at Kerala, India. The discussion on sustainable globalization is an initiative that we felt has great common ground and potential. The desire to have academia, administration and industry to get together in order to advance the cause of a sustainable world while acknowledging the rapid pace of globalization is important. These three areas can work even closer together, learn from each other and collaborate to achieve common goals. This year we specifically highlight the role of higher education in those goals. We thank each of you for believing in the idea of the conference and for coming together from all over the world. We are thrilled with the partnerships that this conference has already generated.

While we worked so well as a team over a period of a year with great partners to support us, we also jointly acknowledge the individual contributions of the team members.

Abey Kuruvilla

General/Conference Chair, Budget, Sponsorships, Speakers

Robinet Jacob

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Hedda Sander

Review Chair, Editing, Research and Technical Sessions

Mario Konecki

Editor in Chief, Branding, Website Design and Maintainance, Conference Proceedings Design

We hope to continue to expand this team, to partner more, to create more spaces and occasions for discussion and we invite you to join us in advancing the objectives of this conference every year towards a more sustainable world.

Thank you and welcome to ICSG 2018

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## KEYNOTE SPEECH

**International Conference on Sustainable Globalization - Connecting Academia, Administration and Industry towards a Sustainable World**

**January 11-13, 2018**

**Kochi, India**

***Providing Leadership in Higher Education towards a Sustainable World***

**Deborah Ford, Chancellor**

**University of Wisconsin-Parkside, Kenosha, Wisconsin**

Congratulations on planning the Inaugural *International Conference on Sustainable Globalization: Connecting Academia, Administration and Industry towards a Sustainable World*. On behalf of the University of Wisconsin-Parkside we are proud to be hosting this conference with our higher education partners from around the world: Mahatma Gandhi University, Ostfalia University of Applied Sciences, and the University of Zagreb. Thank you to the leaders of the conference for bringing scholars from around the world together to discuss our shared commitment to global education and sustainability. As we begin this conference, think about what is on the horizon for our work as educators and leaders. The definition I prefer to use for **horizon** is the limit of a person's mental perception.

As Chancellor, I spend a great deal of time meeting with business and community leaders in Southeast Wisconsin and for them the horizon is all about attracting and retaining talent. The need for quality talent continues to be the most often talked about topic among leaders in all industries across our growing and thriving region. In the past year, two international companies have announced plans for North American operations just a few miles from the UW-Parkside campus. Haribo will build its first U.S. manufacturing facility in Pleasant Prairie, Wisconsin and will create 400 new jobs. This \$242 million project will include a 500,000-square-foot facility with construction beginning this year and production starting in 2020. In July, Foxconn announced that it will build a world-class advance display manufacturing campus in Racine, Wisconsin. This new campus will lay the foundation for an 8K and 5G ecosystem that Foxconn is creating in the United States. They plan to hire up to 13,000 individuals who will manufacture the world's most advanced large-sized LCD panels which will be used in a wide range of technologies across all industries. Companies like Foxconn are far beyond the technology horizon and their selection of Wisconsin has the potential to transform our region and state in many ways. In addition, our region is emerging as a top destination for supply chain and distribution with the opening of Amazon's \$250 million fulfillment center in Kenosha, Wisconsin in 2016.

The excitement and disruptions generated by these new industry partners create uncertainty involving specific talent and workforce requirements. I am often asked: "What is UW-Parkside doing to meet the evolving demands for quality talent?" We know the world of work is becoming increasingly collaborative and today's employers are asking their employees to take on more responsibility and to use a broader set of skills than in the past. Employers expect colleges and universities to advise students to develop both a broad range of skills and knowledge and in-depth skills and knowledge in a specific

field or major to be prepared for long-term career success. Our graduates will face challenges that are more complex in the future and greater emphasis on communication skills, critical thinking, and analytical reasoning skills will be essential.

Economic and talent-development experts tell us we are on the brink of not one, but two revolutions. Dr. Klaus Schwab, founder and executive chairman of the World Economic Forum, speaks to the arrival of the Fourth Industrial Revolution as “distinct in its velocity, scope and systems impact.” He says the speed of current breakthroughs has no historical precedent and is disrupting every industry around the world, including higher education. At the Fifth Annual Summit on Regional Competitiveness in Chicago, the president of North America Manpower Group Inc., told regional-planning leaders from Indiana, Illinois and Wisconsin that we are in the midst of a skills revolution. She defined “learnability” as the top skill needed to succeed in today’s competitive environment.

Learnability, Flexibility and Adaptability are the “skills currency” of the future and the foundation of a UW-Parkside education. UW-Parkside graduates are prepared to achieve sustained success as technology and the demand for relevant expertise continues to evolve. As our region moves forward, adapts, and changes at an unprecedented pace, the University of Wisconsin-Parkside will continue to grow and transform as it has for the past 50 years. The goal is to ensure that graduates have the skills and “talent currency” required for success during the Fourth (and maybe even the Fifth) Industrial Revolution.

During my opening remarks, I will review major disruptions impacting higher education, demonstrate how UW-Parkside is a global leader and partner, and inspire you to continue leading and educating to advance change. What is our role as leaders and educators in leading change? How will we collaborate to enhance teaching, learning, and scholarship? What new ideas will emerge from this conference to ensure sustainable globalization?

One of my favorite books, *Confidence* written by Harvard Professor Rosabeth Moss Kanter, focuses on the traits and qualities of what differentiates both successful and unsuccessful teams and groups in sports, business, education, and non-profit organizations. She shares many examples and stories of how to build confidence in organizations. Her advice can be summarized into four simple actions for leaders in order to promote collaboration and ultimately, restore confidence: (1) Get connected in new ways through new conversations; (2) Carry out important work jointly; (3) Communicate respect; and (4) Demonstrate inclusion.

As leaders in higher education, we must ensure that our respective learning environments remain relevant and responsive to the changing ecosystems. We need to develop innovative approaches to provide students with well-rounded and engaged learning experiences. Our ability to maintain and grow as relevant and valued innovators depends heavily on our continued emphasis to forge strong partnerships in our respective communities and around the world.

## PUBLISHED PAPERS

No.	Title	Page No.
1.	<b>Modern Trends in Russian Business Education within the Concept of Lifelong Learning</b> <i>Valentin P. Galenko and Olga P. Tabelov, Russia</i>	8
2.	<b>Russian Higher Education System within the Global Challenges</b> <i>Igor Maksimtsev and Valentin Galenko, Russia</i>	19
3.	<b>The IT Age: A Boon or a Bane in Education</b> <i>Anuradha Choudry, India</i>	26
4.	<b>Labor Market Integration and the European Refugee Crisis: A Social Entrepreneurship Case</b> <i>Jan Pieper, Malte Martensen and Florian Hummel, Germany</i>	30
5.	<b>Educational Importance of Sustainability</b> <i>Inderjit Kaur and Abey Kuruvilla, USA</i>	37
6.	<b>Sustainable Environment in Kerala- A Clarion Call for Higher Education Institutions</b> <i>Nirmala Padmanabhan, Karthika K., S.M. Mohankumar, India</i>	41
7.	<b>Imparting need based tourism education: challenges faced in creating employable skills</b> <i>Preji M.P., India</i>	50
8.	<b>SWOT Analysis of Tourism Higher Education in Kerala</b> <i>Nimina Ramachandran, Sindhu R Babu, India</i>	56
9.	<b>University of Wisconsin Educating Future Sustainability Leaders</b> <i>John D. Skalbeck, USA</i>	65
10.	<b>Business Education and Formation of Intellectual and Human Capital of an Enterprise</b> <i>Olga Tabelova, Russia</i>	72
11.	<b>Project Collaboration in International Research Clusters: Studying Business Networks and Forming Future Vision of Changing Global Economy Landscape</b> <i>Sofia Rekord, Russia</i>	77
12.	<b>Choose Your Friends Wisely - Cultural Accommodation and International Students' Employability</b> <i>Malte Martensen, Jan Pieper, Hannah Nagler, Florian Hummel and Dulcie Mativo, Germany</i>	82
13.	<b>The Role of Universities in Stimulating Sustainable Consumer and Employee Behavior</b> <i>Julia Solovjova, Russia</i>	88
14.	<b>Choices for a Day- Empathy, Sensitivity or Confidence?</b> <i>Sridevi Gopalakrishna and Shalini Thomas, India</i>	94
15.	<b>Higher Education in Kerala: Issues and Challenges</b> <i>Dr Thushasra George, Dr. Mary Liya</i>	98
16.	<b>Impact of Haritha Vidyalayam (Green School) Project on Environmental Awareness of Upper Primary School Students of Kerala</b> <i>Vishnu Vijayan M A ,, Jishnu P Thampy, India</i>	103
17.	<b>Innovative Drivers Shaping the Future of Global Economy</b> <i>Konstantin Kostin, Russia</i>	113

18.	<b>Waste Management Criteria and its impact in the Hospitality Sector of Kumarakom</b> <i>Anitha., R., Ambeeshmon, S., India</i>	119
19.	<b>Heritage Tourism Development of Cochin: A Study of Critical factors</b> <i>Bindu.V.T., Sandhya Durga Prasad, Shynu Solomon., India</i>	126
20.	<b>Sustainable Tourism Development: A Study on Tourism Propitiations along East Coast Road (ECR), Tamil Nadu, INDIA</b> <i>George., B., Pasupathi.,V. India</i>	138
21.	<b>An Analysis on Sustainable Ecotourism Practices in Kolli Hills of Salem District in Tamil Nadu</b> <i>Kannan., R., India</i>	150
22.	<b>Market Reach of snacks with special reference to Ernakulam district</b> <i>James Varkey Mandapathil, India</i>	158
23.	<b>Tourism education in Greece in times of economic crisis</b> <i>Moira.,P., Mylonopoulos.,D., Kefala.,S, Greece</i>	170
24.	<b>The regulatory framework for fishing tourism or fisheries-related tourism in Greece</b> <i>Mylonopoulos.,D., Moira., P., Parthenis.,S, Greece</i>	183
25.	<b>Economic Growth of Indian Tourism Industry: Based on Analysis and Appraisal of Foreign Tourist Arrivals</b> <i>Nishanthi, P., Hemalatha, T., Balan, J., India</i>	193
26.	<b>Integrity Centered Leadership for Global Sustained Innovation</b> <i>Ben Pandya., USA</i>	199
27.	<b>Festivals as a medium of cultural preservation: a study on Ladakh festivals and how its spirituality contributing in sustaining its authenticity</b> <i>Denny John Parakootathil, India</i>	207
28.	<b>Training, Skill Development and Employment Opportunities in Tourism and Travel Sector</b> <i>P PremKanna, India</i>	214
29.	<b>A study on the effectiveness of ASAP as a skill development scheme for tourism in Kerala</b> <i>Nimina Ramachandran., Sindhu R Babu, India</i>	219
30.	<b>A Study of Socio-Economic Condition of Tourism Entrepreneurship in Sivagangai District</b> <i>V.Ramachandran, V., Balan, J., Pannerselvam, R., India</i>	229
31.	<b>Ecotourism: A trending Concept for Sustainability</b> <i>Thangamalar, R., Balan, J. India</i>	234
32.	<b>Study on the Sustainable Prospects of Kochi as a Destination.</b> <i>Amita Sarah Varghese, India</i>	240
33.	<b>Valuation of Prospects for Sustainable Development of Border Regions and Foresight Risks of Interaction between Countries</b> <i>Vertakova.,Y, Russia</i>	246
34.	<b>Stimulating factors of sustainable consumption in Russia and Finland: preliminary results of empirical research</b> <i>Oxana Yuldasheva, Russia</i>	260
35.	<b>The High-Tech Sector of the Russian Economy: State and Peculiarities of Development</b> <i>Vladimir Plotnikov, Russia</i>	266

36.	<b>Traditional Farming Practices for Alternative Tourism Development: The case of Kottayam District in Kerala</b>	273
	<i>Mahadevan.,P., Robinet Jacob, Anita., T. A., India</i>	
37.	<b>Utilization of Online Marketing in the Tourism Industry of Kerala</b>	280
	<i>Kalpita Chakrabortty, India</i>	
38.	<b>Motorcycle Tourism: A Ride towards Sustainability and Pro-Environment Attitude</b>	287
	<i>Aiwa Romy, Malaysia</i>	
39.	<b>Sustainable agricultural development through Organic Farming in Wayanad District of Kerala</b>	292
	<i>Joben K. Antony, India</i>	
40.	<b>Efficient Popular House: A Brazilian Proposal for Low Cost and Sustainable Housing</b>	296
	<i>Andressa Paolla Hubner da Silva, Paulo Rogério Lemos, Marcos Alberto Oss Vaggetti and Elvis Carissimi</i>	
41.	<b>Sustainability of Buildings aiming gray Water Reuse</b>	301
	<i>Andressa Paolla Hubner da Silva, Elvis Carissimi, Geraldo Rampelotto and Rutinéia Tassi, Ecuador</i>	
42.	<b>A Study on Zero-Waste Project With Special Emphasis on The Destination Fort Kochi</b>	307
	<i>Jennifer Sandy James, India</i>	
43.	<b>Responsible Tourism a tool for sustainable development- a case study on Kumarakom, Kerala</b>	311
	<i>Reshmi Joseph, India</i>	
44.	<b>Is recycling worth it? Three trends that can cut costs.</b>	317
	<i>Lenart, S., Kuruvilla, A., USA</i>	
45.	<b>HDPE-Chitosan composites as potential bone composite materials</b>	323
	<i>Meril Shelly, Meril Mathew and Tania Francis, India</i>	
46.	<b>Perspectives on the Local Solution for the Global Problem: Recycled Aggregates as a Sustainable Construction Building Material</b>	327
	<i>Subhasis Pradhan, Shailendra Kumar and Sudhirkumar V. Barai, India</i>	
47.	<b>Bioremediation of Heavy Metal Contaminated Water Bodies using Microalgae</b>	336
	<i>Rolfes, C., Genning, C., and Sander, H., Germany</i>	
48.	<b>MGNREGA and Sustainable Rural Development: Evidences from Kerala</b>	343
	<i>Soorya Anand., India</i>	
49.	<b>Case Study of Current Trends About Waste Reduction at Construction Sites in Beijing, China</b>	350
	<i>Xijie Zhang and Abey Kuruvilla, USA</i>	
50.	<b>Domestic violence against women and perception of solo women travellers in India</b>	354
	<i>Toney K. Thomas, Malaysia and Binoy T.A., India</i>	
51.	<b>Vizhinjam Port: Impact on Healthcare Tourism in Thiruvananthapuram</b>	362
	<i>Sankar S.,R Kannan, India</i>	
52.	<b>Risk Management in Hotel Industry: Chronicles from Chennai</b>	368
	<i>Rajamohan, S., Eugene, J., India</i>	
53.	<b>Changing Paradigms: A Reflection on the Pedagogy of Teaching in Autonomous Institutions in Kerala</b>	372
	<i>Latha Nair, R. India</i>	
54.	<b>Usage of Assistive Technology in Higher Education</b>	375
	<i>Mario Konecki, Abey Kuruvilla, JooYoung Seo, Croatia, USA</i>	

55.	<b>Social Entrepreneurship as a Model of Employment of Persons with Disabilities</b> <i>Horvatić Nikolina and Kedmenec Irena, Croatia</i>	380
56.	<b>Social Media Assisted Group Project Management for Higher Education in India</b> <i>Pradeep Sundaresan, India</i>	386
57.	<b>Legislation on Lead poisoning in India</b> <i>Ajee Kuruvilla., V V Pillay., T Venkatesh, India</i>	391
58.	<b>Processes of cultural changes of the etnia Tsa'chila and contributions of the ethnotourism to the cultural preservation of the Chigüilpe community, Santo Domingo de los Tsa'chilas, Ecuador.</b> <i>Mónica Patricia Buenaño-Allauca, Yurany Gabriela Romero Espinoza, Soraya Rhea Garcés, Ecuador</i>	396
59.	<b>Social Responsibility and Management Development: An Analysis of Socially Responsible Companies</b> <i>Lars Lächele, Peter Paschek, Germany</i>	402

## ABSTRACTS

60.	<b>English as a Medium of Instruction in Oman's Higher Education Institutions: Implications for International Engagement</b> <i>C.J. Denman &amp; Rahma Al-Mahrooqi</i>	418
61.	<b>Leadership Through Service-The Scindia Model</b> <i>Saraswath M D, India</i>	419
62.	<b>PERSONAL E-DIETITIAN - Your companion to better health is just a click away</b> <i>Azeez Chollampat, Exalture Inc, USA</i>	420
63.	<b>Being a reflective and Researching teacher: Challenges. Value and Importance</b> <i>Burnell, Kerrin, Oman</i>	421
64.	<b>Predicting Intention of University Students to Visit Mongolia Using an Extended Theory of Planned Behavior</b> <i>V.G.Girish, South Korea</i>	422
65.	<b>White privilege and its impact on Global Economy</b> <i>Roseanne, M, Evans, D, University of Wisconsin Parkside, USA</i>	423
66.	<b>A Study on Community Perspective on Ecotourism in the Valley of Kashmir</b> <i>Iqbal Ahmad Bhat, Nazish Hena Khan, India</i>	424
67.	<b>The Psychology Behind the Impact of Business Experience on Sustainable Orientation</b> <i>Meena Jose, USA</i>	425
68.	<b>Complementarities and Contradictions of "Sustainable Globalization"</b> <i>Roby Rajan, USA</i>	426

## Modern Trends in Russian Business Education within the Concept of Lifelong Learning

Valentin P. Galenko and Olga P. Tabelov

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### Abstract

*The paper examines the role and meaning of business-education as a subsystem of lifelong learning. It reveals key specific features of business-education organization in Russia, provides review on development of Russian business-education during the last 25 years. The authors illustrate the changes in needs of additional education market. The paper provides classification of business-education services demanded at educational market; discusses the key principles of adult education organization; presents the main groups of students that are targeted by educational programmes and stipulate specific features of these programmes' development. The authors also examine specific features of EMBA/MBA programmes' market development in Russia, demand for this type of programmes shown by top and middle management of companies, as well as qualitative characteristics of students such as age, basic education, their positions in companies and motivation for enrollment. The paper provides analysis of a university business-school's performance, examines its market advantages and disadvantages. The authors try to summarise the main achievements of modern business-education in Russia, the key challenges and trends in its development, as well as relevance to the goals and principles of lifelong learning.*

**Keywords:** business-education, lifelong learning, additional education, MBA, EMBA

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

Development of the system view on lifelong learning is objectively connected with high speed of scientific and technological progress and the need in correspondence with this speed of social and economic development of society. There existed an obvious demand for elimination of the gap between education and the needs of the developing society that was based on scientific and technological progress. This gap is illustrated by the fact that basic education couldn't fill in the deficit of knowledge, which negatively affected labor quality of employees in the new realities of scientific, technological and social development. All the abovementioned resulted in creation and development of additional education systems oriented at professional retraining and improvement of adults' professional skills so that the level of knowledge and skills correspond to the modern level of technological, social and economic development of society.

We believe that transition to innovative economy in information society obviously requires continuity of education. The lifelong learning system should replace the model of education traditional for industrial society, i.e. intensive provision of educational services in the first 20-25 years of life with further improvement of professional skills. Another important trend is practical orientation of education in order to form and develop a complex of competencies satisfying the interests of business, which also requires certain changes in educational technologies.

Nowadays the system of higher economic and management education has become an important resource for preparation of managers in Russia. However, being under permanent process of reformation, it is not always capable of satisfying the demand for future highly qualified managers. In these conditions the status of additional education is rising, because it offers the programmes that allow forming and developing the competencies of managers and specialists demanded by modern labour market in quite short periods of time.

### Analysis of current situation

Before discussing the place and the role of business-education in lifelong learning, we need to examine several basic ideas that describe its concept.

We may say that the idea of lifelong learning was for the first time systematically formulated and presented for wide circles by the famous theorist of lifelong learning Paul Lengrand at the UNESCO conference in 1965. Exactly this conference might be called the "official start" of worldwide researches in the field of lifelong learning. Moreover,

educational reforms in the majority of countries are based on the idea of lifelong learning as one of the most progressive ideas of the last century that is still developing nowadays.

We should emphasize that awareness of the need for continuous update of knowledge has also started showing at the personal level – and not only because of the arising problem of insufficient professional competencies, but also due to increasing quantity of free time, growing wellbeing and expanding range of educational programmes offered in the market. In other words, at the personal level education not only became the basis for professional success in the competitive world, but is also seen as a special independent value, that promotes (along with professionalism) successful socialization of the individual.

Lifelong learning is a complex term that can't be defined unambiguously, since there exist a lot of approaches to understanding of its nature. We believe that the best way is to define it through describing its main features, which are the following:

- Lifelong learning is a social value, because it aims at supporting of individual and social needs' implementation.
- Lifelong learning ensures the personal right and opportunity for implementation of own educational trajectory in a lifelong way by updating knowledge and acquiring new competencies and skills.
- Lifelong learning as a social value requires institutional support for continuous development of professional and cultural potential, human capital of each member of society.

In the process of lifelong learning theory and practice development, a number of fundamental principles were formulated, which became the basis for creation of the national programmes of education development in many countries. In this sense, lifelong learning is the dominant in social policy that allows creating the most favourable environment for overall and professional development of the individual.

The majority of researches mention the following principles of lifelong learning (Serkova, D., 2017):

- *humanism* – orientation of education to a person, realization of his creative potential through creation of the most favorable environment for choosing this or that type of training, opportunities for improvement of professional skills and self-education;
- *democratism* – accessibility of education regardless age on the basis of various forms and types of education, as well as lack of racial, gender and ethnic discrimination;
- *mobility* – variety of tools, methods and organisational forms of lifelong learning, possibility of getting education in various educational institutions in order to create an individual educational trajectory;
- *being in advance* – fast development and flexibility of the institutions representing the lifelong learning system in order to create advanced programmes and teaching methods as a response to the needs of scientific, technological and social progress;
- *openness* – expansion of institutions' field of activity by attracting practitioners and experts in the related fields of knowledge, possibility to teach students of different professional and age groups with various basic education, professional level, life aspirations, etc.;
- *continuity* – orientation of education to the future, replacement of the approach providing “knowledge for the whole life ahead” by the approach “education through the whole life ahead”.

The topic of this paper is closely related to the modern system of professional education that includes four levels:

- basic professional education;
- secondary professional education (vocational);
- higher professional education;
- additional professional education.

So, what is modern Russian business-education in the system of additional professional education? Its development is connected to the growing influence of the concept of continuing education (lifelong learning), which means the need in training during the whole life, as well as to increasing role of the programs of additional education and especially business-education around the world. This tendency can also be seen in Russia.

Russian market of business-education appeared a bit more than 20 years ago and at the moment it's undergoing the stage of development, which is proved by the quite fast growing number of Russian business-schools. Comparing current Russian and Western business-education markets, we can mention that the number of active business-schools in the USA is close to 1,000, and in the UK each university has a right to create its own business-school. In the USA business-schools annually graduate over 100 thousand people from MBA-level programs (the UK – over 60 thousand, China – appx.20 thousand people).

Nowadays Russian market of business-education includes around 100 business-schools and half of them are located in Moscow. According to Russian Association of Business Education (RABE) Russian business-schools annually graduate no more than 10,000 people, including 1,000 graduates in St Petersburg and 8,000 graduates in Moscow. (Misikova, Z.V., 2009) As for the business-education market size in Russia, some estimates state that its annual volume is close to \$1.6 bln.

It's worth mentioning that various surveys show serious interest of employers to business-education. Thus, according to Headhunter (How business-education influences the salary, 2017), 64% of employers commented that their companies have demand for specialists with business-education. Wherein 32% of top-managers prefers MBA-graduates of Western business-schools and 23% – of Russian business-schools.

At the same time, 43% of top-managers doesn't care about the exact place where a job seeker was trained. It also has to be noted that three quarters of respondents believes that business-education graduates have an advantage when seeking for a job of top-management level, and about half of respondents also believe them highly demanded for middle-management (heads of divisions) positions.

Employers demonstrate the readiness to send their employees for training. Almost one third of respondents says that they provide their employees with opportunities of getting business-education, wherein 51% of companies pays a part of training costs and 30% of companies covers all expenditures.

The same research mentions that the growing interest to business-education from the consumers of educational services is caused by the fact that the business-degree increases the salary of its holder by appx. 35%.

Now we want to discuss a number of other important characteristics of Russian business-education. We need to emphasize once again that EMBA/MBA level programs are the top of the "business-education pyramid". That is why from now on we will characterize Russian business-education through the prism of EMBA/MBA programs.

First of all, let's analyze how MBA students and employers assess the results of studying. Figure 1 depicts opinions of the graduates about the key result (only one variant could be chosen) of their studying at MBA programs. (MBA from A to Ya, 2017) According to the research of the Internet-Portal "MBA in Moscow and in Russia", in 2016 the graduates of MBA programs mentioned three key advantages they obtained as a result of their MBA studies: new knowledge and skills, business connections, prestigious diploma.

As shown at Figure 2, the same research (MBA from A to Ya, 2017) also included employers represented by HR-managers of companies. As it turned out, 30% of respondents think that MBA programs give new knowledge and skills and 20% also believe that MBA diploma increases the status of an employee in employer's view. At the same time, 15% of respondents highly value business connections of MBA graduates, 16% of HR-managers think that MBA programs give no advantages at all! It's interesting that over 70% consider that MBA programs give new knowledge and skills, however, only 30% of employers believe the same.

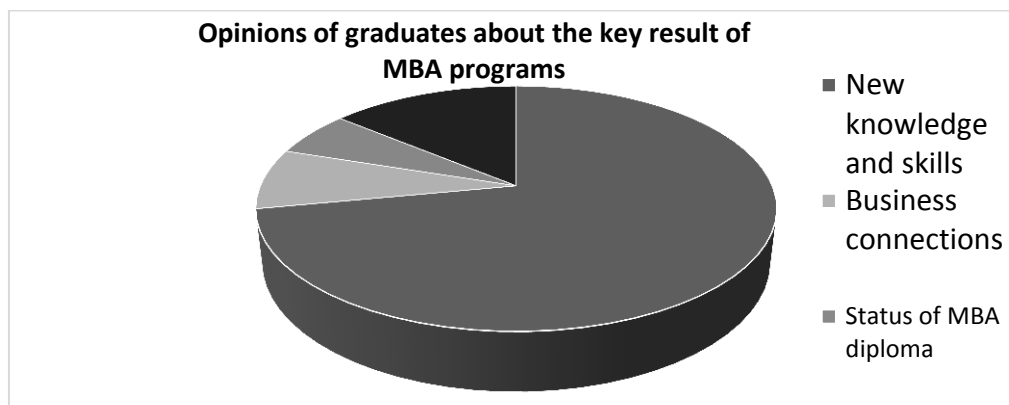


Figure 1: Opinions of the graduates about the key result of MBA programs

Studying at MBA programs seriously promotes career growth. On the average 39% of the graduates were promoted up the career ladder in two years following the graduation. As shown in Figures 3 and 4 career growth is especially notable among those graduates who worked before the MBA programme at the positions of line managers and specialists – about 75% and middle-management positions – over 90%. (MBA from A to Ya, 2017)

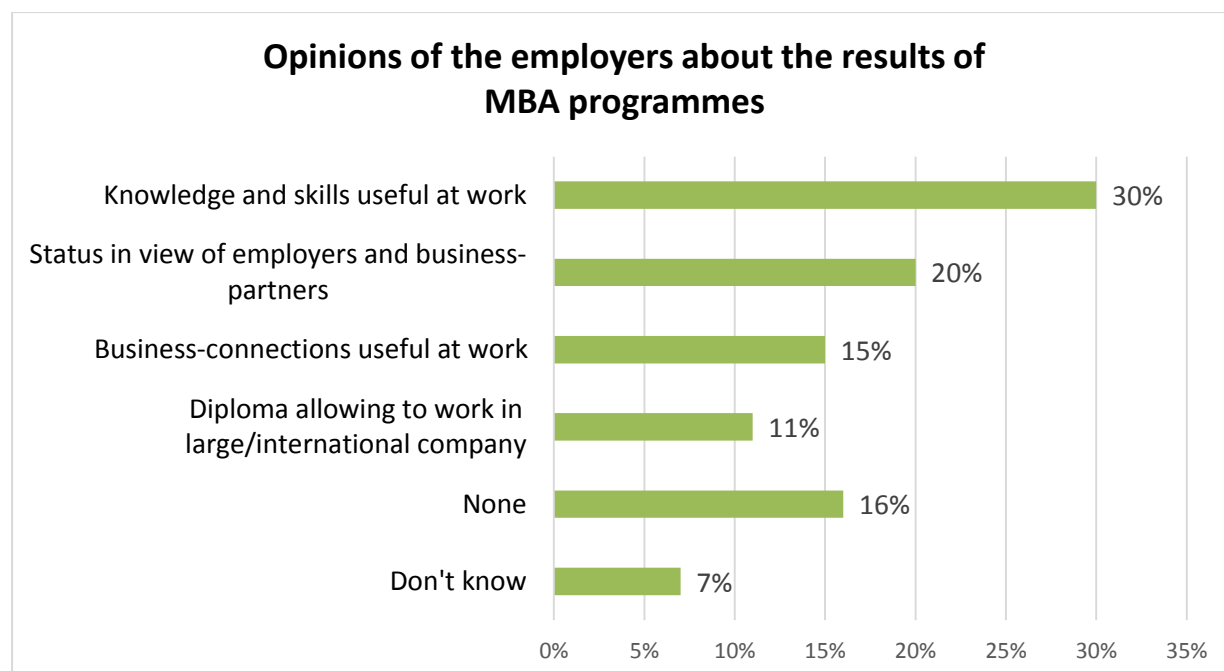


Figure 2: Opinions of the employers about the results of MBA programs

We can also mention that according to “Vedomosti” newspaper (Gorelova, 2017), the demand for managers with an MBA degree especially increased in Russian regions: this requirement appears in vacancy descriptions 6 times more often than in 2008; in Moscow this factor also increased by 1.3 times.

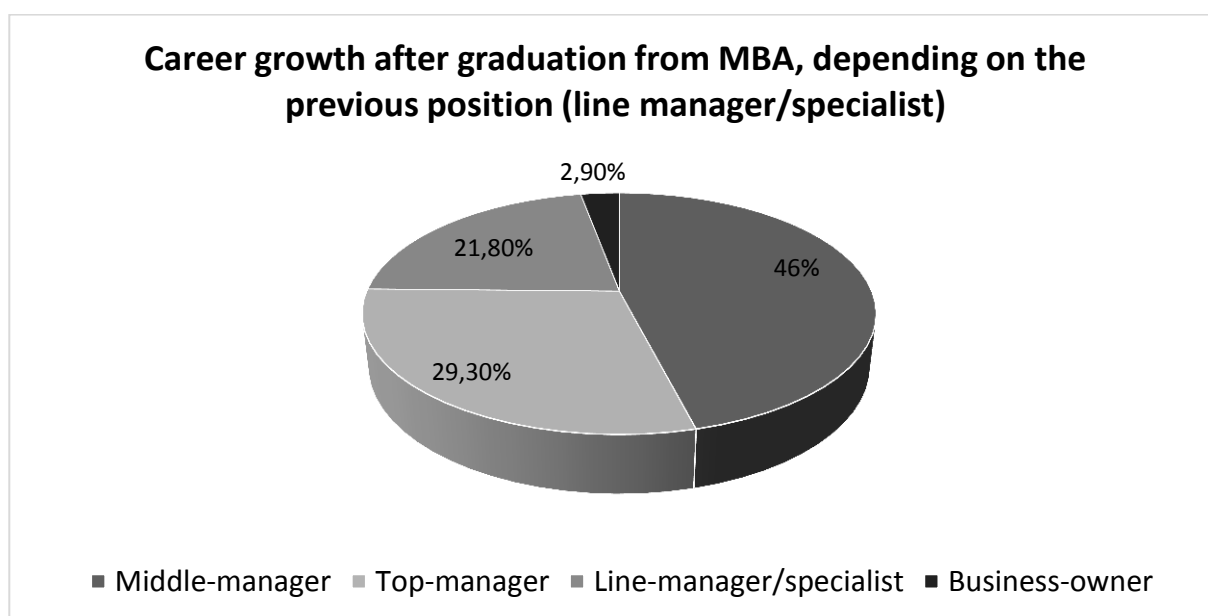


Figure 3: Career growth after graduation from MBA, depending on the previous position (line manager/specialist)

It's only logical that career growth can imply growth of income. According to GMAC (Graduate Management Admission Council – the organization created for scientific systematization of data on enrollment to business-schools and MBA programs), an average growth of an MBA graduate's salary in the world is now around 90%. They also speak of the upward trend comparing to previous periods: 73% in 2013 and 80% in 2014.

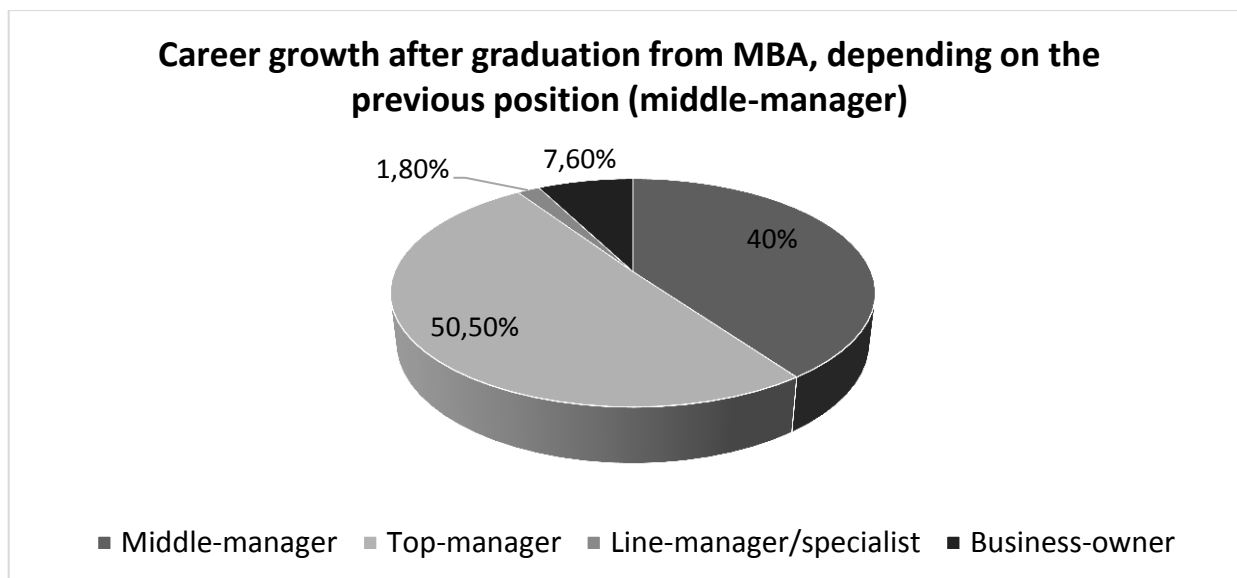


Figure 4: Career growth after graduation from MBA, depending on the previous position (middle-manager)

When we go back to Russia, we can see that according to Superjob.ru data, the income of MBA degree holders grows by 60–70% in two years following the graduation, but at the same time Headhunter speaks of only 35% of growth (MBA from A to Ya, 2017). The difference in data might be caused by difficulty of calculating the average. In many respects, this depends on the graduates that were included to the sample and the business-schools they graduated from. Nevertheless, even the most pessimistic data shows that the salaries of the MBA programs' graduates increase. Figure 5 depicts the growth of income after the graduation depending on the career trajectory, according to the research of "MBA in Moscow and in Russia" portal (Growth of income after MBA, 2017).

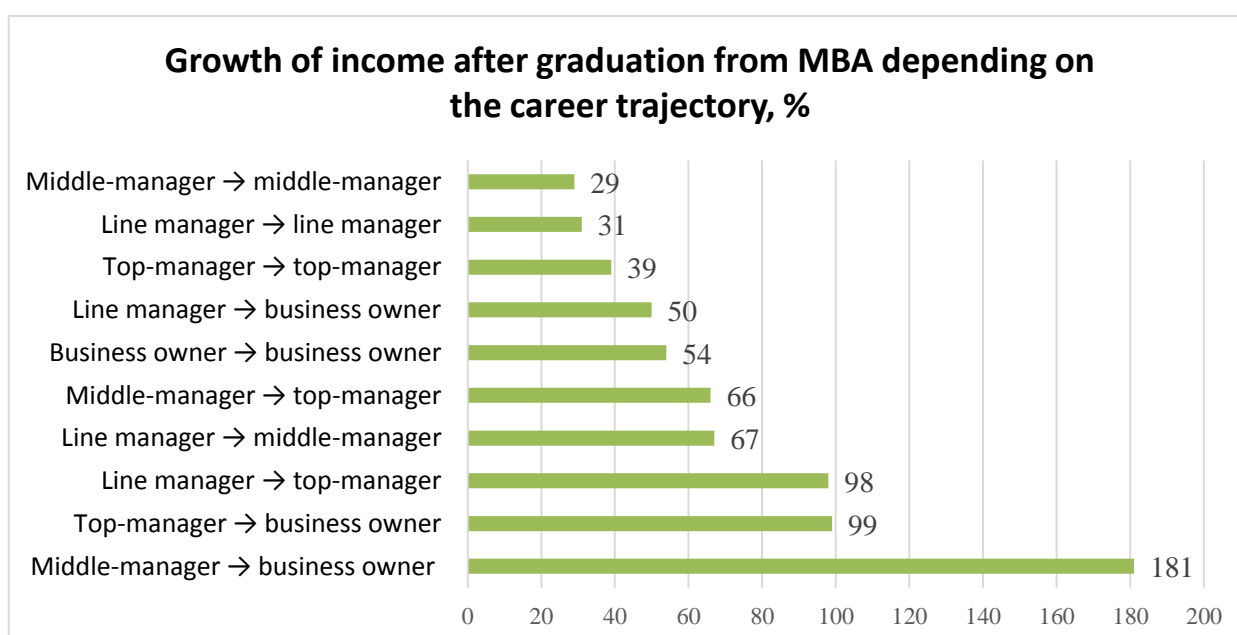


Figure 5: Growth of income after graduation from MBA depending on the career trajectory

In view of the abovementioned, we can summarize that Russian market of business-education is developing and the level of competition in this market is rather high and will rise in the following years. It needs to be noted that during the last ten years Russian business-education has achieved quite significant results:

- Business-education is recognized by the professional community and (to some extent) by the state.
- Russian business-education is recognized worldwide: reputation of RABE, international accreditations, double diplomas.
- All existing types and levels of additional education are offered in Russian market: professional retraining, MBA, EMBA, DBA programs, etc.
- All forms of training implementation (full-time, part-time, distance learning, blended) and all existing methods of training (action learning, project-based consulting, gaming, coaching, simulation, case method, etc.) are used.
- Professional unions were formed: RABE, NACDOBR (National accreditation council for business and management education), Association of managers, etc.
- Publishing activity is developing: over 20 specialized publishing houses, around 300 new textbooks in the field of management annually ("Piter", "Alpina Publisher", "Delo", "INFRA-M", etc.).
- Professional magazines for managers are published: "Business-education" (RABE magazine), Russian version of "Harvard Business Review", "Problems of theory and practice of management", "Russian management magazine", "Management of enterprise", etc.

So, what are the specific features of business-education as an integral part of continuous professional education (lifelong learning)? To what extent does this field of educational activity comply with the abovementioned principles of continuous education?

First of all, in our opinion, business-education is a subsystem of additional professional education, where the target group of students is managers of different levels and specialists that work in the field of economy and management of companies and organizations. This target group also includes entrepreneurs and business owners.

There exists an opinion that the target group of business-education also includes the students of economic and management institutions. However, we think that students in general – and the students of economic and management institutions in particular – is the target group of general professional education and before starting their professional activity they are only potential consumers of business-education services.

It's important to take into consideration the fact that the target groups is a significant differentiation factor for determining the type of educational activity. Moreover, to increase the quality of business-education, it's necessary to define the target group for each program as accurately as possible.

It means that in order to define the right target groups, the programs of business-education should be classified first. Table 1 presents the classification of the programs and other services of business-education according to a number of basic features. (Galenko, V.P., Tabelova, O.P., 2016)

In our opinion, composition of the target groups in business-education is its key specific feature comparing with other types of educational activity. We believe that specific features of business-education programs allow us dividing them into three main groups: general, functional and training (table 1).

The target groups of the general programs, which are oriented to development of competencies and skills of managerial nature, including strategic vision on companies' (organizations') development, as a rule, are represented by top and middle-management of companies. Among these general programs we can mention, first of all, EMBA and MBA level programs, which students already possess enough experience of managerial activity and aspire to continue their managerial career in future.

Table 1: Classification of business-education services

<b>Factor of classification</b>	<b>Content of the factor</b>
Purpose	<ul style="list-style-type: none"> <li>• professional retraining</li> <li>• improvement of professional skills</li> <li>• study-tours</li> <li>• consulting</li> </ul>
Duration	<ul style="list-style-type: none"> <li>• long-term</li> <li>• short-term</li> </ul>
Market positioning	<ul style="list-style-type: none"> <li>• open</li> <li>• customized/tailored</li> </ul>
Specificity of content	<ul style="list-style-type: none"> <li>• general</li> <li>• functional</li> <li>• training</li> </ul>
Sources of financing	<ul style="list-style-type: none"> <li>• individual</li> <li>• corporate</li> <li>• governmental</li> <li>• blended</li> </ul>

The target groups of the functional programs, such as “Corporate finances”, “Marketing”, “HR-management” and others, are oriented not only to those students who want to develop their professional competencies, but also at those who want to change the profession acquired within the basic professional education.

The target groups of the training programs stand somewhat apart, because they can consist either purely of top-managers, or of specialists, but can also be mixed, since the content of the trainings depends not only on the strict orientation directly to the target group, but also on the skills that have to be developed in the process of group work.

In the process of business-education programs’ development, special attention should be paid to observance of the basic principles of adults’ training, which is especially important while organization of educational process for specialists and managers. Among the most important principles the following may be mentioned (Galenko, V.P., Tabelova, O.P., 2017):

- maximal adaptation of educational process to the adults’ habit of “acting”, use of “action learning” method, including business and imitation games, “case study”, trainings, etc.;
- experience exchange and its systematization as an integral part of educational process.

It’s very important to create such in-class environment that will stimulate free exchange of opinions and views among students, which is a very significant part of managerial practice ensuring business efficiency. It is connected to the fact that in practice the efficiency of management in many ways depends on complex transformation of managerial processes on the basis of like-minded peoples’ group forming: managers and specialists.

Another distinguishing feature of business-education is that lecturers and trainers, working with adults’ professional audience, should be (if we may say so) very-very practically oriented. That is achieved by the fact that, as a rule, the majority of lecturers of business-schools participate in consulting/research work. On the one hand, this work significantly improves lecturers’ qualification. And, on the other hand, participation of lecturers and personnel of a business-school in consulting activities help to reveal the needs of companies and organization in improvement of the level of managers’ and specialists’ competencies directly “in field”. However, another important fact is that consulting (if organized and implemented in a right way) may become quite a serious income source for a business-school. (Mau, V.A., 2008)

And if we touched this topic, we need to note that financing is another significant specific feature of business-education. As we mentioned above, business education is financed out of four main sources (Table 1), though the proportion of the income received from them changes depending on both the condition of companies' economy and their priorities in the field of their personnel policy.

For example, the tuition fee for the EMBA program implemented at Higher Economic School of St Petersburg State University of Economics (HES SPbSUE) was paid from own students' funds by 70%-90% of students. This is connected not only to the fact that the EMBA program is the most expensive item in the product portfolio of the business-school, but also because significant part of the students prefers to conceal from the employers the fact of their studying at the EMBA program. The EMBA programs are a serious springboard for further career growth, which means that the employer may reasonably suspect his employee in his desire to leave the company and therefore wouldn't want to pay for his education. (Maybe it's a specific feature of Russian employers' mentality?)

The same tendency is typical for payment of tuition fees by the students of professional retraining and professional skills' improvement programs: about 60% of students pay their tuition fees by their own money. (Galenko, V.P., Tabelova, O.P., 2016)

As our analysis shown, in other Russian business-schools students also prefer to pay their tuition fees by themselves and rarely inform their employers that they study at a business-school.

Such position, on the one hand, shows that people are ready to pay their own money to acquire new knowledge and competencies, and on the other hand, illustrates rather low social responsibility of the state and business in the field of human capital development.

And finally, it's important to remember that according to the "Law of education in Russian Federation", additional education is a paid service (Federal Law dated 29.12.2012 №273-FZ). According to this law, business education services may be provided by companies of any organizational forms (state-owned and private institutions, consulting companies, etc.). Rapid development of business-education resulted in emergence of many companies, which can't ensure high quality of educational programs, but still work in the educational market. We believe it's only natural that any educational institution working in this field should be self-financing, but also aware of its social responsibility and, consequently, oriented not only at its own financial results. It also needs to be mentioned, that business-education in Russian is quite a "young" type of educational activity. As a result, sometimes pursuit of profit in some organizations providing business-education pushes to the background the content of education, the quality of educational programs.

The market of business-education includes both state-owned business-schools (as a part of universities) and private educational organizations (independent business-schools). In their own turn, state-owned business-schools might be a part of universities or be independent. Since the majority of respectable business-schools belong to the first category, we made an attempt to assess the competitiveness of an average university business-school by example of HES SPbSUE as one of three best business-schools of St Petersburg. (Table 2). The majority of Russian university business-schools work in more or less similar environment so we think that the following example might be considered a typical one.

Table 2: SWOT-analysis of a university business-school's competitiveness

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• High scientific and research potential</li> <li>• Reputation of the brand in the market of business-education</li> <li>• Wide international relations</li> <li>• Good connections with business and authorities</li> <li>• Participation in Russian and international competitions and granting programmes</li> <li>• Ability to attract the most qualified lecturers/</li> </ul>	<ul style="list-style-type: none"> <li>• Internal bureaucracy of the university</li> <li>• Absence of the developed system of project management</li> <li>• Organisational and financial dependence</li> <li>• Insufficient speed of new programmes' development and feedback for clients' needs</li> <li>• Insufficient use of distance learning</li> <li>• Insufficiently wide range of international programmes</li> </ul>

trainers/expert <ul style="list-style-type: none"> <li>• Support of educational process by own text-books and handouts</li> <li>• Own fundamental library</li> <li>• Access to the university infrastructure</li> <li>• Excellent location</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient motivation and irregularity of participation in Russian and international competitions and granting programmes</li> <li>• Absence of international accreditation</li> <li>• Insufficient “aggressiveness” insales</li> <li>• Insufficient informal external communications with clients</li> <li>• Insufficient work with alumnae and absence of endowment-fund</li> <li>• Absence of parking</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>• Promotion of the business-school’s services to Russian regions</li> <li>• Promotion of the business-school’s services to the neighboring countries</li> <li>• Increase of the range of joint international programmes</li> <li>• Increaseofdistancelearning use</li> <li>• Obtaining international accreditation</li> <li>• Networking with Russian and foreign business-schools, professional unions and authorities</li> <li>• More intensive participation in competitions and attraction of Russian and international grants</li> <li>• Support from authorities and business through special programmes and projects</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>• Instability of the economy of the country and the world in general</li> <li>• Variability of legislation</li> <li>• Bureaucracy of the state educational system</li> <li>• Absence of the state diplomas in additional education system</li> <li>• Expansion of unprofessional players (“amateurs”) to the market of educational services</li> <li>• Insufficient awareness of potential students of all the range of economic and management educational programmes</li> <li>• Partly outflow of potential students to MA programmes and second higher education programmes (increased by Bologna process)</li> </ul>

The analysis has shown that along with advantages of university business-schools, there exist certain problems of unused opportunities that significantly influence their competitiveness and sustainable development.

The strengths of a university business-school are obvious, since university environment allows creating and implementing educational programs of any level of difficulty, including the programs of EMBA/MBA level. And despite certain problems mentioned above, we strongly believe that exactly university business-schools are the leaders of Russian business-education and, consequently, they define the main trends of its development.

## Conclusion

What are the main trends in modern Russian business-education? We believe the following might be mentions among them:

- Increase of competition and quality requirements.
- Stable demand for EMBA/MBA level programs with simultaneous rethinking of their purpose: general or specialized (functional, branch, regional).
- Change in educational formats, increase in the number of programs with evening classes.
- Tailored/customized/corporate programs.
- Increase of requirements to practical orientation and interactivity.
- Project-oriented programs.

- Increase of demand for short-term programs and decrease of trainings' popularity.
- Improved and more complicated educational technologies, increase in demand for online courses.
- Activation of corporate universities.
- Emergence of new (not always sufficiently qualified) players in the market of business-education.

Summarizing all the abovementioned, we can make the following key conclusions:

1. Business-education is an integral part of lifelong learning that has a very important social function: promotes formation and development of human capital in a specific field of business and its management.
2. Business-education as a type/subsystem of lifelong learning completely corresponds to its basic principles such as democratism, being in advance, mobility and openness.
3. In our opinion, modern trends in business-education development in Russia prove that this form of lifelong learning becomes one of the most important factors influencing companies' and organizations' efficiency, and consequently, efficiency of the country's economy in general.
4. Internationalization of business-education (development of joint programs, international groups of students, etc.) promotes stability in the global economy through education.

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## Russian Higher Education System within the Global Challenges

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### Abstract

*Russian higher education system is at the stage of major change caused, on the one hand, by global changes affecting the entire global system of education and, on the other hand, by specific needs and local constraints. The coming era makes Russian higher education system meet the challenges of global padmanabhancompetition. Currently, Russia is in the process of transition to a qualitatively new stage of development based on innovation and science, in which intangible sphere turns into a crucial factor of economy competitiveness. Knowledge is assigned a part of an actual productive power and a main productive resource, which are the pillars of the new economy. In the coming few years, new technology and processes of digitalization will fundamentally change the approach to education, therefore it is necessary today to take steps to prepare for these changes in advance. Future jobs foresight is required, as well as adjustment of approaches to coordinationbetween universities and labor market.*

*In this context, the model of "Education 4.0" works as a tool for training of human resources of the new formation, ready for innovative activity and lifelong professional adjustment. Russian universities receive tasks connected with active participation of Russia in the regional associations, e.g. the "Silk Road" interlinking with the EEU and the EU, the SCO, the Baltic Sea region. In recent years, Russian state policy in the sphere of higher education has been targeted on promotion of economic and financial autonomy and sustainability of universities.*

**Keywords:** *higher education system, global competition, labour market, innovation and science, sustainable universities*

**Main Conference Topic:** *Education and Challenges of Teaching Professionals*

### Introduction

During the last twenty years Russian Federation passed a complex of legislative acts in the field of education, which defined the normative conditions for transformation of the education system in general and higher education in particular. A huge legislative work was carried out. Universities face a wide range of tasks now: internationalise their activity, introduce the network form of cooperation, expand the work with employers, develop scientific and research potential, actively participate in regional development and many other things. But the highest priority of the current reformation is the quality of education. All changes related to infrastructure, standards, forms and technologies of education are carried out in such a way so that each student get the opportunity to realise his potential at maximum and achieve high results in the modern rapidly changing world.

At the moment the higher education system in Russia can be described as a dynamically developing in correspondence with all the actual tendencies of the global educational environment. Among the main external challenges, that Russian higher education system is trying to reply to, the following might be mentioned:

- creation of innovative economy (economy and society of knowledge, digital economy, information society) and changes in the requirements of the society, including employers, to the competencies of graduates;
- globalization and regionalization of scientific and educational environment and the need in deep internationalization of universities' activity;
- growing competition among higher educational institutions for enrollees and the need in continuous improvement of the quality of educational, scientific and research activities, increase of the offered scientific and educational services' range and activation of work with potential consumers of services;
- State policy in the field of higher education aimed at promotion of financial and economic independence and self-financing of universities.

In conditions of the new technological mode creation, the modern economy and society are moving towards the economy and society of knowledge. In Russia, we are moving from exporting of raw materials to the innovative, social-oriented model of economic development. The main factor that forms and develops the economy of

knowledge is human capital, staff of the new type that are ready to innovative activity and continuous professional adaptation. (Arfae, A.V., Tabelova, O.P., 2017). The education system, being the main link in human capital reproduction and enriching it with new knowledge, becomes the source of economic growth and the tool of political influence in the global market.

Formation of the continuous education system is one of the fundamental imperatives for reformation of educational systems in all countries, including Russia. University education became only one of the stages of education during the whole life. In these conditions, the system of post-graduate/additional education receives a powerful stimulus for development. Digital revolution and rapid development of electronic networked education resulted in emergence of the new forms of educational services' rendering as well as promoted accessibility of education. The global tendencies show that higher education should become continuous (lifelong learning), human-oriented and available in various forms. And one of the most important directions of lifelong learning that is useful in this or that form for specialists representing almost any field of economy is business-education. (Galenko, V.P., Tabelova, O.P., 2016)

The global statistics confirms the tendency to mass character and accessibility of higher education, about 70% of secondary school graduates are enrolled to universities. This tendency also exists in Russia, but there are some specific traits. In 1991 Russia has 514 institutions/universities and about 3 mln students. The educational reforms that started in the beginning of 1990s were aimed at differentiation and decentralization of education, which resulted in big changes in the education system. The law "About Education" accepted in 1992 provided opportunities for development of private (commercial) education. (Law dated 10.07.1992 №3266-1, 1992)

At the same time state-owned universities started offering payable educational services on a wide basis. By 2012 the number of universities doubled and made up 1115 universities (40% of which were private), the number of students rose to 7 mln. Mass demand for higher education degrees brought mass supply, which in general resulted in significant growth of qualitative indicators, but often losing quality (Galenko, V.P., Tabelova, O.P., 2017). One of the problems in Russian higher education at that moment was creation of a big number of unscrupulous providers of educational services, increase in the number of branches that were insufficiently controlled by the head universities. At that almost all private universities prepared specialists in the field of humanitarian sciences (managers, economists, lawyers). In the state-owned universities payable groups were also typical for humanitarian studies. This resulted in another problem of Russian higher education – structural imbalance in preparation of specialists, which arose public criticism and calls for decreasing the number of students at humanitarian specialties.

A very important role in "restart" of the higher education system was played by "May decrees" of the Russian President issued in 2012 (May decrees of the President, 2012), which were followed by a number of system-forming normative documents (state programme "Development of education", federal law "About education in Russian Federation", regional "road maps", etc.) aimed at bringing the Russian higher education system to a qualitatively new level of development. Starting from the beginning of 2013, the system of higher education in Russia has been transformed in the following main directions:

- Provision of faculty/academia's salary growth (by 2018 the average salary of faculty/academia salary should reach 200% from the average salary in the corresponding region) and qualitatively renewal of staff (moving towards "effective contract" with faculty/academia).
- Optimisation of the universities and their branches, monitoring of their activity in order to assess the efficiency and reorganization of inefficient universities.
- Increase of competitiveness among the leading scientific and educational centres around the world, bringing by 2020 at least 5 Russian universities to the top-100 leading global universities according to the global university rating systems.
- Modernisation of the content and technologies of professional education in order to ensure its correspondence to the requirements of modern economy and changing needs of the population, enhancement of interaction with employers.
- Increase of financing for the universities that prepare specialists in the priority (for Russia) directions of science and technology.
- Diversification of financing sources and stimulation of economic independence of universities.
- Formation of lifelong learning system enabling to create flexible (modular) trajectories for getting new competencies by request of both separate people and companies.
- Provision of the state support for educational crediting.

- Internationalisation of Russian higher education and expansion of Russian educational services export.

As the optimization result, the following groups of universities were formed: world-class research universities ensuring Russian leadership in the fundamental science; branch universities; a group of humanitarian and social universities that prepare pedagogues; universities carrying out mass preparation of bachelors and masters for mass segments of regional labour markets; large centres of distance education.

The group of leading universities includes Moscow state university, St Petersburg state university, nine federal universities, 29 national research universities and 55 universities, which received federal funding for implementation of their programmes of strategical development on the competitive basis. The majority of the leading universities play significant role in social and economic development of their regions and federal districts. Exactly these universities increase the number of their R&D projects every year, in 2016 this growth made up over 20%. These universities participate most actively in implementation of the innovation development programmes of companies, small innovation companies are created on their base.

In 2013 began the project aimed at increase of Russian universities' competitiveness, internationalisation of education and orientation to international rating systems. (The Government has approved the measures..., 2013) Under this programme 15 universities were selected in order to promote them to the international rating systems. These universities received serious state financial support, which was used to update the educational programmes, increase the number of courses taught in English and improve the material and technical base. The project should result in entrance of 5 Russian universities to top-100 of global leading universities (according to the global ratings) by 2020. The task seems extremely ambitious since during the last seven years the top-100 of universities included no more than a dozen of "newcomers" – and these are the most dynamically developing universities of the world.

The problem of decrease in the quality of mass higher education was addressed by the system of universities' efficiency monitoring. The goal of monitoring is formation of statistic and analytic materials for further decision-making regarding the group of inefficient universities and their branches that have to be re-organised. Formation of statistical information is done by collection of data according to a unified electronic form<sup>1</sup>. The first pilot monitoring of the state-owned universities was held in 2012. During the monitoring 502 state-owned universities and 930 branches were checked. As a result, it was revealed that 136 universities and 450 branches had symptoms of inefficiency. These educational institutions were requested to undergo the re-organisation. The ministry divided the total list of "inefficient" universities into four groups.

Modernisation of professional education can't be held without qualitatively renewal of faculty/academia members, which required introduction of so-called "efficient contract" between lecturers and the institutions providing professional education. The efficient contract should be based on a competitive level of lecturers's salary in professional education system.

The idea of introduction of the efficient contracts' system in the state-financed sphere was announced for the first time in 2012 by Vladimir Putin in one of his pre-election articles. He noted that application of this contracting form should become the basis for improvement of state employees' salaries: the salary should directly depend on the difficulty of work, quantity and quality of spent labour. When speaking of faculty/academia, this contracting form takes into account the number and quality of scientific publications, the number of R&D projects for Russian and foreign partners, teaching load, scientific supervision over candidate's and doctoral's thesis, participation in organization committees of international conferences, congresses, etc. The same system of faculty/academia's labour payment exists in the USA, Germany, Great Britain, France and China.

<sup>1</sup> The university efficiency criteria in 2012 included:

- Average ball of the Unified State Exam (USE) of the full-time students (above 63 points for St Petersburg);
  - Volume of R & D per one faculty/academia member;
  - Share of foreign students from far and near (CIS countries) abroad (3% for St Petersburg and Moscow);
  - revenue of the university from all the sources per one faculty/academia member;
  - Total area of all educational and scientific premises of the university per one student.
- Among the key criteria of the university branches' efficiency (along with the abovementioned ones) are:
- average number of students;
  - share of candidates and doctoral students of science in all the faculty/academia number (only full-time);
  - share of faculty/academia members in the total number of employees of the branch (only full-time).

From 2013 the list of criteria also includes such criteria as employment of the graduates.

Introduction of the “efficient contract” system is a complex task, which imply active faculty/academia participation in R&D and increase of responsibility for the results of work. This priority task implies transformation of the system of academia’s professional skills improvement, as well as substantial measures for increase of management quality and retraining of top-management of the professional education system.

During the last three years we in Russia have maintained the level of accessibility of higher education at 57%, which means that every 100 high school graduates have 57 state-financed places in universities. Moreover, the procedure of state-financed places allocation is based on the analysis of the economy demand, data on the graduates’ employment, social sphere of the regions. In the last several years we have noticed growth of demand in the graduates of natural sciences, technical and engineering, pedagogical and medical fields. Based on this data we can see growth in the number of state-financed places for the abovementioned specialties and increase in the state financing of the corresponding universities.

In order to achieve the sufficient quality in higher education, the state represented by the Ministry of education and science starting from 2012 has been annually monitoring the efficiency of universities and their branches. As the result of their activity’s optimization, the number of insufficient universities and their branches decreased by 20.4% comparing 2017 to 2012, and the number of students decreased by 32.4%.

In the last few years, the structure of Russian higher education has stabilized. The number of students studying in the state-owned universities makes up about 80%, while private universities works with 20% of students. The system of universities’ efficiency monitoring despite the initial criticism of the society, brings positive results and promotes the increase of universities’ management efficiency.

Nowadays the priority of the Russian state policy is in provision of conditions for high-quality educational content’s formation, which should correspond to the priority tasks of the Russian economy development. The President and the Government of the Russian Federation formulated and set the tasks for transformation of the Russian economy to the “knowledge economy”, approved the “Strategy of the information society formation in Russian Federation for 2017-2030” and the Programme of the “Digital economy in Russian Federation” (Government order dated 08.12.2011 № 2227-p”, 2011; President’s decree dated 09.05.2017 № 203; Government order dated 28.07.2017 № 1632-p).

Russian universities face the task to prepare the staff of new formation, which will be ready for continuous professional adaptation and innovative activity. “Creation of digital economy” provides both opportunities and risks for universities and these risks should be taken into consideration while forming the strategies of universities’ development. On the one hand, due to demand for new professional competencies, the new niches in the highly competitive education market appear and it’s possible to occupy them in the nearest future. At the same time, transition to the digital economy creates real threat of dramatical changes in the range of professions, for example, many traditional economic or legal professions may disappear at all soon and we need to get ready for that.

At this, not only the economy changes, but the whole life routine of a modern person as well, the information society is being formed. “Generation Z” comes to universities now and they have new requirements to education. The problem of lost interest to studying and the corresponding risk of decrease in the number of students are quite real. There exists the problem of cultural digital gap between students and lecturers. The abovementioned risks should be taken into account while planning of both the content and the form of the educational process: we need to introduce actively the interactive, action-learning methods, use the tools of distance and electronic education, seriously consider the system of professional skills improvement and motivation of the faculty/academia.

In conditions of the digital economy’s and information society’s formation, Russian universities start the reorganization of their education activity based on the principles of lifelong learning within “Education 4.0” concept, which implies formation of competencies not only corresponding to the profile of the educational direction chosen by the students, but also the creative and social capitals. The new education model aims at providing students with the system, critical, analytical and creative types of thinking. To achieve this Russian universities need to create certain conditions and implement a number of strategic initiatives, such as: intensify application of innovative technologies and learning methods, increase of students’ motivation for scientific and research activities and project work, create the open unified information educational environment (complex introduction of distance learning technologies), develop interdisciplinarity in the educational process, increase of the faculty’s motivation and implementation of their professional skills’ improvement programmes aimed at learning new educational technologies and growth of “digital” literacy.

Serious attention should be paid to provision of correspondence between the competencies acquired by the students and the real professional needs of the labour market. In view of this, we need to introduce certain mechanisms of

involving the employers to development and implementation of educational programmes. In order to popularize the educational programmes of Russian universities and confirm their correspondence to the modern professional requirements of the labour market, the majority of educational programmes needs to undergo professional and public accreditation.

The next strategic initiative is increase of the existing educational programmes' quality and creation of new unique educational products with predominant innovative component both in their content and forms of their implementation. Network education is quite a prospective form. The state policy supports growing network interaction of Russian universities both between each other, and with foreign higher education institutions, scientific organisations, representatives of the business-society.

Globalisation of education and formation of the uniform educational, scientific and research environment is currently the global trend. All countries face the tasks of progressive integration of the national educational systems to the global educational environment; the universities face the task of their scientific, educational and innovative activities' internationalization. On the one hand, globalization of education opens a number of serious opportunities for universities: export of educational services, access to modern informational educational resources, increase of academic mobility of faculty/academia and students, growth of international scientific cooperation, wider opportunities for commercialization of scientific and research activities. Nowadays and in perspective the Asian countries provide the best opportunities. As the result of large-scale urbanization and targeted investments to human capital, the Asian countries (China, India, etc.) become the largest markets of science and education.

But on the other hand, globalization of education also brings a number of threats, which should be taken into consideration: competition for the most talented students rises, a real threat of losing the highly qualified staff for foreign universities appears; unification and standartisation of the educational systems and the risk of education's simplification are also rather problematic.

Regionalisation of education is connected to Russian positioning as an active participant of the regional unions, including creation of the Eurasian Economic Union (EAEU), participation in the project of the "New Silk Road" with EAEU and EU, in the Shanghai Cooperation Organisation (SCO), in BRICS, in the Baltic Sea Region. Participation of Russia in the regional unions set specific tasks for the leading universities related to social sciences. All countries have urgent need in both harmonization of financial, customs and other national systems with the foreign partners, on the one hand, and in formation of the powerful system able to fight and secure own national interests, including in arbitration courts and other global institutes and organisations. As an example, we can think of a special challenge for Russia within the "New Silk Road", which required a lot of highly-qualified staff competent in a wide range of specialties, including foreign languages.

The next global trend is intensification of competition in the market of educational services. Competition objectively forces universities to diversify the range of the offered educational programmes, which results in general development of the market, helps better take into account and satisfy the changing consumer demand. The wider is the range of the educational programmes offered by the university, the more opportunities a customer has to find the right image of his need and determine his individual educational trajectory, the higher is the competitiveness of the university.

Analysis of the global tendencies in the field of higher education shows that the leading universities, by developing the sphere of scientific researches, become maximally open to the external partners, try to participate actively in the work of innovation clusters in cooperation with authorities, commercial companies, research institutions and international organisations. The leading universities transform to innovation hubs aimed at efficient transfer of technologies and commercialization of the intellectual activity's results. Thus, the competitive universities necessarily develop the function of capitalization (commercialization) of the created knowledge.

Besides fierce competition, Russian universities are also forced to work in the environment of rigid budgetary deficiency. One of the main directions of changing the state policy related to higher education, is encouragement of financial independence and self-financing of universities. In view of this, the economic activity of universities are closely controlled; there exists a competitive allocation of financial means for both educational and scientific activity, the size of the state subsidies is slowly decreasing. This tendency is typical not only for Russian system of higher education's state regulation; that's the trend of the global level, illustrating the objective process of universities' orientation to a new, economically-independent management model – the model of entrepreneurial university. (Government order dated 30.12.2012 № 2620-p; Government decree dated 05.08.2013 № 662; Government decree dated 16.03.2013 № 211).

Implementation of the entrepreneurial university model helps to decrease the dependence on the state budget financing and expand the business and financial independence of the university as well as form such a management organization that is the most adaptive for operation in conditions of dynamically complex external environment. Russian "flagships" in this field are St Petersburg National Research University of Information Technologies, Mechanics and Optics; Moscow Institute of Physics and Technology; National Research Nuclear University MEPhI; Tomsk State University of Control Systems and Radioelectronics; National University of Science and Technology "MISIS"; Higher School of Economics and Tomsk Polytechnic University.

Understanding the complexity of the abovementioned challenges, Russian universities are forced to look for non-standard approaches in order to fulfil the set tasks. Having examined the main reforming directions of the system of higher education in Russia, it can be said that Russian universities are developing in correspondence with the global trends of educational environment's development. If Russian educational reforms will be implemented successfully, we believe that the competitiveness of Russian universities will significantly grow globally by 2020.

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## The IT Age: A Boon or a Bane in Education

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### Abstract

*As a Faculty of a premium Institute, i find that the ushering of the IT age has caused a multi-faceted revolution in education. It has been a terrific boon by providing ease of access to information of every kind to students at the click of a button and simplified their lives in many respects by bringing the world in their palm. But, this has a flip side on several fronts too. Firstly, the bombardment of information can leave a student bewildered about authentic and false information for which there is usually very little training to help them choose with discretion. Secondly, it brings into question the very need and role of a teacher whose function is at times being perceived as a less effective information-provider that its artificial counterpart. Furthermore, the almost latent 'I-know-it-all' attitude of the technology savvy students subversively impacts some important parameters of the erstwhile conventional classroom teaching-learning ambience.*

*This paper will explore the different aspects of the challenges of a teaching professional in today's technology supported educational context. It will also attempt to see how to best harness this force to enhance the student's learning experience instead of making the entire process of learning a victim of this inevitable development.*

**Keywords:** IT age, challenges, teaching professional, education

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

This paper titled, 'The IT Age: A Boon or a Bane in Education' is based on a phenomenological perspective which has evolved from my experience as a teacher in one of the country's premium institutes at IIT Kharagpur. It will also include some qualitative data that has been collated from inputs gathered from informal interactions with teachers and faculty members from different institutions as well as from interviews with some graduate and post-graduate students from several nations who are part of a cross-national study that i am currently involved in. Its objective is to try and understand the challenges of a teaching professional in today's technology supported educational context. It will also attempt to see how to best harness this force to enhance the student's learning experience.

Living in this fast-track world, i am often reminded of a saying attributed to Buddha – 'Remember that the only constant in Life is change'. This thought is echoed almost verbatim about three centuries later by Heraclitus in another part of the world, in Greece, when he said 'Change is the only constant'. These words of the great philosophers are further contextualised in the contemporary world by Peter Diamandis, an international pioneer in the fields of innovation, incentive competitions and commercial space, named by Fortune magazine as one of the World's 50 Greatest Leaders in 2014. He aptly stated that 'The only constant is change and the rate of change is increasing' (BrainyQuote, n.d.).

This 'increasing rate of change' is one of the by-products of the IT age that has swept across the world at a pace that is becoming increasingly difficult to keep up with. Its literal invasion in every dimension of our individual and collective existence facilitates living in ever so many ways while leaving us often breathless in life itself. Everywhere it pervades, it gives us a taste of the immense advantages it has to offer but in its absence, one feels its lack like a handicap that hampers regular functioning. In the same vein, this new advancement of the human civilization has left an indelible stamp in the field of Education also. Teaching before the IT age and teaching after its onset cannot be put on the same platform as the dynamics of the conventional teacher-taught-teaching mechanisms have been challenged and changed in irreversible ways. Recent developments in educational innovation and new technologies have made tensions between old and new models of schooling more apparent, creating new demands upon teachers as agents of change (Erstad, Eickelmann, & Eichho, 2015). The following section will examine the role of IT in education and try to understand whether it has been a greater bane or a boon for teachers, students and the process of learning and for knowledge acquisition itself.

## Context

As a teacher, i realised that my personal educational background and rapport with IT underscores my expectations from my students. I belong to Generation X of the late 1970s that was part of the cusp of the introduction of IT in higher secondary education in India. The experts on the subjects were still our teachers who based on their experience and reading would suggest books to look up to deepen our understanding on topics we studied. We would then physically go to the library and look through catalogues to find respective books as the primary sources of information on the literature available on a subject. We had to next manually write down their references as we literally penned our thoughts into a cohesive content. In short the whole process took time and required physical movement and interpersonal interactions for the acquisition and reproduction of knowledge.

As we moved into the 1990s, i became more familiar with the tools of the digital virtual world through graduation. At university, i felt its great benefits while writing my doctoral thesis. It was, however, a time when Google search was not yet pre-empting and prompting your search words and customising the following contents to suit your specific interests. We had to still think a lot more to do effective searches to get maximum access to find adequate materials online. With respect to the cell-phone, in my socio-economic circles, it was still an expensive gadget to own and had restricted calling functions as the 2 to 4 Gs data facilities were still in their conceptual stages.

A decade later, when i am teaching in a premium Institute, the learning scenario is unrecognisably transformed. In this generation of Millennials, born between 1980 and 2000, almost each student, if not everyone, has a laptop as a necessity for their technical engineering courses. There is free wifi throughout the campus and so students have all the facilities to be constantly and instantly connected to the internet and the world. The direct implication is that a student does not need to step out of his/her room or talk to another person and has virtual access to data on any subject under the sun with minimum physical movement. Furthermore, every student in the class has at least one smartphone and many have a spare one also, irrespective of their economic backgrounds. In this age of integrated technologies, the phone is no longer a luxury gadget for making phones calls but it has become a lifeline on which multiple tasks are performed. In fact, today's digital kids think of information and communications technology (ICT) as something akin to oxygen: they expect it, it's what they breathe, and it's how they live. They use ICT to meet, play, date and learn. It's an integral part of their social life; it's how they acknowledge each other and form their personal identities (Seely Brown, cited in Lyod, 2010). This was amply highlighted to me when a student whose phone i had confiscated wrote to me, 'I never thought of living without phone in kgp (kharagpur). This is the day which i never expected ... The only thing which i felt is like i can live without laptop but i cannot live without phone.'

On an average, Millennials spend 6.5 hours each day saturated in print, electronic, digital, broadcast and news media. They listen to and record music; view, create and publish Internet content; play video games; watch television; talk on mobile phones and instant message every day (Bickham, et al., 2008). Access to knowledge sources of every kind is available with the click of the mouse. As a result, their perceptions of time and efforts to avail of material and human resources for learning are fundamentally different from the student-mindset of the generation I belonged to. It is in this context that it is worth understanding the role of IT in education as well as the challenges teaching professionals like me face in this digital age and examining whether its presence has an overall positive or negative impact on learning environments.

## Method

My approach in this paper is based on a kind of triangulation.

The first is a phenomenological perspective of the problem as a teacher in a premium technological institute on the basis of which i will share my observations and class experiments with respect to the use of IT during lessons.

The second set of qualitative data emerges from a cross-national project, to evolve a multi-layered CODE (Collective Oath for Development and Excellence) of conduct in our Institute that would generate sukha or excellent and happy learning spaces. As part a pilot study, i held interviews with open-ended questions with about 16 young and adult graduate and post-graduate students between the ages of 22 to 54 years and from different countries in Europe and from Bhutan about their views on different parameters related to their learning experience including the use of technology and IT in classes.

Besides this, i am including some inputs from informal interactions with other teachers from out institute and elsewhere to understand their challenges as a teaching professional in this digital era.

## Findings

I realised that there are many aspects to the role and use of IT in the learning context, so I focused primarily on trying to understand its overall impact in the teaching-learning process and the role of the teacher within it. I present here the summary of some of my findings. I will first state some of the boons of IT and then its banes as assessed by me.

- The use of IT in education has facilitated access to enormous literature and data for research and teaching.
- Having a well-equipped Technology Enabled Learning (TEL) environment with IT facilities in class is very beneficial because it allows access to a very wide range of data in a short span of time which can be used effectively to make a class more interesting and interactive with prior preparation and training.
- One of the students mentioned that the diverse presentations on certain topics found online helped him understand a subject that his teacher was unable to present with sufficient clarity for him. It was therefore very helpful to have access to alternative ways of representing a theme. He also suggested that teachers ought to be more IT savvy in order to improve his presentation skills by watching online lectures in order to learn ways of keeping the students engaged and enthusiastic in the class.
- The response to the use of technology with IT through laptops and cell-phones in the class was mixed based on the interviews with the students. Interestingly, there was one person who strongly felt that the use of the cell-phone in the class was part of their individual freedom and that it was every student's right to decide where they want to pay attention to the subject being taught or to get distracted.
- The majority of students however said yes to the use of laptops in classrooms to facilitate the taking of notes etc but invariably added the clause that there should at the same time be strict controls on what is being accessed through it. It was worth noting that many of those who were in favour of the use of laptops in class were strictly against the use of cell-phones as they felt that it was a greater temptation for distraction. Only two out of sixteen interviewees categorically said that it should strictly not be used in the class because it often distracts the students who might switch to social media very easily while the teacher is presenting a topic. This last resonates with my observation as a teacher where I found that the usage of a cell-phone during a lesson clearly diverted the minds of those who were engrossed in it and also distracted their neighbours.
- In the Indian context, there has always been a very strong notion of respect towards teachers or the speakers that is reflected in the educational setup. This previously manifested itself in the form of the students paying full attention to what was being taught. This teacher-student relationship and related basic courtesies seem to be getting corroded with the onslaught of the IT age. We often find that students are less bound by the need to be all ears for the speaker during a session as they keep texting on their phones etc. and are not troubled by this behaviour as being a marker of disrespect towards the teacher. This can leave an adverse impression in the mind of the speaker which can manifest itself in the venting of certain frustrations by the teacher in the class.
- On a more psychological level, the ready availability of information seems to be having a two-fold effect on the student: i) there is a subtle over-confidence at times because he believes that he knows 'everything' because of the impression that he can access more information than what the teacher has to say on a topic with the click of a few buttons. This attitude of the student, affects not just the way in which he looks upon the teacher whom he has to learn from but also challenges the teacher's role as an erstwhile authority on the subject that is being taught which can be an unsettling feeling for the teacher.  
 ii) Secondly, the over-confidence of the student can result in the his/her belief that since everything is available at the click of the button while sitting on their bed then why waste time attending a lecture on which he feels he can gather more information from the internet directly. This in turn affects their regularity in class which this reflects itself in many other ways on their performance and relationship with the teacher.
- Furthermore, today, the speed of development in technology and IT has reached an exponential pace. Even before one settles with the reassurance of mastering one tool, it has often been upgraded to its next version. This rapid speed of change has the potential to adversely affect the confidence levels of the teachers and students because by the time they learn and master something, there are big chances that they might already be outdated.

These are just a selection of certain significant observations regarding the impact of IT in the educational framework. There are several other discussions that can follow what has been stated above which can be found in the vast literature available on what teaching and learning in a digital era implies.

## Conclusions

I have tried to present here my experiences and observations as a teacher in these times. But as we have seen, there are no clear cut answer to the question whether the IT Age is a bane or a boon for education. It has undoubtedly made significant contributions in helping people get access to a wide range of subjects with great ease and thereby given the educational community many far-reaching benefits. At the same time, however, we have seen how that ease of access has had other less desirable side-effects on the fundamental attitudes of the students who seem to regard their experience of classroom learning to a mere exercise of information gathering.

For me, one of the big questions that emerges from the increasing use of IT for education is about the role of the teacher itself. Will the impact of IT in education become so pervasive that the physical teacher in the class will become redundant someday? Are teacherless classrooms the next step of the IT revolution in Education? Is the role of the teacher merely that of an information provider? If that was indeed the case then replacing the teacher with technology would be a legitimate step. However, it is in this context that i would like to bring in a small dimension from the Indian perspective.

In the field of knowledge acquisition there was a recognition of three categories of teachers, *adhyāpaka*, one who teaches to earn a salary, *ācārya*, one who teaches not just a subject but about values of life by example and the *guru*, one who is capable of removing the fundamental and existential ignorances of the student and liberating them with the true knowledge of things. If the process of imparting and receiving knowledge is mutually perceived as nothing more than an activity for gathering information then the teacher will be limited to being an *adhyāpaka* and lose his/her relevance as IT becomes a more powerful provider for the same. But if the process of education involves a deeper dimension of growth for the student and the teacher through a better understanding of how things and people work in the process of sharing knowledge then IT can definitely serve to enhance the process of learning but will never be able to replace the human teacher. The call of the hour for teachers therefore, is to become *ācāryas* who will inspire future generations to become better human beings instead of being automated homo-sapiens which will be the natural consequence of a technologized education system. I would like to conclude therefore by stating that whether IT in Education eventually proves to be a boon or a bane will greatly depend on how human we can retain our education system.

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## Brief biography of the author

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## Labor Market Integration and the European Refugee Crisis: A Social Entrepreneurship Case

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### Abstract

*In 2015 and 2016, refugee migration to Germany has reached the highest level since WW2. To a steadily aging population and the resultant shortage of skilled labor, this influx of mostly young people can serve as a rejuvenating cure. Hence tapping into the labor market potential of refugees is a central challenge for both companies and society at large. This social entrepreneurship case focuses on the start-up and first two years of jobs4refugees, a Berlin-based non-profit organization, founded to help place refugees in jobs and apprenticeships commensurate with their levels of skill and education. The case describes how its founder reached the conclusion that both government agencies and the private sector were incapable of linking refugees' productive potential with employers' willingness to hire. Currently, jobs4refugees provides professional support to 17,000+ refugees in identifying a suitable field of work and imparts knowledge about the specifics of the German labor market. Simultaneously, the non-profit closely collaborates with 300+ companies and suggests potential candidates to them. Having mastered the early stages of a social start-up, jobs4refugees now faces the challenge of significantly scaling its operations, while ensuring the necessary and steady stream of revenues to finance its growth.*

**Keywords:** case study, labor market integration, social entrepreneurship, refugee crisis

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### A challenging situation

With an influx of more than one million refugees in 2015 and 2016, refugee migration to Germany has reached the highest level since WW2. Reliable forecasts are hard to come by. Yet, with root causes remaining unresolved and many refugees still on their way, the trend is likely to continue. Recent data suggests the majority of refugees will file an asylum request, and the majority will be granted protection. In short, most refugees will stay permanently [5] [11].

The task of integrating a large number of people into the labor market is politically and culturally challenging. In principle, however, it is nothing new; Germany has faced similar challenges in the past. In the 1950s and 1960s around 2.6 million people came as part of the guest worker (*Gastarbeiter*) program, amounting to 12% of all wage workers by 1973. Or take the influx in 1990 of around 400,000 so-called *Spätaussiedler*, ethnic Germans who had left the Soviet Union – at a time when around 16 million East Germans had to be integrated into the economic and political system of West Germany. Today, more than one in five Germans has a migrant background [3] [8].

From a macroeconomic perspective, there is conclusive evidence that the net effects of international migration waves are generally positive for the receiving country. Especially for the steadily ageing populations of many Western countries, such as Germany, largescale immigration can provide positive demographic effects. Without it, public welfare systems may become unsustainable. Thus, immigration can serve as a rejuvenating cure to counteract demographic change and the resultant shortage of skilled labor.

In November 2017, 420,000 refugees in Germany were registered as job-seeking, 175,000 of those as unemployed [4]. Without immigration, Germany's total workforce would shrink by about one third (about 16 million) by 2050, according to a 2016 study by the *German Labor Market and Occupational Research Institute (Institut für Arbeitsmarkt- und Berufsforschung, IAB)* [7]. In the same period, the share of people aging out of the workforce relative to the active workforce would double without immigration. Therefore, it seems convenient that the newly arrived refugees are on average significantly younger than the German residential population. Around 80 percent of refugees are younger than 35, 60 percent younger than 24 [2].

The refugees are not only relatively young, they are also better educated than many experts had expected. A recent survey by the *German Federal Office for Migration and Refugees (Bundesamt für Migration und Flüchtlinge, BAMF)* also found that the majority of adult refugees and asylum-seekers (58 percent) have spent at least ten years at school, at university or in apprenticeship programs (compared to 88 percent of the

residential population in Germany). 13 percent hold university degrees, and 6 percent hold vocational qualifications [2]. Of course, it would be naive to assume that the lion share of the refugees is immediately available for the German labor market. There are huge differences between the work requirements in the Middle East or in North Africa and those in Germany. Only a small fraction of all refugees are readily employable engineers or mechanics. Even if it takes time and persistence for most of the newly arrived to reach the same productivity level as their local colleagues, there is enormous potential. After all, those who come to Europe under risky, often life-threatening, conditions are unlikely to be merely welfare tourists.

The consultancy *McKinsey* estimates that the 1.3 million refugees, who are likely to be accepted as asylum seekers in Europe, will contribute some €60 billion to €70 billion to the annual gross domestic product (GDP) from 2025 onwards, provided that the necessary training investments are made [9]. However, government programs alone seem to be insufficient so far. According to statistics published by the *German Employment Agency (Agentur für Arbeit)*, about 50 percent of those German residents who immigrated from other countries are still unemployed five years after their arrival [1]. In a similar vein, a recent study by *IAB* predicts that in the refugees' first year of arrival only 8 percent will find work. Within the first five years the share is said to rise to merely 50 percent [7]. That is clearly not enough.

### ***jobs4refugees* – How it all started**

When in the summer of 2015 hundreds of citizens of Munich welcomed the refugees arriving by train, Robert Barr first started to get in touch with the newly arrived. After having graduated with a BA in Philosophy & Economics and an MSc in Global Politics from the London School of Economics (LSE), he volunteered in several refugee homes and was immediately impressed by the refugees' motivation and potential. His own experiences led him to believe that those voices in the public discourse that paint a picture of refugees as unskilled, helpless, and uneducated were fundamentally wrong. The people he met while volunteering were bright, educated, and determined. It made him determined that the German society could do better at integrating newcomers. Yet, he also saw that the biggest help would be, along with extending their German language skills, to assist them in finding work. It seemed hard to deny for Robert that as soon as refugees find employment or are being trained, their chances for integration at a broader level would benefit significantly. In the workplace, refugees have to rub along with locals and learn their customs, and vice versa. Also, he found that jobs keep young men out of trouble – which is why policies that keep newcomers idle are so destructive. The government's responsibility, he thought, might not extend beyond basic levels of assistance. Nor was he interested in undertaking a lobbying effort to push for new public programs. He resolved, rather, to do something on his own.

In September 2015, Robert Barr established *jobs4refugees* as a project in Munich. His early effort to act as matchmaker between refugees in Munich and potential employers in the city and its surroundings was supported by *Netlight*, an IT and management consultancy. They provided funding, office space, work equipment, and expertise (without intending any commercial purposes). Robert went to the refugees' emergency accommodations to talk to them directly and gather data about their knowhow, education, degrees, professional interests etc. Based on information from commercial directories and online job markets, he mostly called companies from the region. Whenever a company showed interest in hiring refugees, he forwarded the profiles of potential job candidates from his database. Before taking his project further, however, he thought to gain a clearer picture of the situation.

### **Requirements for a rapid labor market integration**

Robert Barr understood not only the refugees' and employers' needs, but also that, for rapid integration, improvement of the legal and administrative conditions was (and still is) crucial. He identified three key conditions that shape the operations of his start-up: legal certainty about residence and work permits, language proficiency, and recognition of qualifications and competencies.

**Legal certainty about residence and work permits:** Administrative and legal barriers represent a major challenge for companies when recruiting refugees, especially the uncertainty about a candidate's prospects of

remaining in the country permanently. The processes are lengthy, difficult to plan and the outcome often unpredictable. Over the last two years, however, the opportunities to employ refugees have continually improved. Today, they are generally better than many potential employers are aware of. Measures such as the recently introduced *Integration Act* effectively reduce barriers, and help streamline the asylum application process.

**Language proficiency:** Without a shared language, it is all but impossible to engage with other people in a meaningful way. Thus, language skills are a fundamental prerequisite for full participation in the destination society and economy. The BAMF coordinates the so-called integration courses, which consist of at least 600 hours of language classes (with an intended B1 level) as well as at least 60 hours of cultural orientation classes. As of July 2016, occupation-specific language classes (with an intended B2/C1 level) were extended for refugees with a reasonable prospect to remain in the country permanently. To meet the increasing demand for courses, the German government increased BAMF's budget by more than 100 percent in 2016 [6].

**Recognition of qualifications and competencies:** About three in four refugees state that they have gained work experience in their home countries, on average for more than six years [2]. Thus, many refugees possess professional competencies that can be useful. Most of these competencies, however, have been acquired 'on the job' without any formal certification. So far, standardized approaches to document both informally acquired competencies as well as formally acquired degrees do not exist. There is a striking need for more transparency and reliability in recognizing refugees' qualifications and competencies. In order to practice one of about 60 state-certified professions in Germany, a respective formally approved certification is mandatory. Also, in order to start any formal school education, vocational training, tertiary degree, professional development or re-training in Germany, the formal approval of foreign entry degrees is a prerequisite. Non-regulated professions, including academic professions and professions covered by the dual education system, do not require any approval of foreign certificates (an approval is only recommended). The idea of this approach is to allow employers to self-assess the skills of a given applicant and thereby cut the administrative process short. All refugees, irrespective of their nationality or residential status in Germany, are legally entitled to a free-of-charge validation of whether their foreign degrees qualify as equivalent to German degrees.

### **What *jobs4refugees* wants to achieve – and what it has achieved so far**

Based on his formative experiences and early successes in Munich, Robert Barr decided that *jobs4refugees* should not remain a temporary project. He decided quickly (i.e. in November 2015) to move to Berlin to build up *jobs4refugees* as an independent organization there. He saw more potential to have an impact in the German capital because the social business scene and the possibilities for building a network were significantly greater there than in Munich. Also, much more refugees arrived in Berlin than in Munich, and the local labor in Berlin was significantly tighter. While continuing his on-the-ground work, he recruited the first two coworkers in December 2015. In June 2016, he formalized the project and officially founded *jobs4refugees* as a charitable non-profit organization.

Robert Barr formulated that the mission of *jobs4refugees* was "to help young refugees overcome the systemic barriers to workforce entry, promote inclusive and sustainable economic growth, and create a pathway for refugees to enjoy self-determined participation in the German society. *Jobs4refugees* strives to be a reliable partner for the newcomers to Germany so they may acquire productive and decent employment and gain a foothold in the German workforce and society and realize their full potential." More specifically, he defined the following five goals:

- **Goal 1:** Register demographic data for work-seeking refugees; Establish a network of employers open to the integration of refugees into their workforce.
- **Goal 2:** Ensure that young work-seeking refugees gain a job or apprenticeship.
- **Goal 3:** Build new partnerships and interact with political decision-makers.
- **Goal 4:** Change practices and mindsets in the employer community so that refugees' talents may be appreciated and not discriminated against; promote a greater acceptance of the newcomers within the German labor market and among the German people.
- **Goal 5:** Build an IT-system and improve and formalize data collection and work processes.

These five goals and their respective achievement to date shall be discussed in the following:

**Goal 1: Register demographic data for work-seeking refugees and establish a network of employers open to the integration of refugees into their workforce:** The young team initially spent most of its time collecting refugees' personal data about legal status, skills, educational/vocational background and professional ambitions in direct interviews in refugee homes and language schools. Simultaneously, they tried to establish relationships with refugee home managements, such as the *Evangelisches Jugend- und Fürsorgewerk*, and language schools while drawing on social workers as multipliers. Additional early multipliers were the Facebook-community *arab almanya* and large refugee home carriers, such as the *Arbeiter- Samariter-Bund*. On the employer side, *jobs4refugees* continues to grow its network, in Berlin and nationwide, from a broad range of industries. *jobs4refugees* approaches potential employers either directly or through trade associations, HR-newsletters as well as presentations at events and fairs. Effective multipliers are especially trade associations, such as the *Chamber of Industry and Commerce (IHK/DIHK)* and organizations such as *Berlin Partner für Technologie und Wirtschaft*.

As of summer 2016, the *jobs4refugees* team could offer open consultations in its own office space in Berlin and thereby significantly reduce its time-consuming on-site visits. In November 2016, the young organization launched its online platform and could thereby suddenly boost its reach. With an increasing number of registered refugees in its database, the non-profits' focus gradually shifted towards actively preselecting qualified candidates whenever a vacancy at a registered (or unregistered) company appeared. In April 2017, *MigrantHire*, another Berlin-based social start-up with a similar mission to match refugees and employers merged with *jobs4refugees*. Because of substantial synergies between the two, the merger represents a milestone in the development of *jobs4refugees*. Whereas *jobs4refugees*' focus had been more heavily on personal support, the strong IT background of the *MigrantHire* team had led to a focus on the development and implementation of an online job platform including an intelligent matching algorithm. The complementary IT skills allowed the *jobs4refugees* team to spend more time on specific challenges in the application and recruitment processes of individual candidates.

Today, the *jobs4refugees* team of five permanent positions and numerous volunteers provide professional support to 17,000+ refugees and 300+ companies. Repeated positive media coverage – even beyond Germany – and the resulting public exposure and attention may have been helpful to reach those numbers.

**Goal 2: Ensure that work-seeking refugees gain a job or apprenticeship:** Refugees need professional orientation as early as possible. *jobs4refugees* supports them in identifying a suitable field of work. Professional orientation also imparts knowledge about the specifics of the destination country's labor market, which may differ considerably from the structures in the refugees' home countries and which may not be intuitive for newcomers.

Following a professional orientation, *jobs4refugees* searches its continuously growing network of employers for fitting job opportunities. Simultaneously, the organization searches its database to match candidates for specific job openings. Having identified a match between a potential employer and a refugee, the organization facilitates the application process by helping create the application documents and coordinating the job interviews. To increase the refugees' chances of gaining an adequate position, *jobs4refugees* seeks to improve the applicants' employability by means of CV and interview workshops as well as one-on-one workplace readiness trainings, supported by corporate volunteers. It may be hard to believe, but there are candidates with decades of work experience who have never written a CV or experienced a formal job interview. For vocation- or industry-specific knowhow, *jobs4refugees* draws on a growing pool of experienced volunteers from the field to provide the refugees with further interview preparation. To smoothen the transition period into apprenticeship or employment, supporting activities which prepare refugees for their upcoming tasks are very important. Many companies offer internships or trial work days which the *jobs4refugees* team helps arrange.

Of course, labor market integration does not end with the signature of an employment contract. After a successful placement, *jobs4refugees* provides ongoing guidance, allowing the newly hired to „survive on their own“. This guidance also includes a regular exchange with employers to detect and address potential problems early on. *jobs4refugees* also supports refugees who must initially accept less demanding jobs and gradually increase their skillset to qualify for more ambitious jobs. The continuous feedback from both employed refugees and employers allows *jobs4refugees* to learn and adapt its own processes where necessary. One key insights so far is that it is absolutely crucial to transparently manage expectations on all sides. Transparent expectation management should contribute to identifying and overcoming communication difficulties, often

stemming from cultural differences. Another insight is that even though refugees deserve trust, it should be absolutely clear that double standards are not an option. The entire staff – refugee background or not – should be measured against the same performance criteria and behavioral norms.

**Goal 3: Build new partnerships and interact with political decision-makers:** *Jobs4refugees* knows well that partnerships and cooperation are essential to achieve its objectives effectively. The cooperation with government agencies and close connections with policy actors allow the start-up to continuously develop and expand its practical – and not least its legal – expertise on the labor market integration of refugees. *Jobs4refugees* benefits from direct contacts with the *Foreigners' Authority (Ausländerbehörde)* and the *Federal Employment Agency (Bundesagentur für Arbeit)*. These contacts are massively helpful for the intermediation between employers and agencies – be it to bring a candidate into an advanced vocational training, a language course or just to speed up the process. Robert Barr and his colleagues regularly participate in round tables co-hosted by the president of the State Office for Health and Social Affairs (*Landesamt für Gesundheit und Soziales*, or in short *Lageso*) and a member of parliament of the governing coalition. Drawing on this privileged access, *jobs4refugees* can provide both employers and refugees with reliable up to date consultation with regard to any dealings with government agencies and bureaucratic processes.

*jobs4refugees* also works in partnership with companies and organizations. For example, in order to improve and grow its portfolio of the work-seeking refugee population and a network of employers open to the integration of refugees into their workforce, *jobs4refugees* partnered with *FJORD*, a design and innovation consultancy owned by *Accenture*. Together, they developed a well-rounded frontend solution, including an overhaul of the *jobs4refugees* website and the implementation of a simplified online registration for refugees and employers. With this enhanced web functionality, *jobs4refugees* became poised to reach a greater number of people and enhanced the quality of matches through a broader portfolio of candidates and job openings. *Accenture* also provides specific expertise, e.g. a full day train-the-trainer workshop on HR and recruiting skills to improve *jobs4refugees'* team operations.

A close cooperation with *Upwardly Global*, which has 17 years of experience as a charitable non-profit organization helping migrants and refugees integrate into the U.S. workforce, proved to be extremely helpful, too. *Upwardly Global*, operating nationwide with offices in currently five major U.S. cities, has already placed 4,000+ foreign-born jobseekers into jobs and supported the job search of 8,000+. They have built a network of more than 400 employer partners across a broad range of industries [10]. The *jobs4refugees* team benefits immensely from *Upwardly Global's* vast experience and expertise via regular, bi-weekly exchange and mentoring calls.

To build new contacts and partnerships as well as to strengthen the established ones, *jobs4refugees* will continue to cultivate its participation in roundtable events and individual meetings with municipal and federal decision makers. Visiting conferences and fairs are also a priority in order to develop new contacts to and partnerships with individuals and relevant interest groups.

**Goal 4: Change practices and mindsets in the employer community so that refugees' talents may be appreciated and not discriminated against, and promote a greater acceptance of the newcomers within the German labor market and among the German people:** Unfortunately, some people's attitude towards refugees is still characterized by prejudices and rejection. The *jobs4refugees* team is determined to courageously embrace a leading role in actively opposing ill-founded negative attitudes. As direct contact with refugees reduces prejudices very effectively, the non-profit tries to actively create opportunities for personal interaction between refugees, volunteers, employers and authorities. As a platform for all those groups, *jobs4refugees* encourages them to make their own engagements and experiences more heavily public, thereby facilitating the exchange of expertise and allowing for learning from best practice examples. Ideally, this collective effort promotes a greater acceptance of the newcomers within the German labor market and people.

For some companies, it seems not entirely clear yet that such active communication may not only be justified by social responsibility considerations, but can also improve the public image of their company as an attractive employer. Openness and multiculturalism, as elements of an employee value proposition (EVP), can be appealing not only to refugees but employees more widely. Accordingly, refugee-friendly companies tend to benefit from a larger pool of talented and motivated applicants.

**Goal 5: Build an IT-system and improve and formalize data collection and work processes:** To keep pace with its own growth and to further increase its impact, *jobs4refugees* must continue to develop its IT infrastructure, improve and formalize data collection, and professionalize its work processes. To achieve this, its close collaboration with *Upwardly Global* turned out to be very helpful. Via *Upwardly Global*, *jobs4refugees*

got in touch with *Salesforce*, a global service provider for customer relationship management (CRM) systems. *Salesforce* had worked with *Upwardly Global* for many years and soon became a charitable partner to and sponsor of *jobs4refugees*. Since early 2017, *Salesforce* closely supports the *jobs4refugees* team with both its frontend and backend implementation. That is, the *Salesforce* system is now used to manage *jobs4refugees*' entire data, be it a refugee searching for a job or a company posting a job offering on the website. Currently, the team is working on several new functions to make the matchmaking process more efficient and convenient for its users, such as automatized emails and more fine-grained search filters. In the context of its *Buddyforce Mentoring Program*, *Salesforce* additionally offers a wide range of personal support by volunteering *Salesforce* employees, such as workshops, cultural events, one-on-one mentoring and even visits to the authorities.

*Upwardly Global* was not only helpful for *jobs4refugees* in terms of their IT- and data management. The continuous exchange with *Upwardly Global* (and *Accenture*), also helped the *jobs4refugees* team greatly to professionalize its work processes. Indeed, all its development needs are closely related to each other: More efficient work processes were largely enabled by the generation of better matches between refugees to employers, which were enabled by more comprehensive data analysis. With an increasing number of users and a dynamic database, the task to sustain this virtuous circle is an ongoing challenge.

### What's next?

To further increase its impact – if not to survive – *jobs4refugees* needs to grow. But how? A clear bottleneck for the young organization with its limited operational resources is its very personal, yet very time-intensive support. Yet, even though every refugee and every employer has a unique background and unique needs, there are clearly repeating patterns in successful matchmaking. Thus, reflecting upon the scalability of its services, *jobs4refugees* is currently planning to add online learning content to its platform. Refugees could learn about various topics, such as application processes, and engage with interactive training tutorials and materials. Employers and refugees can inform themselves about administrative barriers, for example. This has the potential of freeing up time and resources for the *jobs4refugees* team, as refugees can prepare themselves in their own time. Further, *jobs4refugees* could conveniently draw on the experience and existing learning materials of *Upwardly Global*'s Cornerstone learning platform. The companies *Slide Presenter* (a software for authors), *Role Play Rehearsal* (a video role play/communication software) and *Supratix* (a learning management system) are willing to support *jobs4refugees* with additional learning software for their learning platform. Ideally, this learning platform approach will allow the team to spend more time on the interactions between refugees, employers and authorities which can only be facilitated on a personal basis.

In a similar fashion as LinkedIn or Facebook, *jobs4refugees* could also further open its platform for user generated content. Refugees, employers, volunteers and authorities could directly communicate with each other via their public user profiles. With a critical mass of user activity, the drawing potential of the platform to attract new users could grow exponentially. As a convenient byproduct, the many success stories would receive much more attention and could, in turn, positively shape the public opinion about refugees in general. Another big topic on its agenda is the opening of a second *jobs4refugees* office in Frankfurt (Main) with a team of three. This development step reflects the inherent need for proximity and understanding of local labor markets, given *jobs4refugees*' strength in personal one-on-one contacts. Even if it makes perfect business sense to centralize its increasingly important online platform in one location, more decentralized operations are unlikely to become obsolete soon. How geographically spread the organization's structure will become in the future is subject to an ongoing learning process.

A final major topic on the organization's current agenda is its financing. In the start-up phase of its operations, *jobs4refugees*' primary funding source were grants and donations. In 2016, *Jobs4refugees* won the *Ashoka Innovation-Fund Integration*, which is awarded to organizations who are fostering refugee integration. Further larger grants came from *Salesforce* and *Accenture* in 2017. To date, the lion share of its financing comes from those three sources. Larger donations came also from *Netlight Consulting*, *Deutschland wird Heimat gGmbH* and the *Hilfe zur Selbsthilfe* foundation.

In order to become self-sustaining in due time, *jobs4refugees* is building a non-profit social business model based on two revenue streams. First, client companies will be charged commission fee for hiring refugees with the support of *jobs4refugees*. Second, *jobs4refugees* is certified and eligible for receiving government funds for successful placements. Part of the generated revenues will be used to support the integration of less qualified

newcomers into the German labor market. This cross-financing will allow *jobs4refugees* to continue and extend its approach to integrating refugees into the German workforce. To reach this goal, further certifications and audits will need to be conducted and a solid network and proof-of-concept will be needed.

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## Educational Importance of Sustainability

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### Abstract

*The role of this paper is to emphasize the importance of sustainability in the educational system. The paper will perform a comparison of four selected universities: University of Wisconsin – Parkside, USA; Mahatma Gandhi University, India; University of Zagreb, Croatia; and Ostfalia University, Germany. Course offerings related to climate change, waste management, and other environmental aspects will be analyzed for comparative purposes and presented. The existing models of education as related to the environment in the developed countries will be analyzed. A literature review and interviews with the leadership of the educational leaders will be conducted to arrive at appropriate conclusions. Knowledge transformation to a sustainable environment via educational institutes can bring valuable results for society and this research will attempt to do that.*

**Keywords:** education, environment, importance, earth, sustainability

**Main Conference Topic:** Role of Education, Environment

### Introduction

Cultivation of sustainable environment educational programs is necessary to achieve the salubrious life of our planet. It is important to maintain the earth's environment for the survival of all the living being. Education plays a significant role to achieve a sustainable environment. Many developed countries provide beneficial educational programs of sustainable environment science. The goal of these educational programs is not only to provide career advantages but also to spread awareness about the worth of sustainable environment.

Some of the educational institutes have taken progressive steps to promote sustainability: International organizations for global sustainability produce opportunities to educate others through presenting research analysis. Many universities have collaborated for international conferences for healthy environment projects. A few of those universities are University of Wisconsin – Parkside, USA; Mahatma Gandhi University, India; University of Zagreb, Croatia; and Ostfalia University, Germany. These universities contribute at various levels for a sustainable environment.

The vision of these universities clearly establishes the high-priority for a healthy ecosystem as a part of their contribution to the local and global communities. For instance, School of Environmental Science, Mahatma Gandhi University stated, "The School of Environmental Sciences is founded on the lofty vision of a 'caring wisdom' that aims at sensitizing present and future generation to the need for the enrichment of individual, to the sustainable development of society." Dedication of these universities to promote sustainability awareness can be estimated through various educational programs at different levels.

### Related Work

The significant efforts to achieve university's vision for the sustainable environment through educational programs, workshops, and regular practices as a part of lifestyle varies university to university. First, the University of Wisconsin - Parkside (UWP) provides a degree in Bachelors of Science in Sustainable Management with the motive to enhance business's profitability along with environmental and community needs. The course completely focuses on escalating energy costs, dwindling fresh water supplies, global climate change, and much more. UWP encourages students to apply for this program through various scholarships.

In addition to the academic program, UWP has committed to fulfill its vision through on-campus activities and clubs, and through outside contracts. There are miscellaneous on-campus activities organized by different departments such as workshops, day trips, and other events. Recently, Adventures in Lifelong Learning (ALL) hosted a day trip "Alternative Energy Outing" on November 1, 2017. During this one-day bus trip to the Point Beach Nuclear Plant in Two Rivers, WI and to Blue Sky Green Field Wind Energy Center in Malone, WI achieved its mission to educate about safety, electric generation, wind energy storage for future use, the pros and cons of wind power and clean energy sources. While this

trip covered the energy based educational information for a better environment, on the other hand, university's collaboration with the City of Racine and the Root River Environment Educational Community Center (REC) allocate resources to get closer to our environment and to get hands-on experience with environmental science for water environment sustainability. REC hosts environmental education workshops for families, private events, and school field trips with the mission "to provide community members with opportunities to explore the Great Lakes and connected ecosystems through recreation, education, demonstration, and research."

Second, Mahatma Gandhi University, India has established its own standards to contribute for the sustainable environment. The School of Environmental Science has established a research center to explore environmental based research areas with the involvement of highly qualified and experienced faculty members for teaching, research, extension, and consultancy. Research areas includes, but is not limited to conservation biology, pollution studies, climate change, and sustainable development. The school provides consultancy services for (but not limited to) Eco-development, Solid Waste Management, and Environmental Impact Assessment and EMP report preparation. University's extension activities include a collaboration with Brown University (USA) for a crucial program "Rain water for humanity" with the motive to provide clean drinking water and sanitation to small villages. University is conducting various ongoing research programs for accurate and efficient environmental education and services. The university has established "Jeevaka Live Laboratory" on World Environment Day in 2010 to mark rich biodiversity in the campus. University has been actively conducting many educational environmental seminars since 2012 to attain sustainable environment through teaching and motivating for eco-friendly actions.

Third, University of Zagreb, Croatia promotes educational programs to "Recognize the importance of sustainability and internationalization in the global environment." University has led many projects like Modeling of distribution channels for ecological products and consumer protection in the Republic of Croatia, Economic policy options for new environmental standards by 2030, and Proactivity in promoting ecological sustainability between trade and tourism. The Vice-Dean for International Relations Professor Nevenka Čavlek, Ph.D. led a presentation to promote the possibility of achieving profits and sustainable environment simultaneously. University has made it internationally in the aspects of welcoming international students and leaders to educate in various areas. Recently, Professor Marc J. Epstein, a well-known global leader to educate in the areas of innovation, sustainability, performance measurement and accountability in both corporations and non-profit organizations lectured on "Achieving breakthrough innovations" to the university students in April 2017.

The last, Ostfalia University, Germany, has put the emphasis to provide essential environmental science programs (Bachelor and Master degrees) with the consideration of possible careers in the market with that degree. Energy-Optimized System (EOS), the scientific institution of the Faculty of Supply Engineering, enhances the vision to teach, research, study, and further education in the field of energy, environment and building management. EOS has numerous laboratories to teach, study, and research for sustainable environment science to discuss areas of concerns and possible treatments such as water and wastewater technology, energy and refrigeration technology, and sanitary engineering. These laboratories focus on different areas of environmental science. In addition to this, Institute for Biotechnology and Environmental Research (IBU) has laboratories like soil and water protection, radiation protection, and emission control. University provides information on numerous areas of environmental research enriched with educational information.

## Performance

Institutes are providing their best resources to inform about environmental science and its importance in our educational system as well as in the workplace. Many educational institutes and business companies practice eco-friendly daily routines from using separate trash bins for recyclable products to providing beneficial information to adopt environmentally friendly habits. Because of their efforts, students and universities are performing magnificently better than others.

First, one of the students who took Sustainability Management Degree shared his success story to emphasize the effect of the program in his professional life. Nate Titus, Sustainability Management Bachelor's Graduate 2015, works at Waukesha wastewater treatment plant as a maintenance supervisor. This four-year degree changed his status from operator to manager, and he developed skills that help him every day at his work. He mentioned, "It will make me attractive as a manager, but also keeps in line with ecology and sustainable development."

Second, Mahatma Gandhi University (India) has established a great model for an extension program "Rain water for Humanity." The school has installed a rainwater harvesting structure to conserve 1.1 lakh liters of water at Achinakom Panchayath in Kuttanadu region in December 2009. In addition, the school has been identified by the Government of

Kerala for the placement of an Inter-University Center, “Advanced Center of Environmental Studies and Sustainable Development.” The university also established an outreach center, Highrange Environmental Research Center, to extend its environmental activities. The school has collaborated with National Center for Antarctic and Ocean Research (NCAOR) to carry out environmental research.

Third, University of Zagreb (Croatia) has opened its doors for international students and professors to educate students on a wider level. It’s promising towards a sustainable environment and is a member of International Sustainable Campus Network (ISCN) with a mission “to support leading colleges, universities, and corporate campuses in the exchange of information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching.” The university has done various international projects under “FP6 and FP7 – EU’s Framework Programme for Research and Technological Development.” The universities in the capitals of Europe has taken a pledge to be environmentally friendly and has led many national and international projects and professors have published many articles and projects related to the environmental sustainability.

The last, Ostfalia University (Germany) focused on the environmental research areas to come up with updated and accurate information regarding sustainability. The numerous laboratories give research opportunities to the students in the wide range of environmental areas, including biomodeling. Additionally, University has an Institute for Recycling since 1991 with modern equipment and robotic machinery focusing to recycle complex composites and plastics. The university is now establishing an educational program, “Material and Technical Design” to fulfill good marketing job opportunities and to complete the mission of sustainable environment. This course will be intended to cover various areas like technology, natural science, design and diversity altogether. Their one of the major projects includes the study of bioplastics.

## **Result**

Diverse areas of environmental sustainability with the various resources have been covered by these four universities. UWP focused to provide updated educational programs, workshops, and seminars to educate students. While covering the material regarding importance and effects of sustainability in the required books for other business programs such as the book Operations Management 5<sup>th</sup> edition by Reid and Sanders for Business Management Degree describes the usage of resources for the sustainable environment at the end of each chapter.

Whereas, Mahatma Gandhi University has focused on the community projects and research on the sustainable environment. Whether it’s Jeevaka Library and ongoing research projects or developing environmental centers, the focus has been to imply the healthy results in practical life to achieve the goal of a healthy environment.

On the other hand, University of Zagreb has focused to provide a wide range of information to its students. Its take to bring international students and professors into the university will provide diverse ideas and information from around the globe. The memberships with international organizations for sustainability helps to research and educate more on the topic.

Last, Ostfalia University has emphasized to develop different laboratories to cover all possible areas of environmental concerns as research areas. Its next major step towards sustainability is the establishment of recycling institute which recycles and research on complex composites and plastics.

## **Conclusion**

The leading institutes of developed countries are offering to a wide range of educational programs, seminars, and research opportunities to achieve the goal of sustainable globalization. Many business organizations and non-profitable organizations are also playing a vital role to promote salubrious environment through their business visions and eco-friendly products. Education plays an important role to achieve goals, so it is important to spread awareness about the important role education to attain sustainability.

These four universities are contributing on various levels to attain this goal individually and collectively through International Conference on Sustainable Globalization which is held every year to teach and educate environmental science. With the accurate and efficient environmental information, we can all make our planet a better place to live and to minimize the hazardous risks to the health of all living beings.

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## Sustainable Environment in Kerala - A Clarion Call for Higher Education Institutions<sup>2</sup>

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### Abstract

Rapid urbanisation, high density of population and consumerist lifestyles in Kerala without corresponding growth of civic amenities have thrown up new environment challenges particularly in management of waste which threaten the sustainability of its health achievements. While some efforts, though not very effective, have been initiated to address issues in urban areas, these have been largely ignored in villages. This paper assesses environment issues, particularly waste generation and management in four villages in Kerala. The paper highlights the urgency for an integrated environment management strategy in rural areas, which includes breaking the silos of higher educational institutions to promote environment sustainability. Such a strategy besides environment gains, will also serve to enhance the pedagogy of teaching learning in higher education through promoting experimental learning.

**Keywords:** waste audit, waste management, waste generation, composition of waste, E.coli, Grama Panchayat

**Main Conference Topic:** Waste Management and Local Government

### Introduction

Kerala state, which is hailed for its achievements on various social indicators of development, is currently observed to be facing the undesirable consequences of its strategy of pursuing social and economic health ignoring environment health. Rapid urbanisation, high density of population and consumerist lifestyles without corresponding growth of civic amenities have thrown up new environment challenges particularly in management of waste which threaten the sustainability of its health achievements. The state is currently experiencing the paradox of co-existence of low environment hygiene with high personal hygiene and low mortality with high morbidity. In fact public hygiene is now perceived as a major issue that needs to be addressed. To quote from Human Development Report 2005, Kerala, "personal and home cleanliness notwithstanding, environmental hygiene in terms of solid and liquid waste disposal has become a serious problem, since open waste provides an ideal breeding ground for pathogens and germ carriers resulting in the emergence of diseases like Leptospirosis" (Govt. of Kerala, 2006). The outbreaks of Chikungunya in 2006 and 2007 is largely attributed to the relatively recent phenomenon of stagnant water leading to prolific breeding of mosquitoes (Govt. of Kerala 2007). The State Government itself reports that "At present, the quality of services related to solid waste collection and disposal is extremely poor... Every day, a quantity of about 1,200 tonnes waste is left to decompose on road margins, drains, canals, water bodies and open space. Such a situation provides ideal breeding ground for pathogens and germ carriers. Even more serious is the problem of ground water pollution due to leakage from disposal sites. Windblown debris and burning of waste invariably cause air pollution-----"(Govt. of Kerala, 2006). It is not surprising that the number of asthma as well as acute respiratory infection cases in Kerala is reported to be the highest in India (Govt. of Kerala, Op.cit). Thus solid and liquid waste management has turned out to be a burning issue in the state in recent years with administrative, ecological and public health dimensions (Govt. of Kerala, 2013).

### Related work

The escalating issue has prompted academic/ administrative interest on solid/ liquid waste leading to articles/ research reports/ action plans focusing on varied dimensions of the problem such as strategies/ technological options of Municipal Solid Waste (Damodaran et al 2010, Varma 2008), Kerala's initiatives in sanitation and waste management (Varma 2013), State Government's approach and strategies to solid waste (Govt. of Kerala 2015,

<sup>2</sup> The major findings of this paper are drawn from the research study 'Role of GramaPanchayats in Waste Management and Environment Protection' conducted by the authors under Decentralisation Analysis Cell as part of The World Bank aided Kerala Local Government Service Delivery Project.

2007), city specific action plans for management (Ambat 1997), environment impact assessment of MSW (NCESS 2014), role of IMAGE in medical waste management (Nair 2013, Vijayabhas 2010), role of informal sector in waste management (Ambat1994;1995) perception and attitude of the people towards scientific waste management, (Ambat1999), economic/ social consequences of solid waste disposal (Dhanalakshmi 2011, Jayasree 2008, George 2010) review of solid waste management in urban local bodies (Govt. of Kerala, Report of the CAGI on LSGIs, various years), issues of women waste workers (Rani et al 2010, Mathews and Rani 2010, Jayakrishnan and Jeeja 2010) etc.

A few reports also focused on crucial aspects of waste, which are significant pre-requisites for design and implementation of management plans, such as measurement/ estimation of quantum generated/ composition/ physical and chemical properties, source of generation, etc. (NCESS 2014, JNNRUM 2007, KSUDP 2006, SEUF 2006, Padmalal et al 2002). However almost all of these have focused on measurement/ estimation of waste in urban areas and are generally silent on the issue in rural areas. Though no comprehensive study analysing at source generation and composition of waste in villages have been conducted, Suchitwa Mission, based on available information, has estimated total solid waste generation in Kerala as 7072 tonnes/ day in 2012 of which 4964 tonnes i.e. around 70 percent is generated by 978 Panchayats (as cited in Govt. of Kerala Report of CAGI on LSGIs 2013). The present paper addresses this research gap by estimating the quantum and composition of solid waste generated in a few sample Grama Panchayats (Grama Panchayats or GPs are the Local Government at village level) and assessing the prevailing arrangements for managing waste.

## Methodology

A comprehensive approach was followed which included collection of primary data through well designed sample surveys, segregation and measurement of waste generated by selected institutions including households through waste audits, conducting lab tests of water quality, etc. The sample of Panchayats for case study was selected from the list of 62 Panchayats identified by State Finance Commission which were classified based on geographical location/ physical features, into three categories as - lowland, midland and highland. Panchayats from lowland and highland constituted the population for selection of our sample units. Units falling in each of these two categories were divided into two sub-categories- Panchayats which are in proximity/ have common boundary with urban local bodies and those which have no such proximity to urban centre and from each sub-category, one Panchayat was selected at random.

A representative sample of 732 units including 511 households, 109 commercial establishments and 112 other buildings was then selected from these four Panchayats for primary survey and conducting waste audit. The sample was selected through a multistage, stratified sampling scheme. The first stage sample units were the wards in each of the selected Panchayats and the second stage units were the households/ institutions located in the selected wards. The wards in each Panchayat were first stratified into bulk generators of waste and others based on the existence of commercial establishments, hospitals, markets, educational institutions, auditoriums, etc. The identified wards with bulk generation of waste were selected with probability one. The non-bulk generators of waste were geographically numbered from North to South and one-third of them were selected using simple random sampling without replacement.

In the second stage all the structures in the selected wards were listed and sub-stratified into the following three categories:

- a) Residential buildings;
- b) Buildings for commercial purposes;
- c) Other buildings (Public institutions/ offices, educational institutions, hospitals, etc.).

In the case of households and commercial buildings, 5 percent of the units were selected using simple random sampling without replacement. In the case of the third category- other buildings, bulk generators such as hospitals, auditoriums etc., were covered in whole wherever only a few of them were present in each ward. Case study of the first Panchayat in low land revealed that Panchayat records of buildings were often outdated leading to errors of exclusion and inclusion in sample selection wherein prevailing new buildings were excluded and non-existing/ unoccupied ones were included. Hence sample selection in the highland category Panchayats was made more robust with a prior listing process wherein all buildings in the sample wards were identified and basic details of all buildings located in it collected through a preliminary rapid assessment survey using a listing schedule. Once an exhaustive and accurate list of buildings was obtained, the above procedure was used to select sample buildings from each category.

Waste audits were carried out in these four sample Panchayats for three days (one week end and two week days). Methodology for the same was developed based on World Bank Technical Paper number 426 which deals with designing and operating solid waste landfills in low-income countries and consisted of a) collection of daily waste generated<sup>3</sup> from the representative sample of 732 units b) sorting into various waste components and weighing and c) estimation of waste generation for the entire village.

Once waste generated by the representative sample units in each Panchayat was measured, this was used to estimate the total quantity of waste generated per week from the respective Panchayats using the following method.

$$T = T_1 + T_2$$

$$T_1 = \sum \sum (M_{1j}/m_{1j}) [3 \sum y_{1ijk} + y_{1ij3}]$$

$$T_2 = (N/n) \sum \sum (M_{2j}/m_{2j}) [3 \sum y_{2ijk} + y_{2ij3}]$$

where  $T_1$  = Total of waste generated by first group of wards

and  $T_2$  = Total of waste generated by second group of wards

1 or 2 denotes the type of ward (1 = wards selected with probability one, 2 = others)

i = subscript for i<sup>th</sup> ward

j = subscript for j<sup>th</sup> type of building

k = 1, 2 or 3 denotes the day of survey and day three is the holiday

N = total number of wards in the second group

n = the number of wards selected for the survey from second group

$M_{1j}$  = the total number of j<sup>th</sup> type of institution in the first group of wards

$m_{1j}$  = the number of j<sup>th</sup> type of institution selected for the survey in the first group of wards

$M_{2j}$  = the total number of j<sup>th</sup> type of institution in the second group of wards

$m_{2j}$  = the number of j<sup>th</sup> type of institution selected for the survey in the second group of wards

$y_{gijk}$  = the amount of waste produced in k<sup>th</sup> day by the j<sup>th</sup> building of i<sup>th</sup> ward

Detailed interviews were held with elected representatives of these villages to identify the waste management functions being performed by the Local Governments. A primary survey was also conducted covering the 731 sample units to identify the method of disposal of waste currently practiced by households and institutions. Bacterial analysis of water samples from 65 water bodies located in these villages was also performed with assistance from Centre for Water Resource Development and Management, Calicut to check for pollution stress in rural ecosystems.

## Result

Results of waste audit revealed that a person on an average generates between 160 to 190 grams of solid waste per day in Kanjiramkulam, Marutharode and Nenmeni G.Ps. However per capita generation in Ezhikkara was higher at 281 grams per day (Table 1). While higher generation rates in Ezhikkara could be partly due to its very proximity to North Paravur Municipality, Kochi city and the nature of reported occupation of significant sections of population as construction workers working in Kochi city, our study also indicates that a single frame fits all scenario cannot be assumed in the case of all rural areas with the magnitude of solid waste generation varying with regional specificities.

<sup>3</sup> sanitary napkins/ diapers were not collected or segregated and instead information on the number of sanitary napkins/ diapers generated daily from each household was collected. The weight of sanitary napkin and diaper was then calculated by multiplying daily generation rate with a fixed weight of 230 grams per used diaper/ sanitary napkin (<http://www.knowaste.com/local-authorities/calculating-your-ahp-tonnages>)

Table 1: Waste Generation in Sample G.Ps(Source: Waste audit)

	Ezhikkara	Kanjiramkulam	Marutharode	Nenmeni
Population (number)	18019	21989	34627	46950
Daily Per capita Waste Generation (grams)	281.51	165.36	160.68	186.29
Weekly Per capita Waste Generation (Kg.)	1.97	1.16	1.12	1.30
Total Weekly Waste generated in the Panchayat (Tonnes)	35.51	25.45	38.95	61.22

Estimation of total waste generated in Panchayats revealed highest weekly generation of 61 tonnes in Nenemeni Panchayat followed by around 39 tonnes in Marutharode, 36 tonnes in Ezhikkara and 25 tonnes in Kanjiramkulam.

Significant presence of organic kitchen waste in total waste stream, together with high moisture content- 61 percent to 71 percent and pH value indicate that composting is the best method of management to be adopted (table 2). The higher proportion of plastic waste estimates obtained in our study, which is based on waste collected at generator's/ source point, compared to existing research, which have analysed composition based on samples collected from secondary collection points or disposal sites, suggests that the quantum of plastic waste in Kerala is currently higher than official estimates. Significant quantities of sanitary waste were also being generated in the Panchayats indicating usage of sanitary pads and diapers even in rural areas.

Table 2: Composition of Waste Generated in Sample G.Ps (Source: Waste audit \* denotes plastic bottles of Edakkal Cave- a tourist destination)

Components of waste	Sample G.Ps			
	Ezhikkara	Kanjiramkulam	Marutharode	Nenmeni
Food waste	61.88	71.14	61.20	67.63
Plastic bags	9.39	7.04	9.55	9.56
Plastic bottles	2.07	0.79	1.84	0.97   3.62*
Glass	1.33	0.18	0.91	0.96
Paper/cardboard	9.42	6.25	12.31	6.25
e-waste	0.57	0.58	0.82	0.54
Medical waste	2.38	3.47	1.38	0.18
Metal waste	0.39	0.06	0.11	1.12
Combustible waste	4.99	7.14	5.33	2.22
Sanitary napkin and diaper	7.58	3.35	6.56	6.95
Total	100	100	100	100

Despite such huge quantities of solid waste generation, the local Governments have not devised or implemented any system for collection, transportation, treatment or disposal of solid or liquid waste. The Kerala Panchayat Raj Act 1994, assigns a pivotal role to G.Ps in environment protection with preservation of traditional drinking water sources, collection and disposal of solid waste, regulation of liquid waste disposal, storm water drainage, maintenance of

environmental hygiene, management of public market and maintenance of burial grounds listed as mandatory functions to be performed by local bodies. Some additional roles such as promoting environmental awareness, afforestation, water conservation and implementation of sanitation are also specified as general/ sectoral functions. However no activity is being undertaken by any of the sample G.Ps in respect of these mandatory functions of collection and disposal of solid waste, regulation of liquid waste disposal and maintenance of environment hygiene (Tables 3 & 4).

*Table:3: Performance of Sample G.Ps in Environment Related Mandatory Functions Specified in Kerala Panchayati Raj Act, 1994 (Source: primary data from sample G.Ps \*Implemented mostly through MGNREGS)*

Sl. No.	Functions	Ezhikkara	Kanjiramkulam	Marutharode	Nenmeni
1.	Maintenance of traditional drinking water sources.	Yes*	Yes *	Yes*	Yes*
2.	Preservation of ponds and other water tanks	Yes*	Yes *	Yes*	Yes *
3.	Maintenance of waterways and canals under the control of Village Panchayats.	Yes*	Yes *	Yes *	Yes *
4.	Collection and disposal of solid waste and regulation of liquid waste disposal.	No	No	No	No
5.	Storm water drainage.	No	No	No	No
6.	Maintenance of environmental hygiene.	No	No	No	No
7.	Management of public markets.	No	Yes	No	No
8.	Establishment and maintenance of burial and burning grounds.	No	No	Yes	Yes

The main strategy being followed in the context of solid waste seems to be promotion of decentralised treatment of organic waste in individual households (with very low participation) and management of market waste through collecting and dumping in nearby areas. In the absence of a public system for waste management, a primary survey of the sample units was conducted to identify management and disposal practices being followed by them. It revealed that very few households/ institutions were in the habit of consciously segregating their solid waste and the strategy adopted for disposing of organic component was feeding domestic animals/ throwing in and outside own compound. Open air burning was the primary method of disposal being practiced for non-biodegradable components like paper, plastics, textiles and sanitary waste followed by other methods like throwing in own/ outside compound, throwing in nearby canals, backwaters and burying in soil indicating adverse consequences for ground water recharging, air quality, fertility of soil, etc.

*Table: 4: Performance of Sample G.Ps in Mandatory Waste Management Functions as Specified in Kerala Panchayati Raj Act, 1994 (Source: primary data from sample G.Ps)*

Sl.No	Functions	Ezhikkara	Kanjiramkulam	Marutharode	Nenmeni
1	Regular sweeping and cleaning of the roads	No	No	No	No
2	Daily removal of the filth and the carcasses of animals from private premise	No	No	No	No
3	Removal and burial of unclaimed dead bodies under intimation to the police	Yes*	Yes*	Yes*	Yes*

4	<b>Removal of solid wastes</b>	No	No	No	No
5	<b>Daily removal of rubbish from dustbins and private premises</b>	No	No	No	No
6	<b>Has any awareness been given on duty of owners and occupiers for collection and deposit of rubbish and solid waste?</b>	Yes*	Yes*	Yes*	Yes*
7	<b>Is there any contract with owner or occupier for removal of rubbish or filth?</b>	No	No	No	No
8	<b>Have you introduced house-to-house collection of rubbish?</b>	No	No	No	No
9	<b>Is there provision for final disposal of waste /-identified and notified suitable places for the purpose of final disposal of waste?</b>	No	No	No	No
10	<b>Is there any provision for processing of solid wastes?</b>	No	No	No	No
11	<b>Are you doing removal of rubbish and solid waste accumulated on non-residential premises?</b>	No	No	No	No
12	<b>Have you prohibited improper disposal of carcasses, rubbish and filth?</b>	No	No	No	No
13	<b>Have you prohibited keeping of filth on premises?</b>	No	No	No	No
14	<b>Have you prohibited allowing outflow of filth?</b>	No	No	No	No
15	<b>Have you prohibited deposit of rubbish or filth in public places?</b>	No	No	No	No
16	<b>Are employees of Panchayat engaged in rubbish and solid waste management service?</b>	No	No	No	No

Despite over 90 percent of the sample households owning their own houses, living in semi pucca and pucca houses, almost all units having electricity connection and more than 60 percent having LPG for cooking purpose, majority do not have proper drainage system for disposal of liquid waste from kitchen and bathrooms. Large segment of households have their liquid waste from kitchen/ bathroom flown within their compound. In Ezhikkara, disposal of liquid waste into water bodies was prevalent particularly among houses situated close to canals and back waters.

With regard to toilet facility, the study shows prevalence, though limited, of open defecation even in Nirmal G.Ps, the incidence of which was higher in places with migrant labour. Another disturbing practice was makeshift toilets directly over water bodies which was observed in households having limited land and located on the banks of canals and back waters.

As far as septage is concerned, -68 percent of the surveyed households- discharge it into septic tanks while around one fourth use pit toilets and some use ring type. Use of pit toilets was observed to be particularly high in lowland Panchayat of Kanjiramkulam (37 percent) characterised by loose red soil which pose high risk of contamination to ground water. Ring type of toilet is observed more in Ezhikkara Panchayat-the low land coastal Panchayat with porous, sandy soil with 13 percent of households in Ezhikkara using these which are another potential source of soil-water contamination particularly during monsoon season when the rings overflow.

Analysis of water quality in a sample of water bodies (both surface and ground water sources) was done to check for pollution stress in the rural ecosystems. The analysis identified bacteriological contamination as the major water quality problem. About 44.6 percent of the entire 65 water samples analysed from the sample G.Ps were found to be contaminated with E.Coli while 87.70 percent had presence of Coliform bacteria (table 5). The study thus indicates that both surface and ground water sources even in our rural areas are getting contaminated indicating pollution stress and threats to the water security of future generations.

Table 5: Bacterial Contamination in Water Bodies in Sample Panchayats (Source: Water Quality Analysis)

Grama Panchayat	Number of water bodies in sampled	Presence of Coliform Bacteria		Presence of <i>E.coli</i> bacteria	
		Number	Percentage	Number	Percentage
Ezhikkara	16	16	100.0	12	75.00
Kanjiramkulam	16	9	56.25	3	18.75
Marutharode	17	17	100.0	8	47.06
Nenmeni	16	15	93.75	6	37.50
Total	65	57	87.70	29	44.61

### Sustainable Environment in Kerala- A Clarion Call for Higher Education Institutions?

Failure of sample Grama Panchayats in discharging even mandatory waste management functions despite such environment stress indicate that local governments in Kerala are not assigning sufficient importance to the issues. Thus an integrated environment management plan in Panchayats covering all related functions entrusted under Kerala Panchayat Raj Act 1994 and specially focusing on solid / liquid waste, septage management, is the need of the hour. However there are serious reservations about the capability of local bodies to assess environment issues and design, implement effective management strategies. A major hurdle in this context is lack of visible symptoms of environment stress in rural areas as compared to that in cities and towns which do not compel either Governments or public to really strive for effective solutions.

In response to such issues identified in the study, a pilot experiment was initiated in Ezhikkara, one of the sample GPs to promote better solid waste management strategies. The project was initiated by Dept of Economics St. Teresa's College in association with elected representatives of the Panchayat and Kudumashree (The Self Help Group initiated by Government of Kerala). Results of the waste audit were shared with local public to create generic demand, awareness campaigns conducted in a pilot ward to segregate solid waste, a collection and recycling system for plastic waste was designed and put in place and waste reduction strategies popularized. The results highlight the pro active role that educational institutions can take in supporting local Governments for implementing projects for management of waste and addressing environment issues. If students of each institution can be officially linked to one local body, take up research issues there with special focus on the theme of environment sustainability, share results with the public through social media as well as public contact programs and highlight the issue, it may serve to overcome the tendency of humans to discount what they perceive to be a distant threat. Higher educational institutions can also link their social extension activities to address such issues identified through academic research. Such an academic research- social extension work- local body connect will certainly serve to enhance the pedagogy of teaching learning through a process of experiential learning. The million dollar question in this context is – will the education policy, academic faculty and student fraternity in Kerala respond to this clarion call? Can they and will they rise up to the challenge by bridging the current disconnect between academic content and local context? If the answer is positive, then that is a significant step towards environment sustainability in the state though not a sufficient one.

### Conclusions

The study highlights that environment sustainability is under threat even in rural areas of Kerala. It calls for design of an integrated Environment Management Plan covering all environment functions entrusted to G.Ps under Kerala Panchayat Raj Act 1994. Taking into account the ground reality of limited capability of local government institutions in this regard, it recommends a strategy of breaking the silos of higher educational institutions to promote environment sustainability. Such a strategy besides environment gains, will also serve to enhance the pedagogy of teaching learning in higher education through promoting experiential learning.

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## Imparting need based tourism education: challenges faced in creating employable skills

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### Abstract

*Tourism Education by its very nature is manifold and the level of courses on offer in Tourism and Hospitality sector in India differs significantly. Nevertheless, it is widely accepted that Tourism education is not simply the dissemination of information by merely sharing, interpreting contents in a linear progression in classrooms. It has many extended peripheries in terms of inculcating an effective mix of knowledge, aptitude and working skills. Various components of industry interface for students as well as for the teachers are regarded as the need of the hour. As tourism empowers community in terms of local ownership of tourism services- need based programs, sensitization, induction, awareness creation also falls within the purview of Tourism education in India. In the age of Responsible Tourism, now the focus is in synthesizing basic and advanced levels of employable skills among all the stakeholders. Considering these diverse needs of tourism, it is a clear indication to revitalize the pattern, style and overall pedagogy of the education in the days to come.*

**Keywords:** working skills, revitalization, employable skills

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

Tourism is highly regarded as the fastest growing industry of the decade globally. The Tourism sector of Indian economy is at present experiencing a huge growth. The Tourism sector of Indian economy has become one of the major industrial sectors under the Indian economy. The tourism industry earns foreign exchanges worth “21,828 crore. Previous year the growth rate of the tourism sector of Indian economy was recorded as 17.3%. The growth in the tourism industry is due to the rise in the arrival of more and more foreign tourists and the increase in the number of domestic tourists. Indian Tourism is a mix of different cultures, traditions, festivals, and places of interest. There are a lot of options for the tourists. India is a country with rich cultural and traditional diversity and is also evident in tourism. The different parts of the country offer wide variety of interesting places to visit. Considering these, the need of a diverse professional pool to serve the Indian tourism is regarded as the need of the hour.

The good quality education must have a holistic approach which intends to sensitize the soft and hard skills of the students. Overall grooming of the students in all means which makes them employable at respective sectors for which building the knowledge base has to be the ultimate aim of education. Tourism, a more demanding industry in terms of rendered services and quality experiences offered to tourists, to a greater extent have to equip its professionals to meet the diverse demands of the industry.

### Tourism as a skill driven sector

Education prepares a man for social service, to develop his character and finally moulds to be a competent social being. Swami Vivekananda spoke emphatically for practical and experimental education. He warned his countrymen saying “you will have to be practical in all spheres of work. The whole country has been ruined by mass theories.”

Traditional Education since ages had relied more on classroom centric teaching. Irrespective of the subjects taught in the class, the understanding of the students will always be limited within the framework of the class. The novelty, techniques that each teacher applies will differ, but it is always learned that the revelations of the class room lecturers has its own limitations. The conceptual clarity, imagination of the students on the aspects of scientific learning, precision on social issues can be broadened only if the education goes for a sea change. It is also learned that the productivity and quality of educated people will always be determined by their knowledge, skills and personality. Advocating for an education system which merely ensures a high percentage of pass outs does not guaranty any standard to the students who have gone through and mended in such system.

Unlike the other fields of education, tourism education demands for a comprehensive framework with equal emphasis on imparting knowledge, skills & service aptitude. As the tourism industry competes globally, setting of

world class facilities is important both in terms of infrastructure & manpower. The education in tourism in India has directed to achieve the following benchmarks

- ❖ Being a demand driven and skill oriented industry, the tourism education should end up in inculcating and developing the necessary knowledge and working skills required by the industry.
- ❖ Ultimately, the tourism education system should end up in creating employable skills among the students

Thus the education in Tourism is been channelized to cater the needs of Tourism sector by molding a pool of professionals talented in different service corners namely tour operations, travel agency business, online tourism business, corporate guest handling, tour guiding, hospitality & medical tourism.

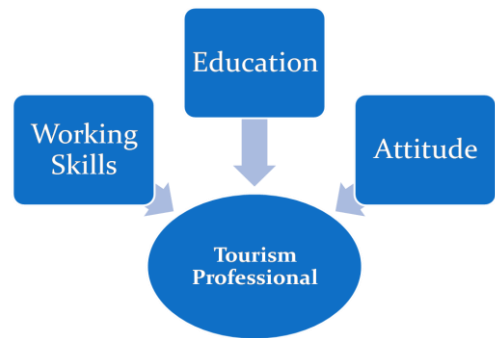


Figure 1: Tourism education framework

### Objectives

- ❖ To reveal the status of Tourism education in India
- ❖ To analyse various capacity building schemes of state and central government in creating employable skills in tourism sector.
- ❖ To analyse selected cases to identify factors which determine the quality of tourism education

### Methodology

The study unearths the reach and impact of education in the demanding industry of tourism and hospitality sector. Case based analysis method was initiated at various corners of tourism education to reveal the current status of education. Structured interview and field observation method were employed to collect primary data. Secondary data involves data published by India Tourism, newspaper article, information provided in the websites etc.

### Tourism Education in India

Considering the parameters set for tourism education in India, the bachelor and higher courses offered in India at national level is been conducted anticipating certain specified outcomes. It has a blend of class room oriented & field

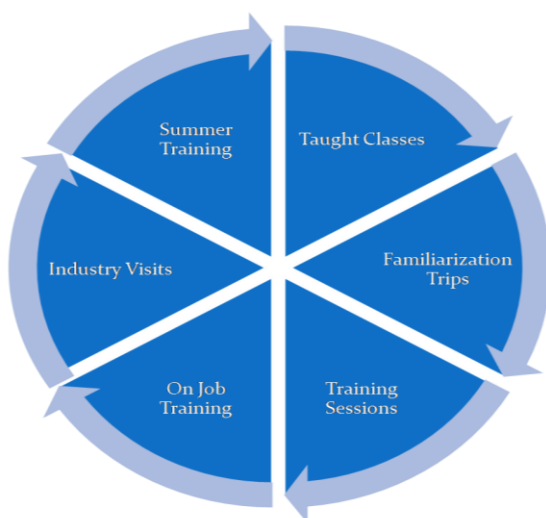


Figure 2: higher level Tourism education components

exposure components which intends to equip the tourism students in gaining knowledge and in converting those to working skills. These courses also give students ample opportunities to go for industry visits, familiarization trips, training sessions, summer training & on job training facilities. Such pedagogy in tourism always equips students with necessary knowledge, practical exposure resulting in the shaping of employable skills in Tourism.

National institutes in Tourism, namely Indian Institute of Tourism & Travel Management (IITTM), Institute of Hotel Management (IHM) affiliated to National Council of Hotel Management & Catering Technology (NCHMCT) under the aegis of Ministry of Tourism is working in this dimension. IITTM is focusing on the

travel & tourism sector in Tourism where as IHM's focuses on hotel sector in Tourism. Such courses help

students to specialize in different focus areas in Tourism & Hospitality namely Tour operations, Tourism Marketing, Airport Management & Cargo Management, Front Office Management, Restaurant & bakery Management and housekeeping.

The training component helps students in getting trained in Tour operation and computer reservation system. However, training in other fields is necessary for the overall development of the students. Though the number of days provided are insufficient to nurture the skills of the students, there are ample opportunities to become acquainted with the latest reservation systems such as Galelio, Amadeus etc. The students will get chances to interact with wide range tourists. The preferences and choices regarding their travel trends itself is great learning in analysing the travel trends. Familiarization trips give opportunity to students to plan and prepare itineraries, the expense management of the tour etc in addition to become familiar with the tourism products. It provides a lot of chances to experience the cultural diversities, geographical differences, the topography etc. It helps to understand how communication skill is effective in travel and tourism industry.

### **Capacity Based Skill development (CBSP) level programs of Ministry of Tourism, Govt of India**

Tourism workforce is not merely the qualified graduates coming out of the national institutes, training institutes, universities or colleges. The major chunk of the work force is unorganized ranging from taxi drivers to the street vendors. Making this sector organized and professional is the biggest challenge in the professionalization of Tourism sector in India. The CBSP programs have been designed in this line of thinking.

### **Scheme of Capacity Building for Service Providers (Institutes)**

A large segment of people are involved directly and indirectly in the tourism industry. Professional expertise is required for specialized vocations in this field. At present there are Food Craft Institutes (FCIs) and Institute of Hotel Management (IHMs) where technical training is being provided to persons for the Hospitality Industry. Tourism training is being provided by the Indian Institute of Tourism and Travel Management, and through various chapters institutions/colleges/university departs of repute in tourism education at different places in the country to educated employed youth for taking up a profession in the Travel and Tourism Industry. The tourism service providers are both in the approved/ organized and also the unorganized sector. The IHMs and FCIs cater mainly to organized sector i.e. Hotels and Restaurants. At the same time, there are a large number of persons who are engaged in the unorganized sector such as small hotels, road side eating places, ticketing/ travel agencies, surface transport dhabas etc.

There is a segment of tourism service providers who are engaged in other professions but come in contact with the tourist. These persons, such as staff at bus/ railway stations, police personnel, immigration staff at airports, coolies, taxi/ coach drivers, staff at monuments, guides etc.

The tourists come in contact with various service providers and it is this experience they have while interacting with the cutting edge governs their experience of India as a tourist destination. It was therefore felt necessary that these large numbers of service providers are given certain inputs which can improve their behavior and service levels. Therefore, a Scheme was formulated wherein these service providers in the unorganized sector are given some inputs so as to upgrade their behavior and service skills. Some of the important areas being covered under the training include Health & Personal Hygiene, Cleanliness, Basic Service techniques, Cooking Techniques, Garbage Disposal, Etiquette and basic manners, basic nutrition values. Energy saving and basic tourism awareness, Communication skills, Behaviour Skills, First Aid, Client Handling & Behavior Skills etc. are also covered in the training programmes. The duration of the course ranges from 4 days to 6 days.

### **Central Financial Assistance to Institutes**

The Ministry of Tourism extends financial assistance for the setting up and up-gradation of Institutes of Hotel Management & Catering Technology & Applied Nutrition (IHMs), Food Craft Institutes (FCIs) in the country. The Indian Institute of Tourism & Travel Management (IITTM) and National Council of Hotel Management & Catering Technology (NCHMCT) are also eligible for this assistance. The purpose underlying these efforts is to create institutional infrastructure that could foster and facilitate professional education and training specific to tourism, travel and hospitality industry. The institutional infrastructure, however, not only needs to be expanded constantly in order to meet the ever increasing demand of skilled personnel/ professionals, but also needs to be strengthened and upgraded so that it retains/acquires internationally acceptable benchmark of quality. It is in the backdrop of this that

the existing guidelines for regulating outflow of assistance have been reviewed, primarily with a view to eliminating the felt inadequacies in the scheme of things and to meet the new emerging realities, and it has been decided to adopt the following revised guidelines.

### **Hunar Se Rozgar Tak (HSRT) scheme**

The HSRT scheme of the Union Ministry of Tourism in the initiative to promote skill development in various trades associated with the hospitality industry is implemented across all states in India. The HSRT offers courses in food production, food and beverage service and housekeeping which aims at creating employable skills in Tourism by empowering the educated & economically weak youth.

### **Marketing Development Assistance Scheme for promotion of Medical/Wellness Tourism**

The Marketing Development Assistance Scheme (MDA) for Medical Tourism administered by the Ministry of Tourism, GOI. The revised guidelines are as under:

Financial support under the MDA Scheme will be provided to approved medical tourism service providers, i.e. Representatives of Hospitals accredited by Joint Commission for International Accredited Hospitals (JCI) and National Accreditation Board of Hospitals (NABH) and Medical Tourism facilitators (Travel Agents/Tour Operators approved by Ministry of Tourism, Government of India and engaged in Medical Tourism hereinafter referred as MTSP and to the approved Wellness Centers hereinafter referred as WTSP i.e representative of the Wellness Centers accredited by the State Governments, till the guidelines of AYUSH - NABH for accreditation are finalized.

### **National Urban Livelihoods Mission (NULM)**

NULM is initiated under the aegis of Ministry of Housing and Urban Poverty Alleviation, Govt. Of India which aims to reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities. In Tourism various job areas have been identified ranging from hospitality, Travel and trade and travel consultancy services and are offered under schemes such as self employment program (SEP), social mobilization and Institution development (SM&ID) and Employment through skills, training & placement (EST&P).

### **State Government initiatives for creating employable skills in Tourism**

#### **Additional Skill Acquisition Program (ASAP)**

ASAP has been introduced in the state to transform Kerala as the human resource hub of the region. It aims to inculcate industry specific skills to the needy students in the selected college along with their regular studies through courses with the support of Industry partners. The students will get an opportunity to learn industry specific skills of their choice. Communicative English and basic IT modules are indispensable components of ASAP programs. It is very beneficial to students, especially tourism students as it improves the employable skills of the students. The courses are designed with 55 per-cent practical sessions. Internships are also arranged to gain hands on experience.

#### **Kerala Academy of Skills Excellence (KASE)**

This is a company owned by the Govt. of Kerala. It aims at mass human resource development through specialized skill development courses all over the state. Public and private industries in different areas including construction, retail, Information Technology, IT enabled services, finance, tourism, hospitality etc are partners of this program. Training is imparted to students in technical skill and soft skill areas under the guidance of industrialists of international standards. The company attempts to provide theoretical as well as practical training of skills required for workers from supervisory level to working class. Travel and tourism students along with other students can make use of these opportunity.

### Selected cases to identify factors which determine the quality of tourism education

To unveil the current status, selected cases of Teacher to student ratio, Placements & Job prospects of Tourism and Hospitality course, Student perception about Tourism & Hospitality, views on Industrial training and finally Perception and Reasons among students about choosing a course in Tourism and Hospitality have been analysed.

#### Case 1: Teacher to student Ratio

Teacher to student ratio is a key indicator in imparting quality education. It refers to the number of teachers in the institute with respect to the number of students. It also has relation with number of students in a particular class at a given time. It was observed during the evaluation study that the average teacher to student ratio in the institutes is 1:39 (Figure 1, below), which is quite high as compared to the recommendations by AICTE for imparting quality education. AICTE recommends an average teacher to student ratio of 1:15. This results in lower teacher attention per student and stressful learning environment in many of the tourism and hospitality institutes.

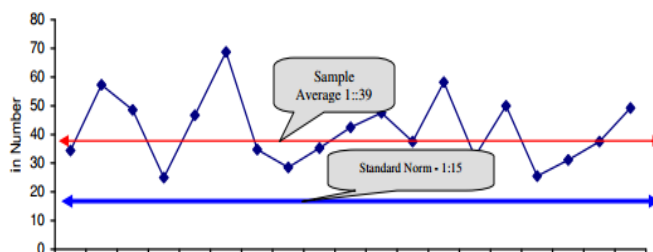


Figure 3: Teacher student ratio in various tourism institutes

#### Case 2: Placements and Job prospects of Tourism & Hospitality courses

As per the data provided by the placement officers of the visited tourism institutes, many students prefer to join other industries as the salary is high and working hours are fixed. The trend has been increasing over the years. According to the students there is no fixed working hours especially in the hotel industries. As a result, students prefer to join other industries like call centres, retail shops, hospitals, etc. It can be inferred that the migration of tourism students to other industries has considerably increased. Analysis of the data collected from the Placement Officers in various institutes visited revealed that while in the year 2007-08, 30% of the students joined other industries/went abroad for jobs, the share has gone up to 41% by 2012-13. According to the placement officers of the various institutes, during the year 2010-11, the share of students joining other industries had fallen, mainly because a significant number of students had joined in tour operations and online travel companies which are another potential operational area of the industry. Any how the relative share of students joining the tourism & hotel industry has subsequently fallen.

#### Case 3: Student's perception about the Tourism and Hospitality Industry

During the interactions with the students in the visited institutes, 44% (surveyed students) opined that they had plans of joining in the tourism industry. 33% of the students said that they would prefer to go abroad for other jobs/earn more money. Majority of the students felt that the salary structure in the tourism and hotel industry is not good, the working hours are too stressful and the job is very demanding.

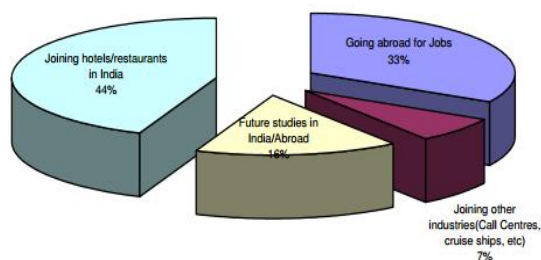


Figure 5: Student's perception about tourism and hotel industry

#### Case 4: Views on Industrial Training

Industrial Training is a very important component in any technical education. The

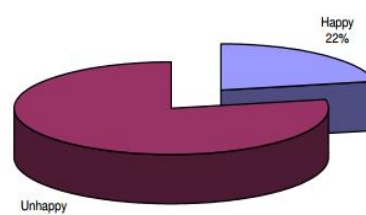


Figure 4: Students View on Industrial Training

theory classes provide basic input like tour operations, sales, marketing, services, industry linkages, destination development, community participation and consultation, imaging and branding of tourism services, **menu planning, housekeeping, etc. but when** a student joins the industry, they have to adapt themselves to the system of the organization. Here, the industrial training becomes imperative. However, it is opined by the students that the industrial training was only a routine activity. During the interaction with students it was reported that majority (78%) of them were unhappy with the quality of industrial training. There were grievances like the students were being used as casual workers during the training, organised training sessions with modules are not conducted, students are not allowed to interact with guests and their queries are not responded. Making the students understand the value of being part of Hotel Industry and providing them an opportunity to learn while working rather than making them work alone can have far reaching impact on the students. The figure 5 shows the views of students on industrial training.

### Case 5: Perception and Reasons among students about choosing a course in Tourism and Hospitality

Out of 132 students who were contacted in different tourism and hospitality institutes, it was found that majority (56%) of students do a proper research about the scope of the course and career options before joining the institute. In 33% of the cases, the students join the course as their friends/family members are in the same profession. However, in very few cases (11%), it was found that the students do not do any assessment of the course before joining it. They are often demotivated after failing to clear other mainstream national competitive exams like Engineering/Medical, etc and join the course as the last resort. According to the interactions held with principals and faculties, these students often drop out from courses after one year or so. They usually join some other course as most of them fail to understand the industry.

### Conclusion

In these days most of the students in the tourism sector fails to meet the industry requirements and fall short to transform them in a dynamic work environment. The education system which has been instituted in many of the tourism institutes also does not facilitate a conducive environment for enhancing the understanding of tourism and hospitality students.

On the other hand, equal focus should be given to strengthen the work forces that are part of Tourism in the unorganized sectors. Emphasis should be on to equally sensitize professionals, community stake holders, industry stakeholders in tandem to each other.

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## SWOT Analysis of Tourism Higher Education in Kerala

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### Abstract

*Tourism education had its beginnings in vocational schools. Recent years have witnessed the growth and development of tourism education in both under graduate and graduate level. This development results from the rapid growth and demand of the tourism sector. Tourism industry needs tourism professionals who are well up-to-date in their education. Tourism education must be aimed at developing a healthy attitude among the students towards work and life and to enhance individual employability and reduce the mismatch between the demand and supply of skilled manpower in tourism industry. Thus Tourism education is important to improve employee's abilities and promote the tourism industry's capabilities. The main objective of this study is to identify the Strengths, Weaknesses, Opportunities and Threats of tourism education in Kerala and to identify factors to enhance the skill of tourism professionals. This study tries to recognize whether the tourism course offered by the VHSE or colleges in Kerala is a right step towards making students professionals in the form of skill development.*

**Keywords:** tourism, higher education, SWOT, Kerala

**Main conference topic:** Education and Challenges of Teaching Professionals

### Introduction

According to WTTC(2017), Travel and Tourism is growing faster than any other sector. The direct contribution of Travel & Tourism to GDP was USD2,306.0bn (3.1% of total GDP) in 2016, and is forecast to rise by 3.8% in 2017, and to rise by 4.0% pa, from 2017-2027, to USD3,537.1bn (3.5% of total GDP) in 2027. In 2016 Travel & Tourism directly supported 108,741,000 jobs (3.6% of total employment). This is expected to rise by 2.1% in 2017 and rise by 2.2% pa to 138,086,000 jobs (4.0% of total employment) in 2017. Travel & Tourism's direct contribution to GDP is expected to grow at an average of 3.9% per year over the next ten years. By 2027, Travel & Tourism is expected to support more than 380 million jobs globally, which equates to 1 in 9 of all jobs in the world and the sector is expected to contribute around 23% of total global net job creation over the next decade. Meanwhile, total Travel & Tourism GDP is expected to account for 11.4% of global GDP and global visitor exports are expected to account for 7.1% of total global exports. India is expected to establish itself as the fourth largest Travel & Tourism economy by 2027, both in terms of direct and total GDP, only behind China, the USA and Germany.

Tourism education can be described as one of the main sub sectors of the multifaceted tourism phenomenon and one whose manifestation could impact on the whole of the tourism sector, directly or indirectly. World Tourism Organisation has singled out Tourism Higher Education has immense potential to achieve customer satisfaction and improve the competitiveness amongst tourism businesses and regions if specific education and training are guaranteed (Fayos Solà 1997). Tourism education had its beginnings in technical or vocational schools (Airey, 2004; Lo, 2005; Inui, Wheeler, & Lankford, 2006, Wattanacharoensil, 2014). Recent years have witnessed the growth and development of tourism education in both under graduate and graduate level. This development results from the rapid growth and demand of the tourism sector. Tourism industry needs tourism professionals who are well up-to-date in their education. Tourism education must be aimed at developing a healthy attitude among the students towards work and life and to enhance individual employability and reduce the mismatch between the demand and supply of skilled manpower in tourism industry. Thus Tourism education is important to improve employee's abilities and promote the tourism industry's capabilities.

### Review of Literature

#### Overview of Indian tourism education system

Tourism education is a very new subject in Indian education system. There is need of the all education under one roof. There should be system of specialization in the tourism courses. And there is need of the uniformity of the syllabus, although UGC has developed a syllabus but it should be completely followed in all the tourism institutes. Tourism is an upcoming field in India it needs a lot of studies so that we can develop a sound curriculum for the

development of quality trained manpower for tourism. Tourism and Hospitality education was initiated by Govt. of India in 1962 by establishing four institutes of Hotel Management Catering Technology and Applied Nutrition at New Delhi, Mumbai, Chennai and Kolkata respectively (Bensal, S.P. et.al, 2006). Then, National Council for Hotel Management and Catering Technology (NCHMCT) was established in 1982 as an autonomous body for coordinated growth and development of hospitality education and subsequently transferred to the Ministry of Tourism, government of India in the year 1984. Presently there are of 21 Central IHMS, 21 State IHMS and 15 private IHMS and 7 Food Craft institutes following National council's curriculum (nchm.gov.in). Indian Institute of Tourism and Travel Management is one of the premier institutes offering education, training, research and consultancy in sustainable management of tourism, travel and other allied sectors which was established in 1983 by Ministry of Tourism. This multi-campus Institute offers various programmes in tourism and related fields as well as Regional Level Guide Training Programme. Amongst the universities Masters Degree in Tourism was firstly initiated in 1990s by Kurukshetra University afterward by HP University Shimla, HNB Garhwal University, Bundelkhand University Jhansi, and Jammu University. The success trend motivated other Indian Universities to run tourism courses at different levels. Amity Institute of Travel & Tourism (AITT) is a unique education institute established to provide the best Travel & Tourism Management education (Pani. A. et.al 2015).

The directory of 'Education and Training Institutes of Tourism and travel in India' released by IITTM in may 2004 lists about forty institutes which are imparting education and training programmes in tourism. Presently, tourism education is imparted in number of government and privately managed institutes (Boora S.S, et.al). As many as 40 universities have introduced travel management courses at the certificate, PG Diploma, Bachelor Degree and Master's Degree level. Many universities have permitted their affiliated colleges also to offer it as one of the subjects in the first degree programmes. The subject is also offered as a vocational subject in many colleges. Distance learning courses in tourism and travel management at certificate, first degree, postgraduate diploma and postgraduate degree levels have been introduced by Indira Gandhi National Open University (IGNOU), Karnataka state Open University, Kota Open University, UP Rajarshi Tandon Open University and schools of distance education attached to several universities (Geetanjali, 2010)

## **Tourism Higher Education in Kerala**

### **VHSE In Kerala**

Travel and Tourism course in Vocational Higher Secondary School (VHSE) is a blessing to Kerala-God's Own Country to provide manpower to the Tourism sector. The course encourages students to develop practical and technical skills relevant to the industry, enabling them to deal with a range of complex situations and problems with confidence. The course is also designed to help to meet the need for skilled and knowledgeable individuals with right attitudes and aptitudes in the rapidly diversifying industry. In Kerala, presently there are 389 vocational higher secondary schools. Out of this, 27 VHSEs are offering travel and tourism course including 10 schools are under government and remaining 17 schools are aided. Every year 675 students opt for Travel and Tourism course at VHSE ([www.scert.kerala.gov.in](http://www.scert.kerala.gov.in)) The travel and tourism course enables candidate to develop a broad understanding of travel and tourism principles. In addition, the course covers a mixture of teaching and learning experiences from the theoretical through to those with a clear practical emphasis. This course consists of four modules. In this course, after the completion of each module the students attain skill in various areas of Travel & Tourism industry and it also equip a learner to perform different types of skills required in today's world of Travel and Tourism. On the successful completion of each Module the State Education Board will provide a certificate to the student verifying the competencies acquired by the candidate.

- Module 1- Certificate in Tour Coordination
- Module 2- Certificate in Travel Assistance
- Module 3- Certificate in Tour Escort
- Module 4- Certificate in Online Travel Services And Computer Application

Apart from the above certificates the student is eligible for a trade certificate and a certificate sating eligible for higher studies. After the completion of the on the job training a certificate will be issued by the implant supervisor/manager which is useful for the student to choose a career.

### University courses in Kerala

In Kerala, Secondary education board, many colleges, universities and institutions have introduced and has been imparting tourism education to our youths. School of Tourism Studies of Mahatma Gandhi University, a regular statutory department was established in the year 2010 and is envisaged as Centre of higher learning in the areas of Tourism and Hospitality. The department offers Master of Tourism Management with specialization in Aviation Management, Tour Operations and Health Tourism. From the academic year 2015-16 the School is functioning as a research center with intake to PhD Programme. The school offers PhD in the key areas of Tourism Impacts / Sustainable Tourism, Tourism Product Development, Tourism Industry Sectoral Studies, Destination Management.

Kerala Institute of Tourism and Travel Studies, imparts quality education and training in the field of Travel and Tourism. KITTS is currently an Affiliated Member of United Nations World Tourism Organisation (UNWTO) and Vice President, Affiliated Member of the UNWTO in Asia Pacific Region. The Institute, established in the year of 1988, caters to the manpower requirements of tourism industry by offering various courses directly benefiting the industry. The MBA in Travel and Tourism and BBA in Tourism Management course of the institute are affiliated to University of Kerala. In addition to this, the institute offers short term industry demand driven courses and undertakes extension activities like training, capacity building programmes, and research and consultancy on various aspects of tourism development. Besides its headquarters at Thiruvananthapuram, it has study centres at Ernakulam, Malayattor and Thalasserry. The Institute of Hotel Management And Catering Technology, Kovalam, Thiruvananthapuram was set up by the Ministry of Tourism, Government of India in 1990 as part of a country wide net work of existing 21 Central Institutes of Hotel Management affiliated to the National Council For Hotel Management And Catering Technology, Noida. The IHMCT, Thiruvananthapuram is rated as one of the best Institutes of Hotel Management in the country

Out of five colleges under Kannur University Govinda Pai Memorial Government College is the only government college providing tourism graduation. Kannur University also started PhD in tourism from 2016. Pazhassi Raja College is one of the oldest and premier institute which provide under graduate and post graduate in tourism under Calicut University. Here, the department of Travel and Tourism Management was established in the year 1995. There are colleges under Calicut university and Kerala university which offers tourism degrees to students to give an in-depth understanding into various aspects of travel and tourism. Institute of Management in Kerala, Kerala university is also offer a full time MBA in travel and tourism. Cochin University of Science and Technology offers a self financed full time MBA in travel and Tourism under School of Management Studies.

### Tourism Education and its Trends

According to WTTC (2017), Travel & Tourism is a key sector for economic development and job creation throughout the world. In 2016, Travel & Tourism directly contributed US\$2.3 trillion and 109 million jobs worldwide and indirectly it contributed US\$7.6 trillion to the global economy and 292 million jobs. This is expected to rise by 1.9% in 2017 to 297,896,000 jobs and rise by 2.5% pa to 381,700,000 jobs in 2027 (11.1% of total). According to the study conducted by Ministry of Tourism as given below.

*Table1 Expected Total Employees in March 2022*

Function Domain	Travel Agency	Tour Operator	Adventure Tour Operator	Tourist Transport Operator
Administration/ Operations	6962	5187	441	5488
Ticketing	10872	9970	---	8122
Foreign Exchange	1491	3161	---	219
Tours	9635	13779	441	7024
Sales&Marketing	3526	4782	295	1317
Accounts	4854	3890	147	12951

<b>Facilitation</b>	1781	1378	---	1317
<b>Total</b>	39122	42149	1325	36437

Source: <http://tourism.gov.in/sites/default/files/Other/MPS%20Final%20Report%20Jan%202012.pdf>

According to the study conducted by Ministry of Tourism, the details of the calculation for obtaining the demand – supply gap, as per the normal trend, are given in Table 2.

Table 2: Requirement Supply Gap in Tourism Sector

Segment	2011- 2012 (In Lakhs)	2016-2017	2021-22
<b>Total Employment</b>	42.44	54.69	76.06
<b>Total Annual Demand</b>	5.65	7.10	9.56
<b>Supply from Govt Institutes</b>	0.34	0.62	0.78
<b>Supply from private institutes</b>	0.38	0.42	0.50
<b>Total Supply</b>	0.72	1.04	1.28
<b>Demand – Supply Gap</b>	5.13	6.35	8.64

Source : <http://tourism.gov.in/sites/default/files/Other/MPS%20Final%20Report%20Jan%202012.pdf>

From Table 2, it is clear that the demand for skilled manpower is very high and supply is very low. Here we can understand that The Travel & Tourism industry is facing a crisis due to the lack of qualified and trained professionals and the country's economic growth depends on this industry. It is recognized that the tourism industry is developing at a fast rate. Besides quantitatively, the quality human resources is equally important to deliver quality services, which requires professionalism and specialization in the different sub- sectors, that is accommodation, transportation, entertainment, destination development, etc. (Chauhan.V, 2006). Therefore effective tourism education is required for gaining accurate, timely and update information about the tourism industry and the latest trends in the industry. . Tourism education encourages students to understand the importance of the travel and tourism industry in the world and recognise the positive and negative impacts of the industry may have on environment, people and economies. The main purpose of the tourism education and curriculum is to equip students with knowledge and skill to meet industry needs.

Various researchers have pointed out the significance of qualitative tourism education. According to E.M.Go (1994), an effective tourism education meets the four criteria

1. It occurs on a systematic basis including educational objectives, curriculum development, teaching techniques and assessment,
2. It is concerned with developing the skill, knowledge, changing outlooks and attributes of the student,
3. It contributes to the improvement of performance in tourism sector practice,
4. It provides a bridge between theory and practice according to applied nature of tourism.

Jenkins (1980) highlights that the significance of higher education lays in three broad areas of instruction under university level tourism education:

- The development and preservation of analytical framework for interpreting international tourism a consideration of models of tourism at the national level,

- Teaching of appropriate methodologies
- Tourism evaluation techniques

### **SWOT analysis**

SWOT is a common but important jargon in contemporary management. It means an analysis of strength, weakness opportunities and threats of an organization, a system or a process. According to Pearce and Richard (1988) "SWOT is the acronym for the inherent strengths and weakness of a programme and environmental opportunities and threats facing that programme. It is based on logic that an effective strategy maximises programmes strength and opportunities but at the same time minimises its weakness and threats". In this context SWOT is applicable to the ascertaining of the strength, weakness, opportunities and threats in the tourism courses/education.

### **Strengths of tourism education in Kerala**

1. The course helps to gain knowledge regarding various tourism resources and realises the potential of tourism as a career;
2. Tourism course is a powerful tool to cultivate moral, cultural and spiritual values in an individual;
3. On-the-job training focuses on the acquisition of skills within the work environment
4. The Post Graduation (PG) students get on the job training facilities in any of tourism organisations, hotels, Airlines;
5. Extremely dedicated and working teachers;
6. Permanent faculty members and independent building;
7. Tourism course has practical and vocational value;
8. Facility to learn various tourism related courses such as ticketing, hotel reservation, management from +2 to PG;
9. Increasing trend towards enrolment of students in Travel education in ASAP (Additional Skill Acquisition Programme);
10. Innovative teaching learning method such as EDOMO as introduced by MG University;
11. Two state universities offering PhD programme in Tourism;
12. High degree of industry sub category specialization among the departments like; accommodation, travel agency management, F&B, Tourism Policy etc.;
13. Almost all tourism academicians have industry experience as well;
14. High percentage of employability within the industry for fresh graduates;
15. Ability to open up related graduate programs;
16. Education develops practical and technical as per industry standards;
17. The curriculum is designed to satisfy the industry requirements;
18. Tourism education concentrated in backward region thus increasing their employment opportunities;
19. Projects and assignments are given to students as per current industry trends;
20. The tourism degree provides a sound academic education;
21. Tourism degree develops professionalism and professional attitudes;
22. The course emphasises on quality and excellence and allows the application of skills/theory.

### **Weakness of Tourism Education in Kerala**

1. Lack of required professional in education and poorly staffed and inexperienced staff;
2. There is a lack of trained teachers and researchers in the field of existing tourism education in Kerala;

3. There is a complete lack of teaching materials, books, journals and other equipments in the field of tourism education in Kerala;
4. No modern teaching aids available as yet for students;
5. There is absence of the process of technical up gradation of the existing tourism training institutes and university departments;
6. Lack of Lab facilities, application facilities;
7. Lower ratio in graduates for further academic studies;
8. Management based lectures in the curriculum are less in number;
9. There exists a lack of understanding and interaction between tourism faculty members, students on the one hand and the industry people on the other;
10. State government largely restricts tourism education till higher secondary and neglects provision for further studies;
11. There is a severe lack of quality institutions in Northern part of Kerala;
12. There is a large gap in expectation amongst the tourism educators and industry;
13. Students with no other option prefer this course;
14. Tourism education attracts minimal number of students due to lack of awareness regarding job opportunity;
15. In most of the institution, teachers are not permanent;
16. Most of the government post prefers any IATA/UFTAA or diploma only;
17. Majority of Universities in Kerala tend to ignore full-fledged tourism department;
18. The interdisciplinary nature of tourism attracts other academic disciplines like commerce, economics, sociology etc, thus reducing the job opportunities for tourism professionals in academic level;
19. Limited number of (not enough) subject specialized instructors;
20. Lack of involvement of educators in industry;
21. As majority students come from backward region, there is a lack in English communication skill;
22. Positive attitude or clear future perception about tourism is lacking amongst teachers and students.

### **Opportunities of Tourism Education in Kerala**

1. High employability in tourism sector;
2. More opportunity for further academic studies; graduates are more likely to apply for masters degrees etc.;
3. Increase in the number of international partners enhances job opportunity;
4. Growing relations with tourism industry;
5. Increase in the popularity of tourism programs accreditation;
6. High probability for access to richer and more resources in the future;
7. The demand for skilled manpower is very high and supply is very low;
8. Introduction of tourism education programs with different faculties increases the scope of the course;
9. High opportunity to interlink tourism education with industry;
10. There is a high opportunity in tourism related research work on tourism education;
11. Tourism courses are developed to supply industry with tourism graduates in near future;
12. An estimated requirement of trained manpower in accommodation sector would be 28000 and travel and tourism would be 20000-26000 per year;
13. By developing educational programs that suits industry standards would help in the availability of highly skilled graduates in the future;

14. Co-opting industry professionals while designing and developing the curriculum will give the opportunity to develop skilled manpower;
15. There is an immense opportunity for starters in tourism which could be incorporated in the curriculum.

### **Threats of Tourism Education in Kerala**

1. Semi skilled and unskilled manpower in tourism;
2. There is a lack of awareness about the tourism course and the scope of tourism as a career;
3. Misleading the students in the name of tourism courses that are creating a harm in tourism education;
4. Most of the tourism courses curriculums are outdated and not suited to the present information technology era and industry requirements;
5. Lack of trained manpower in travel agency and tour operation;
6. Most of the students are not confident to take up a job related to tourism after the successful completion of the course;
7. Female students are not interested to work in tourism field after the successful completion of their course;
8. Impact of seasonality on employment in Kerala is another threat of tourism education;
9. Large under qualified and unskilled graduates;
10. Some travel agents do not give full or correct information to tourists. They fail to satisfy tourists about reservation of tickets, train and plane timings and other travel facilities;
11. Increase in the number of tourism departments within Management faculties, Business Faculties and commerce Faculties;
12. Competition is increasing in private institutions;
13. Graduate preferring to apply for masters in other fields (like MBA, etc.);
14. Most of hotels and travel agencies preferred under skilled or semi skilled employees in order to reduce their salary;
15. Use of unauthorized guides to facilitate customers is a huge threat;
16. Industry's role in education is poorly defined;
17. Less channels of communication between industry and tourism education is a threat;
18. Tourism industry suffering from intrinsic problems including low productivity, insufficient management skills and uncompetitive wages and salary levels.

### **Conclusion**

Tourism education is important to mould competent professionals in the dynamic field of tourism industry and consequently to promote the tourism industry's capabilities. The study identifies the strengths, weaknesses, opportunities and threats of tourism courses in Kerala. Tourism education has huge strength and opportunity which offer increasing scope of self employment. Trained professionals can start their own business as tourism and travel consultant, travel journalist, language interpreter, online travel agents etc. Tourism education needs to run vocational courses in the regions having tourism prospective, so that it can help to reduce skill shortage and support local youth. The study found that The tourism courses offered by the VHSE /college in Kerala is a right step in making students understand about the rich cultural heritage of our country and to mould them as professionals in the field of travel and tourism. Nowadays it is not sufficient for a tourism graduate to have knowledge of an academic subject; increasingly it is necessary for students to gain those skills which will enhance their prospects of employment. Tourism is a forthcoming field in Kerala it needs a lot of studies so that we can develop a sound curriculum for the development of quality skilled manpower.

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## University of Wisconsin Educating Future Sustainability Leaders

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### Abstract

*The University of Wisconsin Master of Science in Sustainable Management (MS SMGT) is a collaborative online degree offered jointly by UW-Green Bay, UW-Oshkosh, UW-Parkside, UW-Stout, and UW-Superior with support from UW-Extension. The program employs the expertise of faculty from each partner campus to ensure a rich sustainability educational experience for the graduate students. The degree is designed to ensure that students gain a comprehensive understanding of how human activities affect the inseparable natural, social, and economic environments.*

*The online MS SMGT degree is a 34-credit program consisting of the following: Core Curriculum of eight courses (24 credits); Specialty Electives of two courses (6 credits); Capstone Preparation course (1-credit; project proposal); and a Capstone Project course (3 credits). Tapping sustainability experts from five University of Wisconsin campuses helps maintain program quality in a time of shrinking system resources. Online access allows students with professional careers to enhance their education and provides for a global community in the virtual classroom.*

*The online MS SMGT program began offering courses in January (Spring) 2013 with initial enrollment of 32 students. Student enrollment for Spring 2017 of 142 students indicates that the demand for sustainability education remains strong. Select MS SMGT graduates have pursued a United Nations career, gained company promotion to Sustainability Manager, developed new a local source restaurant, created an organic farm at urban Brownfield site; and initiated sustainability projects within multiple existing companies. UW-Extension shared program profits with partner campuses in 2017 that will be used to maintain strong curriculum and services for future students.*

**Keywords:** *sustainable management; MS; online; natural, social, and economic environments*

**Main Conference Topic:** *Sustainability, Environment and Risk Management*

### The Creation of a Program

The world is changing quickly and it is clear that we must pay significant attention to our use of natural resources and how our business practices impact human welfare. Increasing costs of energy, shrinking supplies of fresh water, civil unrest, and global climate change are only a few examples of systems under stress. The importance of sustainability for our society and for the world is widely recognized. The need for a sustainable economy in the 21<sup>st</sup> century creates the need for well-educated leaders who can address some of the more pressing concerns. This is particularly pertinent in Wisconsin USA where we manage extensive natural resources, where our manufacturing base is changing rapidly, and where our per capita income is \$4,500 lower than that of neighboring Minnesota. By helping to increase educational attainment in Wisconsin, this master's degree will help address this salary differential.

The University of Wisconsin online Master of Science in Sustainable Management (MS SMGT) program was developed based on the strong demand expressed by students in the online University of Wisconsin Bachelor of Science in Sustainable Management (BS SMGT) which began offering courses in September 2009. The strong audience for a graduate degree was evident by the fact that 23% of the 345 applicants for the online BS SMGT already possessing a bachelor's degree. In addition, 32 of those applicants inquired specifically about a master's degree in sustainable management. The online MS SMGT program is the natural extension of the BS SMGT degree to meet this demand. The online MS SMGT program provides the University of Wisconsin System (UW-System) more complete coverage of sustainability educational opportunities accessible to a global community.

Research conducted by Eduventures in 2012 indicated that 43 institutions in Wisconsin confer master's degrees, but only one offers a master's degree relevant to sustainability. The University of Wisconsin-Madison offers the Master of Science in Conservation Biology and Sustainable Development. It was clear that there was a need for a new degree that differs in curriculum, delivery format/structure, content, target audience, and price by providing an online alternative for non-traditional students. Recognition of this need prompted five campuses in the UW-System (UW-

Green Bay, UW-Oshkosh, UW-Parkside, UW-Stout, and UW-Superior) to seek approval to develop the online MS SMGT degree. This unique collaboration across multiple campuses was made possible through the administrative leadership and financial support at UW-Extension Continuing Education, Outreach, and E Learning (CEOEL) division.

According to the 3344 executives in the McKinsey Global Survey (Bonini and Bové, 2014), sustainability is becoming a more strategic and integral part of their businesses. Respondents in past surveys most often cited cost cutting or reputation management; however, now 43 percent of respondents indicate their companies seek to align sustainability with overall business goals, mission, or values. This percentage is more than double the result of the 2010 survey findings.

Although there are now numerous online master's degrees in sustainability throughout the United State, the bulk of these programs are modified Master of Business Administration degrees that include a focus on sustainability concepts. The University of Wisconsin online MS SMGT degree offers students a uniquely multidisciplinary experience based on faculty expertise from multiple academic departments and campuses with the focus on sustainability at conception.

### Development of Program Curriculum

Input from corporations with histories of being interested in sustainability and triple bottom line criteria were consulted during the development of the program curriculum. Some of these corporations have headquarters in Wisconsin, others in the Midwest. A number of them are multinational, Fortune 500 businesses. Some of the companies that provided input toward the development of the M.S. in Sustainable Management program were:

- Ford PAS
- Johnson Controls
- Anixter
- Riley Construction

As a result of the engagement with these companies, a list of competencies was drafted by Faculty representatives from each of the five partner campuses. Each course was then designed to address selected competencies such that each graduate would have the opportunity to achieve each the full set of competencies from this program. Upon completion of the MS SMGT program, graduates will be able to:

- Effectively communicate complex topics.
- Analyze the changing relationship of humans to the natural environment.
- Synthesize the role of humans in the biosphere and human impacts on natural systems.
- Apply the metrics used in the natural, social, and economic environments.
- Evaluate the role of government agencies and obligations to future generations.
- Apply micro and macroeconomic models utilizing financial, natural, built, and social capital.
- Integrate the built environment with the intersection with human needs.
- Analyze the social and political influence in democratic systems.
- Understand, create, and execute organizational leadership.
- Evaluate the interface of organizations and the communities in which they exist.
- Apply steps in supply chain management.
- Synthesize natural resource management for water, materials, and land.
- Analyze components of waste management and pollution prevention.

Adult and nontraditional students were also consulted to seek input regarding their preferences for course and curriculum formats. These students expressed strong preference for online courses offered in both traditional, semester-length formats and in accelerated formats. Students also expressed preference for a streamlined set of courses with few or no electives. Finally, students indicated a preference for minimal repetition or redundancy in the curriculum.

Considering the corporate and student input, the partner campus faculty representatives drafted the program curriculum which included: Core courses Curriculum consisting of 8 courses (24 credits) to be completed by all students; Specialty Electives of two courses (6 credits) chosen from a set of 4 courses; and the Capstone Experience which consists of a Capstone Preparation course (1-credit; project proposal) and a Capstone Project course (3 credits). In total, students complete 12 courses (34 credits) to earn the online MS SMGT degree. Detailed description of program courses are provided below.

<b>Program Array</b>	<b>Institution</b>
<b>CORE CURRICULUM (students complete the following 8 courses, 24 Cr)</b>	
<b>SMGT 700</b> Cultural and Historical Foundations of Sustainability	Oshkosh
<b>SMGT 710</b> The Natural Environment	Parkside
<b>SMGT 720</b> Applied Research and the Triple Bottom Line	Superior
<b>SMGT 730</b> Policy, Law, and the Ethics of Sustainability	Stout
<b>SMGT 740</b> Economics of Sustainability	Superior
<b>SMGT 750</b> The Built Environment	Oshkosh
<b>SMGT 760</b> Geopolitical Systems: Decision Making for Sustainability on the Local, State, and National Levels	Green Bay
<b>SMGT 770</b> Leading Sustainable Organizations	Green Bay
<b>SPECIALTY ELECTIVES (students choose 2 of the following 4 courses, 6 Cr)</b>	
<b>SMGT 780</b> Corporate Social Responsibility	Superior
<b>SMGT 782</b> Supply Chain Management	Stout
<b>SMGT 784</b> Sustainable Water Management	Parkside
<b>SMGT 785</b> Waste Management and Resource Recovery	Green Bay
<b>CAPSTONE EXPERIENCE (students complete the following, 4 Cr)</b>	
<b>SMGT 790</b> Capstone Preparation Course (1 credit)	Oshkosh
<b>SMGT 792</b> Capstone Project (3 credits)	Oshkosh

Students complete courses in whatever order works for them, with the exception of the Capstone Preparation and the Capstone Project course. The Capstone Preparation course is taken the semester before the Capstone Project course which is completed in the final semester. Descriptions for the courses in the MS SMGT degree program are as follows:

**SMGT 700 Cultural and Historical Foundations of Sustainability – UW-Oshkosh**

The changing relationships of humans to the natural environment; changes in dominant scientific perspectives and the process of scientific debate. The quest for understanding, manipulating, and dominating the natural world. Cultural and organizational structures; the role and impact of technology; the systems approach to problem solving and its implications for the future.

**SMGT 710 The Natural Environment – UW-Parkside**

Natural cycles, climate, water, energy, biosystems, ecosystems, the role of humans in the biosphere; human impacts on natural systems. The carbon cycle as a unifying theme. Specific topics to be studied include: disturbance pollution and toxicity, carrying capacity, and natural capital. Use of case studies.

**SMGT 720 Applied Research and the Triple Bottom Line – UW-Superior**

Document and project internal and external costs resulting from the inseparability of the natural, social, and economic environments. Assess sustainability issues using basic modeling techniques; cause and effect, root cause analysis, regression analysis, and business scenario-based cases.

**SMGT 730 Policy, Law, and the Ethics of Sustainability – UW-Stout**

The law and ethics regarding sustainability of economic development and emerging environmental challenges at national and international levels; including National Environmental Policy Act (NEPA), United Nations Environmental Program (UNEP), carbon footprints, Kyoto Protocol, and Brundtland Commission. The policy and role of government and its agencies such as the Army Corps of Engineers and Department of Interior, in building a more just, prosperous, and secure environmental common future.

**SMGT 740 Economics of Sustainability – UW-Superior**

Understand the economy as a component of the ecosystem within which it resides, with natural capital added to the typical analysis of human, social, built, and financial capital. Explore traditional micro, macro, and international trade theory and policy and the implications of sustainability. Topics include history of economic systems and thought; globalization and localization; distinguishing between growth and development; the nature and causes of market failure; consumption, consumerism, and human well-being; emerging markets; technological change; business organization and financial market alternatives; demographic change; and the global food economy.

**SMGT 750 The Built Environment – UW-Oshkosh**

Explore how the built environment came to be and the intersection of human needs: water, air, food, waste, transportation, healthcare, and education. Evaluate community design: what does a sustainable community look like? Study related technologies and evaluate alternatives, discuss unintended consequences. Course will include case studies.

**SMGT 760 Geopolitical Systems: Decision Making for Sustainability on the Local, State, and National Levels – UW-Green Bay**

An examination of decision making and public policy for sustainability at the national, state, and local levels, with emphasis on the social, economic, and political factors affecting decisions within both the public and private sectors. Attention is given to formal American policymaking processes, informal grassroots activities and consensus building, public engagement with sustainability decisions, corporate sustainability actions and reporting, the promise of public-private partnerships and collaborative decision making, and practical examples of how decision making fosters effective transitions to sustainability goals at all levels.

**SMGT 770 Leading Sustainable Organizations – UW-Green Bay**

A macro-level perspective on leading sustainable organizations. Topics addressed include organizational change and transformation processes, strategic and creative thinking, organizational structures and their impacts, conflict management and negotiation, stakeholder management, and situational leadership styles and behaviors. Focuses on how organizational leaders develop and enable sustainable organizations, especially in times of environmental change.

**SMGT 780 Corporate Social Responsibility – UW-Superior**

Corporate social responsibility and an organization. Evaluation of risks and potential impacts in decision making recognizing the links between the success of an organization and the well-being of a community. Integrating corporate social responsibility throughout an organization, creating metrics and communicating CSR policies internally and externally. Development of best practices in an organization pertaining to corporate social responsibility.

**SMGT 782 Supply Chain Management – UW-Stout**

Planning, organizing, and controlling the organization's supply chain are examined in context of the triple bottom line. Total cost analyses or product and process life cycles are considered in the context of strategy and operations. Topics include sourcing, operations, distribution, reverse logistics, and service supply chains. Process measurements and the impact on organizational performance in the context of footprints (e.g., carbon, water, pollution). Discussion of existing and potential software systems.

**SMGT 784 Sustainable Water Management – UW-Parkside**

This course addresses practical applications of sustainability in aquatic environments. Topics covered include water and health, water quality and quantity, governance, assessing the aquatic environment, water treatment technologies, environmental mitigation, and impacts of climate change. Emphasis will be on selected areas of interest from the perspective of public health, engineering, and municipal conservation management.

#### SMGT 785 Waste Management and Resource Recovery – UW-Green Bay

Topics include the generation, processing, management, and disposal of municipal, industrial, and agricultural waste with an emphasis on the technical, economic, and environmental aspects of various recovery processes. Additional topics will include producer responsibility, design for environment, and life cycle analysis.

#### SMGT 790 Capstone Preparation Course – UW-Oshkosh

This one-credit orientation course is designed to prepare students for the capstone project. Students build the foundation their capstone project through literature reviews, research, data analysis, and scholarly inquiry and prepare a Capstone Project Proposal. Capstone Project Proposals must receive approval before commencement of SMGT 792.

#### SMGT 792 Capstone Project – UW-Oshkosh

The Capstone Project provides students with the opportunity to apply learning throughout the program as applied to a real world issue. Students help real organizations solve an existing sustainability problem by implementing practical knowledge to achieve a triple-bottom-line solution. The instructor serves as a guide throughout the experience.

### The Capstone Experience

One of the highlights of the online MS SMGT program is the Capstone Experience which is initiated by the student, supervised by faculty, and guided by the sustainability principles accumulated during the student's course work. Projects may focus on issues such as supply chain structures, energy efficiencies, or environmental and climate concerns. Many of the students use the Capstone Experience to advance an initiative at their existing place of employment and many students have developed new sustainable business models through this final program requirement. The following is select set of Capstones Project titles to illustrate the diverse array of topics pursued by past MS SMGT graduates:

- Repurposing a Former Brownfield to Establish an Urban Solar Ranch in Southeast, WI
- Girl Scouts: The Tail of Two Bags-Examination of Reusable Plastic Bags
- A Scope 3 Carbon Emission Calculation Method for the SME: Modeled for Reality
- Exploring the Need for Sustainable Practices as Therapeutic Activities to Enhance Quality of Life for Homebound Seniors
- University of Wisconsin Health: Construction and Demolition Recycling and Reuse

### Masters in Sustainable Management

Graduates of the University of Wisconsin online Master of Science in Sustainable Management program are establishing themselves as leaders in their fields. Some examples of what MS SMGT graduates have accomplished with their degree include; a career with the United Nations, gaining a company promotion to Sustainability Manager, developing new a local source restaurant, and establishing an organic farm at urban Brownfield site. Below is a brief profile of one recent MS SMGT graduate that provides a typical narrative for this program.

Amy Glawe, a native of Downers Grove, Ill., earned her bachelor's degree in chemical engineering. She's been working in the plastics industry ever since. She didn't plan on pursuing a master's degree but when she found the online MS SMGT program at University of Wisconsin-Parkside, the curriculum changed her mind. Ms. Glawe stated:

*"I thought I really want to do this. Sustainability is my passion."*

Amy Glawe is a Materials Science Lab and Sustainability Manager at a forward-thinking plastics manufacturing company and a recent graduate of the MS SMGT program. Because of her graduate degree, she earned the title extension to include Sustainability Manager. Amy says:

*"Having a master's degree gave me the credibility I needed to earn the new title and lead my company's sustainability program."*

As a full-time working mother of two active teenage children, Amy indicated the online delivery mode for the program was the only way she could complete the degree. She says:

*"I have two children, and with their schoolwork and sports, I had little free time for anything else. I took my computer and books with me everywhere. I often sat at the ice rink or softball field, working on my assignments. It was tough, but I loved every minute of it."*

Amy noted a favorite aspect of the program was course discussions housed in the online learning management system. There, students connected with their peers and shared ideas. She says:

*"I learned so much about others' perspectives on sustainability," she says, "and how sustainability applies to their business situations."*

### Sustainable Program Accomplishments

The online MS SMGT program began offering courses in Spring 2013 with initial enrollment of 32 students. Student enrollment for Fall 2017 of 157 students indicates that the demand for sustainability education remains strong. As of summer 2017 at total of 50 have earned an MS SMGT degree. The table below shows the number of students, the gender percentage and average age of MS SMGT student by term (complete data beginning in Summer 2014).

	Number of Students	Gender (%M / %F)	Average Age	Number of Graduates
Spring 2013	32			
Summer 2013	29			
Fall 2013	94			
Spring 2014	133			
Summer 2014	56	47 / 43	37	
Fall 2014	86	44 / 56	38	3
Spring 2015	84	45 / 55	35	2
Summer 2015	61	38 / 62	37	4
Fall 2015	107	39 / 61	36	7
Spring 2016	84	45 / 55	35	6
Summer 2016	72	36 / 64	36	4
Fall 2016	133	39 / 61	36	13
Spring 2017	142	44 / 56	36	9
Summer 2017	101	34 / 66	35	2
Fall 2017	157	38 / 62	36	
<b>Total</b>				<b>50</b>

The number of online MS SMGT students has grown steadily since the initiation of the program. The lower number of students for the summer terms is expected as many students devote summers to family vacations. Each term has an increased enrollment the following year with the exception of the Spring 2016 term of 84 students following the Spring 2015 term of 84 students which followed the Spring 2014 term of 133 students.

The online MS SMGT program has consistently included more female students with the exception of the Summer 2014 term. The average age of students has varied between 35 and 37 years young. The first three graduates received their degrees in Fall 2014. Fall 2016 and Spring 2017 terms consisted of the largest graduating classes of 13 and 9 students to date. The online MS SMGT program is averaging over 10 graduates annually since 2014. UW-System uses an average of 5 graduates annually as one measure for successful programs.

### **Future Sustainable Management Leaders**

The United States Bureau of Labor Statistics (BLS) does not have an occupation category for sustainability because of the multidisciplinary nature of the field. Additionally, scholarly articles on the topic of sustainability career is lacking. Thus, it can be difficult to assess the current and future trends for careers in sustainability.

Major brands such as Apple, Coca-Cola, IKEA, MillerCoors, Nike, Patagonia, Walmart, and almost every other Fortune 500 company have made serious commitments to sustainability efforts. Small and medium size companies are following their lead while higher education institutions and many non-profit organizations are striving to adopt sustainability practices.

A simple Google search of "Sustainability Jobs" yields a LinkedIn website listing 30,100+ jobs and an Indeed.com website ("the world's largest jobs website") listing 28,172 jobs. The most recent survey from The Association for the Advancement of Sustainability in Higher Education (AASHE, 2017) shows that increases in sustainability positions at all levels on college and university campuses.

The steady increasing enrollment trend of the MS SMGT program along with the student demographics suggest that early career professionals are seeking sustainability career opportunities. The heavy commitment of time and tuition indicates that these students value the benefits of a graduate education. Monitoring the career progress of the University of Wisconsin MS SMGT graduates may be the best source of data on the effectiveness of our efforts to develop future sustainability leaders.

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## Business Education and Formation of Intellectual and Human Capital of an Enterprise

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### Abstract

*The paper examines the nature of business-education as an element that forms intellectual capital of an enterprise; it illustrates the influence of continuous business-education on formation and development of human, organizational and consumer capitals in the structure of intellectual capital of the enterprise.*

*The paper examines the main connections between business-education and formation of human capital of the enterprise. It also analyses the role and significance of this type of education for qualitative changes of labor resources characteristics regarding specific categories of personnel. The author analyses the influence of studying at various levels of business-education (EMBA/MBA, professional retraining and improvement of professional skills) on development of intellectual and human capital of the company through improvement of labor quality.*

**Keywords:** *intellectual capital, human capital, organizational capital, consumer capital, business-education, qualitative characteristics, additional education*

**Main Conference Topic:** *Education and Challenges of Teaching Professionals*

### Introduction

At the moment business-education is one of the most demanded forms of development and qualitative characteristics' improvement of heads and specialists of enterprises representing almost any field of manufacture and type of ownership. Nowadays a lot of researches are dedicated to analysis of this educational form significance within the system of formation and development of human capital. At the same time, I believe that the role of this educational form, its influence on formation and development of intellectual capital as well as analysis of qualitative characteristics of personnel while forming human resources of the enterprise are not paid due attention.

### Related work and analysis of current situation

The majority of modern researches related to development of enterprises' intellectual capital are carried out in the context of organisations operating in educational, scientific and high-tech fields. In my opinion, this approach in a certain way constrains analysis potential and practical application of its results while forming intellectual capital of enterprises representing other fields as a complex of intangible assets of various forms.

Modern science offers several approaches to examination of the "intellectual capital" term and its structural elements. I believe when we speak about detailisation and scaling-up the analysis of personnel qualitative characteristics and the process of the enterprise's intangible assets development, the most expedient way is to use such approaches that examine intellectual capital of the enterprise from the structural point of view. This structure includes three main interconnected types of capital: human, organizational and consumer.

Within the structural approach, human capital is seen as a complex of knowledge, practical skills, experience, creative and intellectual potential, personal qualities, moral values, competencies, leadership, labor culture, which are used by an enterprise or an individual in order to gain profit (Mineeva & Neganova, 2009). Exactly human capital accumulates qualitative characteristics of employees, determines opportunities for their development in the context of business-processes used in management of the enterprise. In my opinion, it's obvious that development of human capital as a structural element of intellectual capital is directly connected with the quality of the educational system in general and the programs of business-education in particular.

Moreover, we need to take into consideration the fact that top-management and (in some cases) specialists by forming and developing human capital at individual level promote increase of human capital level in the structure of the enterprise's intellectual capital. For example, MBA-level programs help to acquire and master theoretical knowledge and form practical skills and abilities not only in the field of a certain enterprise's management but also in

the field of human resources management (Vladykina, 2009). Consequently, in a process of acquired knowledge and skills application, a top-manager graduated from a MBA program directly influences development of other employees' – his/her subordinates – human capital.

At the same time, the process of application of knowledge and skills that were acquired as a result of studying at the program, can be seen as a part of the enterprise's organizational capital formation; the results of this process, in my opinion, relate to increase of the level of the enterprise's human capital in general.

Acquiring knowledge and competencies, forming practical skills and abilities in the field of business management in the process of studying at the MBA program directly influences formation and development of organizational capital of the enterprise in the structure of intellectual capital.

Organizational capital is a complex of organizational capabilities of a separate enterprise, including technologies, business-processes, management systems, organizational culture, software and technical support, patents and licenses, organizational forms and structures, which help responding to the market demands. Increase in the level of organizational capital is also conditioned by how efficiently human capital is used in organizational systems, including the purpose of transforming and transmitting the information (Kritskiy, 1991).

It needs to be mentioned that in this structural element of intellectual capital we can see, on the one hand, how specialized knowledge and skills, management tools acquired as a result of taking a business-education program are applied in practice, increase efficiency of both business-processes and concrete functions, and on the other hand, how already accumulated human capital is used in a better way.

The role of business-education programs in formation and development of organizational capital is obvious now. A part of human capital formed by knowledge and skills acquired as a result of business education programs, provides a basis for organizational capital formation. By applying specialized knowledge and practical skills, which enable optimization of management processes, business-processes, commercial activity and increase of the enterprise's efficiency, managers and specialists help form and develop both organizational capital as a structural element of intellectual capital and intellectual capital of the enterprise in general.

Theoretical knowledge and practical competencies and skills that a manager or a specialist acquires when he studies at a business-education program are used not only to increase efficiency of separate business-processes, but also to improve business activity of the enterprise in general, including its position in the market of goods/services. (Galenko & Tabelova, 2016)

In view of the abovementioned, when we examine efficiency of business activity, an important aspect should be considered: formation and development of consumer capital or relations capital in the system of intellectual capital of the enterprise. This structural element of intellectual capital is a system of sustainable links and relations with clients and consumers, which enables them to meet their needs in a productive way by interacting with human resources of the enterprise (Kritskiy, 1991).

I believe consumer capital can be seen as a certain result of intellectual capital forming process. In a process of accumulation and exploitation of human capital in formation and development of organizational capital, consumer capital of the enterprise is being formed. Satisfaction of customers, formation of image and brand, sustainable links and relations with customers are impossible without formation and development of the intellectual capital elements mentioned above.

It is also worth mentioning that consumer capital and business-education are not connected directly. When a manager or a specialist studies at a business-education program in the environment of potential clients, partners or competitors, in a certain sense he develops relations capital, which is especially typical for small and medium enterprises. Therefore, business-education programs condition formation and development of this type of intellectual capital.

In my view, special attention should be paid to such an important aspect as interconnection between business-education and relations capital in the context of corporate social responsibility. Expenditures on training and development of human resources are an essential element of social activity and reporting of enterprises.

Business-education programs are obviously one of the most expensive educational programs. However, providing managers and specialists of enterprises with opportunity to increase their professional level within the framework of, for example, EMBA/MBA programs, enterprises show not only certain level of financial stability, but also intention to increase the number of highly qualified labor resources at the enterprise so that to increase the efficiency of the

enterprise (Vladykina, 2009). To my mind, this aspect directly influences formation and development of consumer capital in the structure of intellectual capital of the enterprise.

Based on all mentioned above, it's obvious that business-education programs significantly influence formation and development of each structural element of intellectual capital of the enterprise and, consequently, its development in general. Provision of high quality business-education for managers and specialists of enterprises is a requirement for increase of efficiency in business-activity and concrete business-processes.

Let's examine the interrelations of additional and business-education with development of human capital of the enterprise.

Education is an integral element of human capital development in any society. The systems of secondary, vocational and higher education are the primary elements of education within the framework of social and labor relations. The result of studying in these systems is correspondence of employers' requirements and candidates' qualifications to concrete job positions, including economy and management areas. In the process of labor activity a problem of development and training of personnel and, consequently, a matter of the role of business-education in formation of human capital of the enterprise, arises.

Theodore W. Schultz and Gary S. Becker (Kritskiy, 1991) are widely recognized as the founders of the human capital concept in its modern form. They presented the results of their research to scientific circles in 50-60ss of XX century. The suggested approach justified the role of education as a crucially important factor of society and economy development and illustrated advantages of people with special education over people with general secondary education.

G.Becker continued developing the human capital concept, justified effectiveness of investing to human capital and formulated an economic approach to human behavior. Within the framework of this concept an individual, a person in the economic sense is compared to tangible capital that is used in manufacture. At the same time, education is seen as a form of investment to human capital.

G.Becker understood human capital as a complex of innate abilities and acquired knowledge, competencies, skills and motivations, which can be efficiently used in order to increase profit and other benefits (Kritskiy, 1991). This approach is widely used in modern science and is the basis for scientific researches in this field.

It needs to be mentioned that there is no uniform approach to defining the "human capital" term in modern science. For example, D.Berg understands human capital as a stock of employee's professional experience, which can be used to gain potential profit in future (Kritskiy, 1991). W.Bowen interprets this phenomenon as a complex of acquired knowledge, skills, motivation and energy that a person possesses and can use to produce goods and services (Vladykina, 2009). Edwin G. Dolan sees human capital as a capital in form of mental capacity, acquired through formal training/studying or through practical experience (Mineeva & Neganova, 2009).

Russian science also offers various understandings of the term in question. To my mind, A.I.Dobrynin, S.A.Dyatlov and E.D.Tsyrenova suggest an interesting interpretation. By human capital they understand formed as a result of investments and accumulated by an individual certain stock of health, knowledge, skills, abilities and motivations, which is expediently used in some area of social reproduction, promotes increase in productivity and production efficiency and by this causes profit (salary) growth of this person (Kritskiy, 1991).

Many researchers, including T.Yu.Bazarov, E.S.Stroev, A.D.Nekipelov, share understanding of "human capital" as a certain stock of knowledge, skills, and other personal traits specific for a concrete individual. At the same time, a number of scientists, such as Yu.G.Odegov, S.M.Pyastolov, B.M.Genkin, believe that human capital is a personal ability to gain profit in some form (Kritskiy, 1991; Odegov, Abdurakhmanov, Kotova, 2011).

Some researchers in their definitions include knowledge and production experience to the structure of human capital. Other approaches mention among structural elements of human capital such factors as personal health and motivation. In any case, it's obvious that within any approach formation and development of human capital of an employee, an enterprise and society in general lays exactly in the field of social and economic relations.

The modern theory of human capital is grounded on the economic approach to human behavior. This approach is implemented on the basis of several principles (Mineeva & Neganova, 2009):

- abilities, knowledge, professional skills and competencies, motivation become a capital at the moment of purchase and sale of labor, hiring or receiving remuneration by an employee;
- human capital growth and its efficient use ensure productivity growth;
- expedient use of capital creates opportunities for growth of employees' profits;

- growth of profits stimulates an employee to invest in health as well as in education in order to increase the level of his competencies and skills for their further efficient application.

The first principle defines the role of secondary, vocational and higher education in human capital formation. As for principles related to the economic approach to human behaviour, in my view, they tell about developing human capital of an enterprise based on additional (in broader sense) and business-education of employees.

By business-education I understand a complex of educational programs for specialists and managers in the field of economy and management, including trainings, professional improvement programs, professional retraining programs as well as programs of EMBA/MBA level. (Galenko & Tabelova, 2016) Theory and practice of labor resources development show: the higher is the category of employee (this can be defined through the level of remuneration), the more expensive is an educational program for such employee's development.

It should be noted that professional improvement programs, which are mandatory for majority of positions, are mainly aimed at updating existing knowledge, competencies and skills of employees, i.e. developing previously acquired knowledge along with receiving actual information on innovations in the professional field.

As for the programs of professional retraining of specialists in the system of additional education, to my mind, there is quite a wide range in the level of knowledge and skills that can be formed and in future significantly influence human capital of the enterprise. There exist examples when the programs of professional retraining form only the minimum number of competencies and skills, required for employment at a certain position or specialty.

Differentiation of professional retraining programs mainly depends on their target group, i.e. the category of personnel. (Galenko & Tabelova, 2016) I believe that in general such programs are a supporting element of human capital development at the enterprise and are designed so that to ensure that personnel of the enterprise meets modern requirements to educational and qualification levels.

In their own turn, the programs designed for top-managers and, first of all, the programs of EMBA/MBA level are one of the main elements of human capital development at the enterprise and its formation at a higher level. Specific programs designed and implemented due to current needs of the enterprise (trainings, professional skills improvement for top-management, programs combining training and consulting, etc.) should be attributed to the same category. Such programs provide theoretical knowledge and practical skills required for work in the field of business.

It's worth mentioning that such programs normally give competencies and skills in certain areas of practical activity, they are specialized and include innovative experience of the leading companies and enterprises in concrete fields of business. Moreover, this means that knowledge, competencies and skills acquired by managers of various levels in the process of studying, form not only higher level of human capital for this exact category of employees, increase management efficiency in various processes, but also indirectly influence qualitative characteristics of employees of other categories – their subordinates.

Thus, business-education is one of the main elements significantly influencing formation and development of human capital at the enterprise.

### **Problems and suggestions**

However, one of the problems that business-education faces, is that nowadays the structure of personnel quality analysis at the enterprise includes no indicators describing the abovementioned elements of the educational system. In fact, analysis of personnel qualitative characteristics takes into account only generally accepted educational levels, which describe either the initial state, or changes in the educational level related to the basic professional education of employees. In addition, at the moment the structure of the abovementioned analysis examines only changes in ratio of the number of employees with secondary, vocational, higher education and sometimes also in a group "more than one higher education" but changes in qualitative characteristics related to studying at this or that type of business-education programs can't be traced in existing analysis of human resources of the enterprise.

In my opinion, this error results in decrease of cost effectiveness for training and development of personnel, troubles analysis of need for personnel training, analysis of qualitative characteristics of personnel and, consequently, development of human capital of the enterprise and HR-management system.

In view of the abovementioned, I suggest expanding the analysis of human capital and labor resources qualitative characteristics of the enterprise by introducing to the analysis structure certain indicators reflecting the significance of business-education. Similar to already used indicators, which describe educational level of labor resources, the indicators related to studying at business-education programs can be calculated as a share of employees with a certain level of corresponding additional and/or business-education in a total number of employees.

I suggest including the indicators of the following shares in a total number of employees to analysis of personnel qualitative characteristics:

- number of personnel that improved their qualification during a certain period of time;
- number of personnel that graduated from EMBA/MBA programs;
- number of personnel that graduated from professional retraining programs;
- number of personnel that took part in specialized trainings.

The calculation is made by dividing the number of personnel that graduated from each of the abovementioned programs by the total number of employees. In this way, the analysis of personnel qualitative characteristics of the enterprise is expanded and allows comparing the results of different forms of personnel development, analyze the dynamics of development and training of personnel, provide economic justification of training and development costs comparing them to the efficiency indicators of employees' labor activity.

## Conclusion

In my opinion, expanded analysis of qualitative characteristics will help to increase planning and implementation efficiency of educational programs and development of personnel at the enterprise. Moreover, it would facilitate the conduct of more detailed analysis of educational programs' efficiency by comparing it with indicators of labor activity.

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## Project Collaboration in International Research Clusters: Studying Business Networks and Forming Future Vision of Changing Global Economy Landscape

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### Abstract

*Current conference paper is based on the research, made by the author for the International Week which was held in Saimia University of Applied Sciences (Finland) and observes main approaches, principles and experience of project collaboration: studying business networks by forming international collaborative networks, or "proto-clusters", paying attention to changing global economy landscape. Examples of collaborative practices show that project-oriented learning in research clusters provide students with necessary competences of adequate response to current digital and industrial transformations and open-mindedness to foresee further changes in international business patterns and paradigms, including current transformations of sustainability paradigm and evolutionary economics as progressive*

*science. Special attention is paid to the future-oriented research – Foresights techniques that should be incorporated into all student research projects, especially in the field of international economy – to absorb the "seeds" of future developments in global manufacturing and market transformations.*

**Keywords:** research cluster, intercompany network, Foresight, collaboration network

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

The world economy momentum is revealed in a growing diversity and complexity of global economic system with the great number of paradoxes and dichotomies. The speed of changes is increasing, that brings additional pressure on all the participants. One of the main roots of these changes is technological breakthrough – exponential speeding up of data transmission – as a basis for speeding up production cycles that increase additional risks of the "lock-in" – inability to react on the external changes. We are definitely in the turning point of international economics as a science and a discipline.

All actors of the global economy are facing the *networking principle of international business*: economics of alliances, partnerships, cluster networks, quasi-integration effects, in general – hyper-connectivity of all actors of world economy through cyber-nets. Global and regional value-added chains are expanding, forming the backbone of "Industry 4.0" (Schwab 2016) including digitalization, artificial intelligence, data mining, FinTech, reducing significantly transaction costs", if not additional cyber-risks and expanding unmanned technologies, sharpen the future problem of structural technological unemployment. Considering all the stakeholders of global networking it is important to pay attention to national interests that bring us to the contradiction regionalism vs. globalization: complication of regional integration systems, "spaghetti bowl" of regional agreements, institutions, coalitions and alliances - facets vs. networks. This dilemma as a whole turns to the big issue of opportunities and principles of mega-regulation, economic sovereignty, determining frontiers of economic systems.

It is important to make a divide between two contemporary approaches to understanding economic systems: traditional and alternative. Although traditional hierarchical logic seems to be evident for better governance, elements of networking approach are inevitable in the face of changes, mentioned above.

The main proposition of the **traditional approach** is the uniqueness of economic systems with their following characteristics:

- National sovereignty, economic "nationalism",
- Regional integration protectionism, insulation,
- Economic and trade wars as a tool of mutual interference,
- Perception logic of a hierarchical "tree".

**Alternative approach** stands for the convergence of economic spaces which means:

- Virtualization of the economy (network matrixes),
- Openness, mutual penetration,
- Movement from hierarchy – to heterarchy, from “tree” to the network (rhizome).

In general it is necessary to state that “Economics of change” becomes nowadays the right focus for University studies, including quantities and qualities of structural changes. Paradoxically it is even more relevant, keeping in mind low prognostic potential of global economic development: detection of “black swans” – events with low predictability potential but greater influence on the situation in the world economy (Taleb 2015). The discourse below is devoted to the opportunities of implementing a networking paradigm in University studies of international economy on the Master level in the light of current scientific, industrial and social innovations.

### **Concepts and approaches to university research clustering: studying networks by forming collaboration networks**

Networking principle of international economy in general and international business in particular brings academic thought and teaching practice to the idea of research clustering in a wide sense, meaning not only studying the structures and behavior of nodes and links in business networks, but also form “proto-clusters” of researchers in student groups. It seems to be not so fresh idea, but current publication will show that the most effective way to study industrial innovative networks is to study them *in networks* – though it sounds rather tautologically.

To get the full synergy and awareness of such practice in the current paper it is suggested to combine several concepts:

- Revisited approach, formulated in the Report to UNESCO “Learning: The Treasure Within” of the International Commission on Education for the Twenty-first Century, chaired by Jacques Delors, former European Commission President, proposed an integrated vision for education (*Learning: The Treasure Within* 1996). It is important along with three basic pillars of education, mentioned in the Report (learning to know; learning to do; learning to be) to point out the fourth pillar of education: *learning to live together* – a need to develop an understanding of others, of their history, their traditions, and their spirituality. Such understanding “would provide a basis for the creation of a new spirit which, guided by recognition of our growing interdependence and a common analysis of the risks and challenges of the future, would induce people to implement common projects or to manage the inevitable conflicts in an intelligent and peaceful way [...] and “to escape from the dangerous cycle sustained by cynicism and complacency” (Tawil, Cougoureux 2013, p. 3). This approach is crucial for the networking studies taking into account that networks are formed, primarily, as social networks, based on the mutual acceptance and trust.
- Collaboration networks and cluster approaches, developing nowadays as a rich branched structure of concepts, including implicit and explicit knowledge transfer, matters of proximity and structures of business networks, international clustering, network externalities, etc. (Boschma, Frenken 2010; Boschma, Fornahl 2011; Baggio, Sheresheva 2014; Smorodinskaya 2015).
- “Research hatchery” learning and teaching concept developed in Turku University of Applied Sciences (TUAS) since 2004, providing one of the networked learning environments. It is important to emphasize an interdisciplinary aspect of this approach: “Bringing together experts from different fields, interacting with co-workers from diverse backgrounds and multidisciplinary fields generate possibilities for groundbreaking work when boundaries are set aside and solutions are looked for in previously unexplored areas” (Research Hatchery as a Cradle for New Innovators. Handbook for implementation 2013, p. 14).
- Ecosystems and evolutionary economy approach, meaning that all kinds of industrial-innovative networks are constantly developing systems, is becoming fruitful nowadays, when many businesses create hybrid industries, based on cross-innovations and new types of facilitation and intermediation. Biological analogies provide researchers with fresh vocabulary for the description of companies and networks behavior (Nelson, Winter 1982; Moore 1993; Peltoniemi 2005).

### Practice of research clustering while studying international companies' networking

Within the course "International companies' networking" of the Master program "International economy" at Saint-Petersburg State University of Economics (UNECON) since 2011 the practice of research projects in small groups was tested and these experiences show an appropriate level of interaction and networking between students on qualified scientific search, analysis and synthesis of acquired information. See below some titles of projects fulfilled in research cluster groups:

- Studies of developing Finnish-Russian business clusters. Joint Project of Finnish and Russian Master students (in cooperation with Saimia University of Applied Sciences).
- Opportunities for creation of international cluster network in the energy-efficiency solutions sector between the cities in the Baltic Sea Region.
- Analysis of preconditions for the formation of intercompany networks in chosen industrial sectors between countries of the Eurasian Economic Union.
- Specifics and perspectives of developing industrial-innovative clusters in Latin America.
- Identification and analysis of external networks of chosen global company.
- Research of current state and perspectives of development of international intercompany networks in selected global manufacturing or service sector.

The last mentioned project includes perspective, future-oriented part, based on Foresight research tools. The research methodology offered to students is exhibited in the box below.

Research methodology of current state and perspectives of international intercompany networks in the selected global manufacturing/service sector (*may be adjusted during the research*)

Introduction: objective, tasks, sources, selected methods, limitations of research.

1. Analysis of international context for the chosen industry: fundamental and conjuncture, cyclical and non-cyclical factors. Identification of sector specifics, sector structure, flagship companies, influence of global and regional value chains on the structure of intercompany networks.
2. Identification of opportunities and barriers for the formation of international production networks: PESTLE-analysis, supporting institutions, business-environment, information background, endogenous and exogenous factors for networking. Opportunities for intersectoral networking.
3. Selection and analysis of three cases of developing transborder cluster networks based on documentary and statistical surveys of sector structure, determining cluster nodes and links. Constructing «cluster maps», determining innovative potential, comparative advantages and weak points in chosen clusters (based primarily on the Prof. M. Porter's methodology - Institute for Strategy and Competitiveness, Harvard Business School).
4. Assumptions of further development of determined intercompany networks based on technological Foresights and socio-economic forecasts in chosen sector.

As a result of this research the following global sectors were examined: pharmaceutical industry, biotechnology sector, maritime transportation services, aerospace industry.

It is important to emphasize the significance of Future Research and future thinking in general in any project fulfilled in research clusters: Foresight tools provide students with skill to synthesize all types of knowledge and implicitly present a future vision of their own future paths, which is important for their awareness of future carriers.

The *Foresight* toolkit is well-developed, for example, such instruments as determining "weak signals" and "wildcards" are appropriate in project work in student research clusters (Popper 2008, 2012; Rohrbeck, Battistella, Huizingh 2015).

Main instruments for the perspective phase of the economic Foresight, based on the methodology of Stanford University (Carlton T., Cockayne W., Tahvanainen A. 2013), are:

- Progression curves,

- Context maps (close to the new instrument of the World Economic Forum - Transformation maps, introduced for the public use in 2017),
- Janus cones.

Main qualitative Foresight methods to be used are:

- Environmental scanning
- Horizon scanning
- Alternative scenarios.

## Conclusion

Current survey shows the vital importance of project-oriented learning and building collaboration networks in the hyper-connected world, especially in the field of international economy.

It is important to formulate main principles of the project-oriented learning and teaching within research clusters:

- ✓ Interdisciplinary approach – meaning "holistic networks" rather than determinism in case of Master students' research.
- ✓ Awareness of the global context for the particular business network – which is extremely important in the process of growing transparency and openness.
- ✓ Future orientation of any research – a "Foresight push" that should be given to students by tutor selecting an appropriate toolkit.

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## Choose Your Friends Wisely – Cultural Accommodation and International Students' Employability

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### Abstract

*International students continue to grow in number worldwide, prompting researchers to look for ways to make the study abroad experience more fruitful. International students – probably more than any other population – face unique opportunities to form friendships not only with individuals from their home country, but also from the host country, and from other countries. Several studies report that international students tend to have more friends from their home country. However, prior research also shows that there is a robust relationship between having more host country friends and satisfaction, contentment, decreased homesickness, and social connectedness. A common motivation for studying abroad in the first place is to foster one's job opportunities in the host country's labor market. Our research-in-progress is the first study to empirically investigate the link between international students' patterns of friendship formation, the significant role cultural accommodation plays for the study abroad experience, and their effects on employability and actual employment in the host country. We are able to track a large sample of international business students from 50+ countries throughout their studies in Germany to their first employment after graduation. Our longitudinal study intends not only to add to the literature of cultural accommodation and employability, but also to the discourse of skilled migration as a way to tackle talent shortage, skills mismatch and demographic change. Those issues are of critical importance in Germany as in many other developed countries.*

**Keywords:** *International students, friendship network, cultural adaptation, skilled migration, employability, longitudinal study*

**Main Conference Topic:** *Education and Challenges of Teaching Professionals*

### Introduction

Like other developed countries, Germany faces the challenges of a shrinking labor force. With a fertility rate of 1.5 children per woman, the population is expected to decline by 10 million people by 2060 [3][4]. Adverse effects on the social security system and the economy of the country are foreseeable [18]. Today's economically active baby boomers will retire by 2035, creating 21 million inhabitants over the age of 67, and a considerable skill shortage with it [9]. To address this labor market shortage by encouraging skilled immigration, the German government has significantly reformed its migration policies [7]. According to the research unit at the Expert Council of German Foundations on Integration and Migration (SVR), international students are particularly suitable candidates for the labor market of their host countries [16]. As of 2012, international graduates are allowed to stay in Germany and look for skilled employment for up to 18 months after their graduation. This regulation is supposed to ease the access to the German labor market and consequently retain international graduates for the German economy [15].

So far, however, the increase in qualified migrants has only to a limited extent translated into viable employments: about 30 percent of international students in Germany are still unemployed one year after graduation [16]. A major obstacle international students in search of employment face is the lack of personal and professional networks. The better international students connect with host country students, the better they can improve their host country language skills and build friendships. These personal networks serve as a guide that helps internationals become more familiar with employment opportunities and workplace cultures in the host countries.

This research-in-process paper seeks to explore how cultural accommodation influences employability and employment of skilled migrants, using the number of friends in the host country as a proxy for cultural accommodation. Additional constructs that will be examined as having an influence on employability are motivation and drive as well as abilities and skills. Our research question is formulated as follows: "*How does cultural accommodation influence host country employability of international students?*" To answer this question, we plan to conduct a large-scale longitudinal study that will involve data gathering every six months. The sample will be international master students from a business school possessing multiple campuses in Germany. Our

control group will be German students studying at the same business school. We test our hypotheses by means of structural equation modelling.

The remainder of this paper is structured as follows: First we set the theoretical foundation and give a brief review of current literature in the areas of skilled migration, employability and social network building (section 2). We then develop our research model (section 3). This paper concludes with an outline of our proposed research process (section 4).

## Theoretical Background and Literature

**Skilled Migration:** Even though the current birth rate of Germany is at its highest since German reunification, the rate of 1.5 remains below the EU average of 1.58 children per woman [3]. Without immigration, the number of individuals available for the German labor market would decrease by 16 million by 2050 [14]. This predicted shortage of skills as a result of declining population is not the first of its kind in Germany. In the early 2000s, there was a considerable lack of skilled workers especially in the IT sector. This prompted a debate on the German controlled migration policy, significant enough to warrant the government setting up the 'Independent Commission Migration' [7]. The Commission found that Germany was in need of highly qualified immigrants to offset the skills shortage, leading to the introduction of a new Residence Act. This Act, among other aspects, regulates the possibilities of international students to immigrate to Germany and, after several revisions, has become more liberal over the years [15]. Thus, international students can receive a residence permit for studying in Germany if they get accepted into a higher education institution and prove they can sustain their livelihood. They can work for 120 full or 240 half days while studying. Additionally, they can remain in Germany for up to 18 months after graduation to look for employment that matches their qualifications. Within this 18 months they can do every kind of work to support their livelihood [15]. To this effect reports reveal that foreign enrolment in Germany reached 340,305 students in 2016, not that far off from the country's aim to enroll 350,000 students by 2020 [12].

**Employability:** While there is no singular definition of employability, we will regard it as having the capability to gain initial employment, maintain employment and obtain new employment if required [11]. Employability has become increasingly important as the future of work becomes more uncertain, labor markets become increasingly competitive and recruiters start to look for more than just good grades [6]. This holds even more true for international students as they face the additional barriers of insufficient language skills, lack of host country work experience, hesitant employers, lack of job entry support and service accessibility, and legal requirements [16].

Today's career environment is competitive and as such, an individual is as employable as they are willing and able to adapt to work-related changes. To this end, Fugate, Kinicki and Ashforth (2004) developed employability as being dependent on person-centered characteristics that work together to make a person more adaptable, and thus more employable [5]. Their psycho-social construct of employability consists of three dimensions: career identity, personal adaptability and social and human capital (see Figure 1). They describe a career identity as an individual's choice of career related goals which makes them partake in activities that enable them

to achieve these goals. Social capital (described further in the sub-section below) makes it easier to achieve these goals by using one's social networks to identify career opportunities. To realize these opportunities, one will need human capital such as education, work experience and job-specific competencies to be able to do so. Personal adaptability ties this up as it makes one more open to creating and maintaining social networks, and to pursuing activities that build their knowledge, skills, abilities and other characteristics related to human capital.

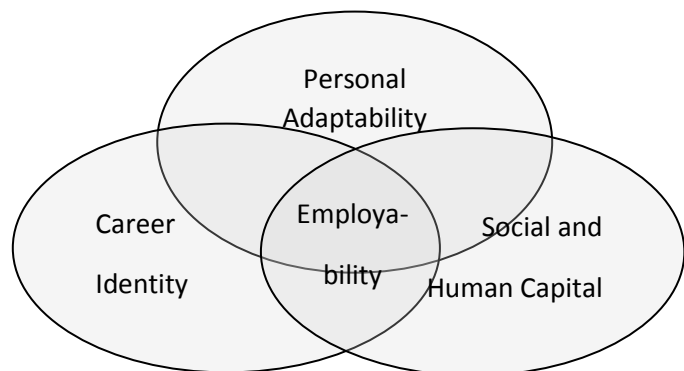


Figure 1 Heuristic Model of Employability [5]

A model depicted in Figure 2 was developed more specifically to explain the components of graduate employability. It is known as *CareerEDGE Model* by Pool and Sewell (2007), which is a mnemonic to help remember the five components of the lowest tier of the model. The authors propose that providing students with opportunities to access and nurture these five components will result in higher levels of self-efficacy, self-confidence and self-esteem – the crucial links to employability [17].

**Social Capital Theory:** Social capital refers to the resources available to a person that exist in the relations he or she has with other people [2]. These relations can also be referred to as ties [8]. Granovetter (1973) proposes the concept of *Weak Ties*, i.e. people who run in social circles different from ours and will consequently have information different than that which we are used to receive [8]. Granovetter's research revealed that only 16.7% of respondents who got a job from contacts had seen their contact often at the time, compared to 55.6% and 27.8% who only saw their contact occasionally or rarely respectively. Researchers have extended such research to international students, citing that it is important for them to nurture weak ties as it enables them to access more resources and bridge to new networks [10]. The current research looks to determine whether nurturing these ties truly does increase the network of international students thus positively affecting their employability.

**Friendship Network Grid:** International students form three types of friendships based on the purpose that they serve: (1) co-national friends who affirm and express the culture of origin; (2) host national friends who aid in fulfilling academic and professional aspirations; (3) multi-national friends who are mainly for recreational activities [1]. Hendrickson, Rosen and Aune (2011) propose a *Friendship Network Grid* to discover how the strength of these different types of friendships affects satisfaction, contentment, decreased homesickness, and social connectedness of international students [10]. International students with a higher ratio of host national friendships reported higher levels of satisfaction, contentment, social connectedness, and lower levels of homesickness. The authors conclude that strong friendships with co-nationals puts up a barrier to adapting to local culture as students keep on identifying with their own culture. On the other hand, more frequent and intense contact with host nationals accelerates the adaptation process as it exposes international students to the local culture and in so doing, helps them understand it [13]. The current research thus seeks to explore how host national friendships affect cultural adaptation and how this acculturation process can translate into employability and employment.

## Research Model

The abovementioned models, namely Granovetter's *Weak Ties* (1973), the *Friendship Network Grid* by Hendrickson et al. (2011) as well as Pool and Sewell's *CareerEDGE model* (2007) and the *Heuristic Model of Employability* by Fugate et al. (2004) serve as the theoretical foundation for our research. We base our model (see Figure 3) on the overall hypothesis that cultural accommodation is a main driver for international students to be employable in the host country. We plan to measure cultural accommodation by the number of friends and the share of host country friends in one's network. In addition, we will evaluate whether home-country and host-country identification could play a role in measuring this construct. Furthermore, motivation and drive as well as work experience and skills will be hypothesized as antecedents of employability. These constructs cover the aspects of willingness to do a job and being able to do a job in terms of prior work experience and/or certain skills. Special emphasis will be put on host country language skills as key factor influencing international students' employability. We will use study performance (i.e. grades) as a proxy for measuring these constructs. We control for age, gender, cultural cluster and partner's cultural cluster (as measured by GLOBE dimension).



Figure 2 CareerEDGE Model of Employability [17]

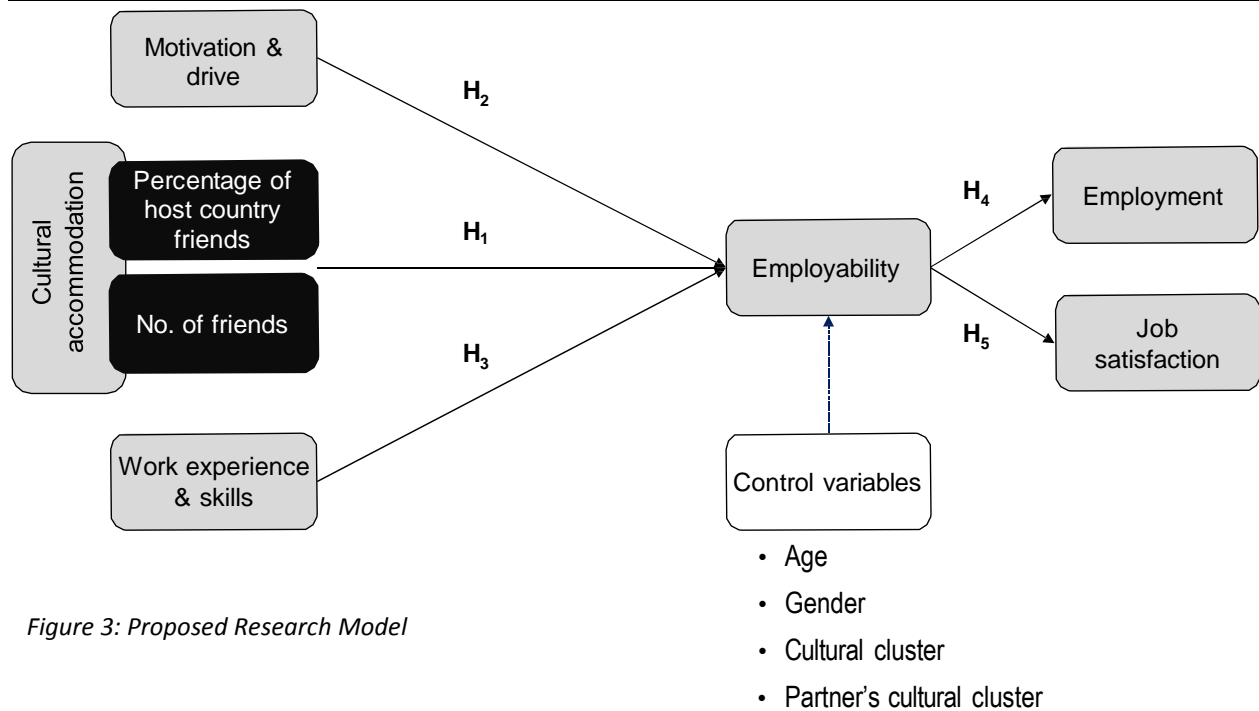


Figure 3: Proposed Research Model

We hypothesize that host country employability positively influences both actual employment as well as job satisfaction. That is, both host country employment and job satisfaction are ultimately influenced not only by motivation and skills but also by the number and share of host country friends. We thus derive the following hypotheses:

- H1** Cultural accommodation positively influences host country employability.
- H2** Motivation and drive positively influence host country employability.
- H3** Work experience and skills positively influence host country employability.
- H4** Employability positively influences employment.
- H5** Employability positively influences job satisfaction.

### Proposed Research Process and Next Steps

We propose a research process that consists of three major phases. In a first phase, we will strengthen our research model and underpin its theoretical foundation with a structured literature review on skilled migration, employability, cultural accommodation and friendship building. We are particularly interested in existing scales to measure the constructs of our final research model. These scales will then be used to develop a comprehensive questionnaire that will be pretested in the second phase of our research project.

After adjusting scales and items we will enter into the third and major phase of our study. We plan to gather data twice a year. Our sample consists of international students of IUBH University of Applied Sciences coming from 50+ countries. German students will serve as a control group. We will use students' matriculation numbers as unique identifiers so we are able to measure changes in cultural accommodation and employability over time. We will conduct a final data collection six months after graduation to measure actual employment (e.g. in terms of salaries) and job satisfaction.

Our longitudinal research design allows for relevant insights into the process of friendship formation and labor market success of international students ultimately contributing to our knowledge on how to successfully implement skilled migration policies on a societal level. Our hypotheses will be tested by means of structural equation modelling. Most likely, our data will be thus rich that we can tackle a number of other research questions in the areas of skilled migration, friendship formation, study performance and cultural integration each of which being of critical importance in many developed countries. Hence, we not only to add to the literature of cultural

accommodation and employability, but also to the discourse of skilled migration as a way to cope with talent shortage, skills mismatch and demographic change.

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## The Role of Universities in Stimulating Sustainable Consumer and Employee Behavior

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### Abstract

*Sustainability can be promoted through the sustainable behavior of population as consumers and employees. Sustainable behavior of young people is especially important as it defines the future of markets and companies.*

*Firstly, the phenomenon of sustainable consumption is considered. The emerging trend of sustainable consumption is analyzed in comparison to traditional consumption and modern consumerism. Compared to the Western countries population, Russian customers follow the principles of sustainable consumption rather rarely. The patterns of food consumption related to wellbeing and healthcare were revealed in the quantitative research of Russian young people.*

*Secondly, young people can influence the employment market by choosing companies, which follow sustainable development principles. The importance of this factor in the employee preferences was analyzed in the quantitative research in the framework of GEP (global employee preference) project.*

*The results of these two research projects showed the need to further develop competences of young people in the field of sustainable development. Aiming at this, the course on Sustainable Marketing is introduced in St.Petersburg State University of Economics in spring semester 2018.*

**Keywords:** sustainable behavior, sustainable marketing, sustainable consumption, GEP project, employee preferences

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

The sustainable development concept and plan of actions was officially launched in 1992 by the UN Conference on Environment and Development, the "Earth Summit" in Rio De Janeiro, attended by leaders from over 100 countries. After that, more and more consumers globally intend to follow the ideas of sustainable consumption. On the other hand, both large and small business open up innovational markets of organic and environment-friendly products. Thus, the factor of sustainable development, combining environmental, economic and social aspects is starting to be one of the major driving forces shaping the modern business and social environment. But the environment-friendly way of thinking and education, the appreciation of importance of social welfare for individual well-being still have not reached the same level in all countries due to historic and economic reasons.

The concepts of sustainable marketing and sustainable consumption penetrate the Russian market as well. However, compared to the population of Western countries, a Russian consumer is predominantly skeptical towards organic products and follows rarely the principles of sustainable consumption due to either lack of knowledge or strong influence of other consumption patterns.

Values of sustainable development can be reflected in several facets of individual behavior: sustainable consumption, supporting social initiatives for sustainability, acting as an employee or founder of sustainable organization. Two aspects will be covered in this paper: the sustainable behavior of population as consumers and employees. Sustainable behavior of young people is especially important as it defines the future of markets and companies.

The literature does not provide a clear answer to the question why the sustainable behavior is not so widespread in Russia. Existing research in this sphere is fragmented, which makes it difficult to develop strategies promoting innovational sustainable products and introducing resource-efficient behavior patterns. This paper makes three main contributions. Firstly, it considers the behavior of young people both as consumers and as future employees. Secondly, it reveals the barriers to sustainable consumption providing the results of qualitative research. Thirdly, it seeks for the barriers to employment in companies developing in a sustainable way.

A major role in fostering sustainable behavior among young people can be played by Universities. Department of Marketing of St.Petersburg State University of Economics (Russia) is introducing a new course on Sustainable

Marketing, which aims at increasing the awareness of Sustainable Development Goals, understanding the risks of greenwashing and trade-offs of three pillars of sustainability as well as forming the competencies in applying strategies and instruments of sustainable marketing.

### **Related work**

To ensure the sustainable development, it is important not only to motivate governments and companies to follow it but also to accelerate progress in the individual actions. By making everyday purchasing and consumption decision, by fulfilling his / her duties at job, an individual exerts direct and indirect influence on the environment. Euromonitor International's report "Top 10 Global Consumer Trends in 2016" mentions consumer eagerness to make more considered purchasing decisions, buying from responsible brands that sell them quality products with real value. The experts observe the perceived fit between the personal consumption choices and world improvement.

Previous studies of sustainable development and its impact on consumer behavior are focused on several specific topics. One of them is the influence of individual psychological processes on the sustainable behavior. For instance, Fraj-Andrés & Martínez-Salinas (2007) proved the impact of environmental knowledge on ecological consumer behavior in their empirical analysis. Neo et al (2017) defined the psychological factors such as awareness, knowledge, concern, and attitude which can shape responsible low carbon behavior. The questions of achieving sustainability through working with human nature were raised in the work by Kopnina (2017), where the author discussed sustainable production in relation to cross-cultural and historically consistent psychological traits.

Much of the recent research is devoted to sustainability on specific markets of goods and services. Thøgersen (2017) in the multi-level study described sustainable food consumption and food related lifestyle in different European countries. Schäufele & Hamm (2017) analyzed the willingness-to-pay for a product with sustainability attributes using the example of wine. Several studies were conducted in the field of sustainable tourism, presenting the comparative analysis of different countries and destinations (e.g. Zografos, 2007; Kuščer et al, 2017).

Another important research area concerns the role of sustainable development (including CSR) in stakeholder relations, in particular, the employee-employer relationship and employer branding processes. Aggerholm et al (2011) argued that co-creation and dialogue in employer branding support sustainable organizational development. The reciprocal influence of CSR activities on employees was reflected in two types of studies: one focused on the influence of CSR on attracting prospective human resources (Albinger & Freeman, 2000; Greening & Turban, 2000) and another on retaining existing employees (Rodrigo & Arenas, 2008; Dincer & Dincer, 2015). In the sphere of potential talent attraction, results indicate that CSR is related to firms' reputations and attractiveness as employees (Turban & Greening 1996). It was shown that corporate social performance strengthens the company's ability to attract the most qualified employees (Albinger & Freeman, 2000).

However, the major part of the empirical work has been conducted in the USA and Western Europe and do not cover the emerging markets. Consequently, the question of the applicability of the results of previous researches in this field on the Russian market remains unexplored.

### **Sustainable consumption**

Consumerism has become one of the prominent trends of the 2<sup>nd</sup> half of the XX century. On one hand, it became an incentive for enlarging product choice, improving service quality, and securing customer rights. Consumption satisfied customers' needs and wants, including the needs in self-expression, self-improvement and self-identification.

On the other hand, consumerism entails an endless quest for material values, fast obsolescence of products, addiction to brands and shopping process, perception of other people and self through conspicuous consumption of products and services. Product reliability and durability as well as households savings for potential future needs are sacrificed to the current over-consumption.

Modern ecological and social problems gave rise to a new pattern of consumption – sustainable (sometimes referred to as "green" or "responsible") consumption. Sustainable consumption is understood as a thoughtful act of buying, using and disposing goods that were created with care for social and ecological welfare; consumer behavior aimed at satisfying current needs and wants of an individual without harming the needs of future generations (Peattie & Collins, 2009; Haron et al 2005).

Sustainable consumption emerged as a reaction to the excesses of modern consumerism. However, it should not be equated with the traditional type of consumption (Table 1).

*Table 1: Comparison of the consumer behavior types*

Criteria	Traditional consumption	Modern consumerism	Sustainable consumption
Aim	Satisfaction of needs	Pleasure seeking	Increased satisfaction due to the care for individual and societal well-being
Satisfied needs	Basic stable needs according to Maslow's priorities	Dynamic individualistic needs; high priority given to recognition and self-actualization	Individual needs adjusted for long-term consequences for individual well-being as well as interests of society and suppliers
Time frame	The past	The present	The future
Orientation	Survival, preserving traditions	Materialistic, individualistic, hedonistic orientation	Quality of life in current and future periods
Financing consumption	If possible, money are partly saved	The incomes of future periods are spent	Low-risk financial policy
Conscious self-restraint	Exists	Does not exist	Exists to a certain extent
Attitude to innovations	Conservative	Pioneering	Pioneering

Marketing Department of St.Petersburg State University of Economics conducted a research project entitled "Methodology of forming innovational client-oriented business models based on sustainable marketing principles". In the framework of this project, sustainability values were compared in Russia and in Europe; their influence on the consumer behavior was tracked; barriers preventing the transition of sustainability values into actions were defined (Khalina et al, 2017). Qualitative study helped identifying the barriers that can prevent the direct transfer of the declared values into concrete actions among the Russian respondents:

- lack of adequate infrastructure, which makes actions either impossible or uncomfortable (in this case preference will be given to the less sustainable behavior);
- need for additional time and money (in this case the sustainable behavior is not completely rejected but is applied less frequently);
- lack of knowledge.

This research project also suggested segmentation of the Russian consumers by their attitude to sustainable development. In whole, it helped revealing typical patterns in consumer behavior, stereotypes and objections towards sustainable consumption. This knowledge helps tackling concrete problems while planning an educational course in Sustainable Marketing to be taught at the University.

### **Employee attitudes towards sustainable companies: research methodology**

In 2016, a research project dedicated to defining employee preferences in different countries (Global Employee Preferences, GEP) was initiated by Berlin School of Economics and Law. The project aims to reveal the relative importance of CSR for potential employees. As opposed to the previous researches, it stresses the influence of socio-economic situation and intercultural differences on the perception of CSR importance.

The main research questions applied to the Russian market on the present project stage are as follows:

- What attributes of the working place in whole and specifically what attributes connected to the CSR are important for the future employees?
- Are their differences between the CSR-related expectations of the German and Russian respondents?

In the framework of GEP project, 185 Russian students, predominantly studying Management and Economics in a full-time and part-time mode, were questioned in the period between October 2016 and February 2017. The sample consisted of 71% female and 29% male respondents aged from 18 to 31 years old with the mode of 21 and mean value of 21,4. It corresponds to the typical age of university studies in Russia. 74% of the respondents studied on bachelor level, 23% - on master level, the rest pursued PhD degree. The main target audience of the survey were the students, whose graduation is close and who have formed more or less clear preferences regarding their future employer. 69% of the respondents met this criterion completely, as they had the last years of their bachelor studies or were enrolled to a master program.

The questionnaire contained questions about the significance of general attributes of an employer (salary and material wealth, opportunity to participate in decisions, future viability and stability, attractiveness of location, internationality etc.) and three groups of CSR-related attributes:

- Employee responsibility
- Socio-ecological responsibility
- Governance and ethics.

Conjoint analysis with the help of Sawtooth software was chosen as the main method of data analysis to reveal the hidden preferences of respondents.

### Employee attitudes towards sustainable companies: research results

The results of conjoint analysis of the collected data showed that Russian students appreciate salary and material wealth, career opportunities, and work atmosphere. German respondents marked other attributes as the most attractive: internationality, independence and ownership as well as job security and social services. In other words, young people in Russia seek for a stable company that can provide them with a large salary, career development and friendly team and in Germany – young people are striving for an interesting job in an international team.

Figure 1 shows top ten employer characteristics represented by white pillars and lowest 3 attributes represented by grey pillars. The scale from 1 to 7 is used, where 7 means the highest importance of an attribute.

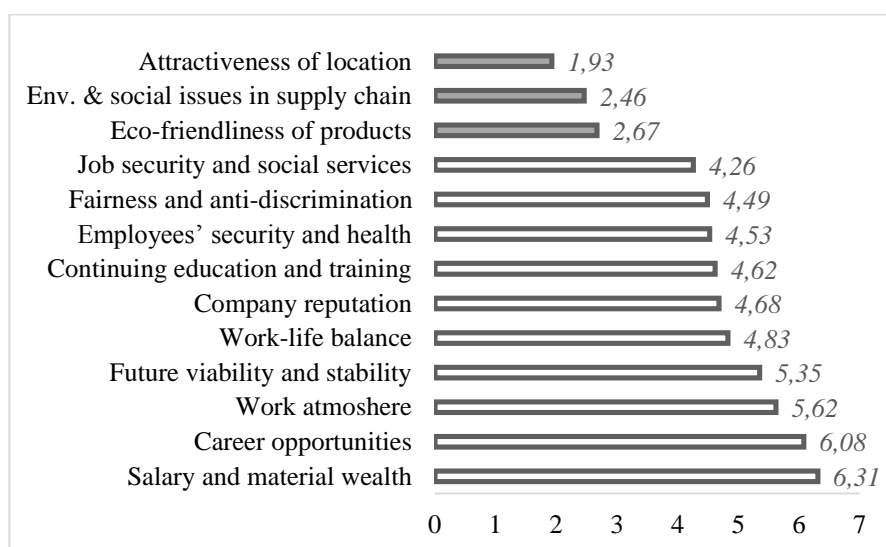


Figure 1: Conjoint analysis results: employer attributes with the highest and lowest importance for the Russian respondents

Figure 1 demonstrates that the choice of an employer by the Russian students is defined primarily by the company and workplace related attributes as well as by those characteristics of CSR that have a direct influence on the company's employees. Out of top ten attributes only four belong to the sphere of CSR, whereas out of ten attributes with the lowest importance there are seven CSR related characteristics.

### Application of research results in University teaching

At present, sustainability principles / CSR are introduced in Russia predominantly by the largest companies striving to influence their social environment. The population is expecting the state to regulate social and environmental policies of business and does not feel empowered enough to exert an influence on business. Commitment to sustainability practices is rather low among the dominant share of the population. Sustainable consumption still plays a minor role compared to the modern consumerism.

Educational system forming knowledge and influencing on beliefs and values of the younger generation has a big potential to shape the sustainable behavior of future consumers, entrepreneurs, employees and policy makers. That is why many universities across the globe committed themselves to promoting sustainability (i.e., Rohweder & Virtanen, 2008).

Introduction of sustainability issues into current educational programs should be done taking into consideration the local economic, social, and ecological problems as well as the local stereotypes, barriers and prejudices. University research should be closely linked to the challenges faced by the country and immediately reflected in the educational process. Having this in mind, the research on sustainable consumer behavior and on employee attitudes towards CSR of potential employers will form the basis for the choice of the educational content.

### Conclusion

Sustainability in Russia in its contemporary understanding can be characterized as a relatively recent phenomenon. Its dissemination is led by large Russian and international companies and by the innovative segments of consumers. The interest towards and barriers against sustainable consumer behavior was studied in one of the presented research projects. The second project was dedicated to the importance of CSR related characteristics for the employer branding. Both projects were oriented towards respondents of the student age. The results of both projects will be incorporated in planning learning outcomes, lecture assignments and contents for the course "Sustainable Marketing" at St.Petersburg State University of Economics.

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## Choices for a Day- Empathy, Sensitivity or Confidence?

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### **Abstract**

*This paper uses "The Choice School" in Kochi, Kerala as a model in inclusive education. The model looks at multiple aspects of sensitivity development in the community, empathy development among peers, and confidence development for differently challenged students. We present data, trends and anecdotal evidence for the sustainable development of the next generation.*

**Keywords:** *inclusions, sensitivity, empathy & confidence*

**Main Conference Topic:** *Education and Challenges of Teaching Professionals*

### **Introduction**

This paper begins with a brief review of the inclusion policy in schools particularly in the state of Kerala, under current constraints and judged against two criteria: appropriateness to present needs and adaptability to the needs for the future.

For the first time in Kerala a mainstream school has the sole objective of supporting the needs of children with various learning disabilities.

The school aims to redefine the existing conceptual model, and this is happening at a time when the anticipated need for the society to be empathetic and sensitive. Scenarios for the future of inclusive education are analyzed and compared, and a unique model, "The Choice Model" is proposed in which large –scale societal approach towards understanding the need is addressed.

Distinctions are a necessary evil. They exist. So, they might as well be understood. From an idealistic point of view, it is better to live in a society free from alienating labels of distinction. In reality such an option doesn't exist. The best we can do is to understand it aright. Inequality is inherent between the minority and the main stream. And this can be a blessing rather than a curse, because it can help the society to progress and respect the needs of the minority.

The word special as we all know is just euphemism for something that is considered deficient. And we find the whole notion problematic. So let us stop using the euphemism and get to the actual meaning in order to understand why we find it problematic.

The rest of the paper is organized as follows. We will talk of The Choice Model, the visionary behind this thoughtful idea, the challenges faced by the students, teachers & parents and the success stories.

### **The Choice Foundation**

The Choice Foundation is the philanthropic wing of the group, helmed by Mr. Jose Thomas whose dream, passion and commitment to give back to the community and city he grew up -his primary mission. After 27 years in the field of education the President endeavors to meet the growing demands of inclusive model. As a successful transformation leader, he is mindful of his responsibility to be inclusive in all areas concerning a school. By creating a department that focuses on the necessities of children with learning disabilities he is the bellwether of change in the state of Kerala and the country.

### **Choice Model**

Department of Health, Development and Education support HDES

The Department of HEALTH, DEVELOPMENT AND EDUCATION SUPPORT enriches the programme of education at The Choice School by bringing in inclusion across the School, from Kindergarten to Grade XII.

A team of twenty experienced personnel comprising Special Educators, Speech Therapists, Counsellors and an Art Based Therapist supports students with learning difficulties through a multi-sensory approach directed towards mastering functional life skills.

The Counselling team provides guidance for all students to understand and accept themselves in order to bring out their innate potentialities. Parents too partner with the team, thereby enabling their children to benefit greatly from the programme and achieve maximum advantage for themselves.

The first step is the admission procedure. The Vice president – Admissions meets both the parents and the student. The external assessment report is carefully studied by the HDES department. All information is recorded. An informal learning assessment is conducted by the team.

The CHOICE MODEL is founded and developed with the sole purpose of catering to the special needs of students. Firmly believing that inclusion is the most effective solution, this model caters to 89 students in the present academic year 2017-18.

It began in the year 2016, benefitting 134 students in total. The spectrum includes Down syndrome, ASD, visual and hearing impairment, ADHD and LD. Each individual receives a specially designed curriculum. A lot of effort is taken by the special educators in formulating the method and content of learning.

The school has specially designed LEARNING LABS that allow students to study the course material in a pace most suitable for comprehension. Gradually, most students integrate to the regular schooling system to develop their social skills.

It is at this juncture that the most important learning happens for the rest of the students in the class. A student learns to be empathetic and sensitive to the needs of his or her classmates. At the same time the confidence level of those who require that extra help and understanding increases. As educators we are aware that teaching empathy to students is our primary mission in a world ridden with senseless wars and meaningless communal strife. Though challenging, it's significant that we are engaged in producing not just literate but also learned, civilized, fearless and responsible individuals through empathy and compassion. In this fanatical world of fake news and building walls, we at Choice want our students to practice acceptance, tolerance and respect. It is crucial for the students to learn inclusiveness as in any given society we'll find individuals from varied backgrounds and different levels of learning capabilities.

Among other factors, the most challenging obstacle is the state of denial that parents live in. The lack of proper information and understanding of the condition prevents the majority of parents to recognize the predicament and find solutions. The graph clearly shows the ratio of identified students in each grade. But this is not all. Every day another student is found in want of help.

In her recent book TOXIC COCKTAIL, the author Barbara Demeneix writes of the environmental hazards that directly create more autistic children. She talks of endocrine, the disrupting chemical and states that in the US during the year 2001 there was 1 case of spectrum disorder out of 250. Today it is 1 in 68. Very interesting read. A conscious effort is made to explain to parents the type of food consumed is directly related to many disorders of the mind. This explains the comparative rate of occurrence in children in India and Kerala in particular.

The Choice School conducts regular orientation and workshops for parents on this topic and sensitizes them to the growing number. Our success stories are many. We bask in their achievements, however small. There is no standard measure, each to his capacity.

We wish to show you a sample of a progress report generated by the learning lab. You are looking at the team of special educators. They are qualified and equip themselves regularly to meet the varied demands. Every child is different.

This is Siddharth Murali Nair, who at the age of two and half years started losing his linguistic skills and was diagnosed with Asperger's Syndrome. He however retained a strong interest in colors and shapes and started painting as early as two years. He scored high on visual memory but struggled in language and communication skills. The Choice School provided him with a protective atmosphere and supportive teachers. Siddharth overcame many of his linguistic and social challenges. In 2016, he completed grade 10 (CBSE ) scoring a CGP of 7.7 in English, Math, Science and Painting. His mother was his pillar of support. He possesses a unique style and in 2016, Siddharth's paintings were brought out as a desktop calendar which was much appreciated. Very recently on 02

January, his collection of drawings and paintings were inaugurated at Durbar Hall Art Gallery. Titled “me, Siddarth” Reminiscences of an Asperger’s Mind, it won accolades from the public.

Let us examine the word Deficiency. What does it mean to you?

Deficiency is a measure set against a certain target. If 20/20 is considered normal it becomes the target of the benchmark, if you will, to notate whether someone has plus or minus. In this example the case is almost straight forward. It is bio physics almost like a hard science- Mathematic formulas. The room for subjective disagreement is lot less compared to measure met of intelligence.

In spite of the fact that IQ is accepted as the universal measure for someone’s “Intelligence”, there is still a large debate in academic community based on its supposed universality. People don’t have problem calling M F Hussain, Sachin Tendulkar, Vishwanath Anand or Ramanujam as intelligent. But can we all safely say that one may not be able to be even average at the others field. So what is the meaning of intelligence in that equation?

You may wonder why we are talking about all this; there is a direct connection here. Mainstream schools, regardless of how liberal they are, they all tend to focus on excellence. This is also where the Bollywood Film “Taare Zameen Par” (Stars on Earth) pandered to the usual main stream sentiment. The protagonist Ishan Avasti had to be good at painting, what if he wasn’t? He had to be good at something so that the parents feel some guilt, “Aah this child is so talented and that I didn’t pay enough attention to notice that” and cry. And the audiences cry with the parent. This is the third grade manipulative nonsense the society likes to feed on. A self-indulgent sorrow. A kind of cannibalistic attitude. Let’s say; they won’t want to let go of what makes them cry in the first place. They instead like to keep it alive and then feel bad about it.

And it is even more problematic in the main steam schools’ set up. Because, the student becomes an object for some kind of Physics experiment caught in a narrow spectrum of space and time. Schools not only expect all the students to be good at something, they should also be good at it with-in a certain point of time. The human element of the child is reduced to variables that are measured against a preset benchmark.

We state again this idea that students have to be good at something or the other is extremely problematic. Because, a lot of time they just aren’t. Children with special needs in most cases remain the same. This is the idea that the team at Choice has realized and made substantial progress towards the goal. So we can probably try all the existing, tested, psychotherapist methodologies on the child. But the mission should be the one like that of pilgrimage. Where, you remain uncertain of the purpose of your visit, but you go through it because the process in itself seems productive. Such an attitude, if nothing will at least ensure that the child’s mind is left with fewer scars.

So let us come closer to the earlier point, if deficiency is not a fixed measure that runs across the same levels for all the students what then? So one child may be able to pick the schools aid, while the other may not, would be then conclude the method failed or student failed?

Is it such a great idea to hang on to this expectation for excellence, where does the virtue emanate for this notion? We should all ask each other and ourselves if we were all good in school or college.

In a world where artificial intelligence is taking over, the need of the hour is bring more people to come and work for our children. We do have new technology and developments, but it is people who can make the change. Technology can be used to reform the way we teach. Our model aims at setting a vision, creating a strategic roadmap and motivating people to help.

At Choice our choices are very simple and direct. Empathy, Sensitivity and Confidence. In the end we wish to see this model as a forerunner and able to give our students what they deserve. In a world were all things will be equal, purpose will be the differentiator.

Our purpose is our prayer, inclusivity is our goal. As we move forward, faith is our strongest ally. We believe that faith is a passionate institution. We may encounter setbacks but we are determined not to be defeated.

When the winds of change are blowing some people build shelters and some will build windmills. In a crowded space we wish to make a loud whisper.

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Director Academics for the Choice group of schools in Kerala. She has 28 years of experience in the field of education. Represented India in ITD at Amherst, Massachusetts under the Fulbright Scholarship programme for Primary teachers in 2005. Worked as a Principal for 15 years in a leading school in Madras and is passionate about inclusive education. Her main field of interest is curriculum designing that can suit all students.

**Shalini Thomas**

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## Higher Education in Kerala: Issues and Challenges

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### Abstract

*Education is an ever evolving system and in an economy like India reforms provoke a fundamental change especially in higher education. Kerala is the most literate state in India, still we lag behind in higher education with respect to modernization and curriculum updates. Circumstances also call for greater transparency and accountability. The opportunity to reflect on the purpose of higher education, the role of colleges and universities in the new millennium, and emerging scientific research on how people learn have not been studied compositely. The impact of fundamental change from the policy level to the institutional level and to the everyday lives of college and university administrators, faculty and students have to be given in depth thought and analysis. Excellence in the fields of education, research and capability building have become the need of the hour. We need educated people who are skilled and can drive our economy forward. So where do turtlenecks arise with respect to the Kerala higher education scenario? This paper tries to analyze the issues in higher education in Kerala and the challenges that we have to conquer in order to raise a battalion of students who are capable of nation building*

**Keywords:** higher education, curriculum, investment, research, education planning

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

"Kerala's performance in the area of education is widely recognized and has been intensely researched. With the average years of schooling of population of 7.7 years, which is much above the national average (5.6 years) in 2009-10 (Agrawal 2014), the state of Kerala is recognized as one of the highly advanced states in India in education. It is one state in India which attained a high level of, if not total, literacy and near universal elementary education. Even the enrolment ratios in secondary education are considerably high. With near universal rates in school education, the degree of inequality between different social, gender and economic groups of population is negligible. However, the performance of the state in higher education is not as impressive as in case of school education, which is nevertheless, favorably comparable in many respects to the system in the rest of the country, but has not attracted the attention of many"<sup>1</sup>.

Using recent data<sup>2</sup>, this paper analyses a few important dimensions of higher education in Kerala. The overall quantitative indicators point out that the higher education in Kerala is

- positively comparable with the all India scene
- well above other southern states in some aspects
- showing rapid growth of private sector in higher education
- showing a lot of quantitative expansion in Kerala during the last few decades
- emerging as the single largest economic activity of the state
- rising expenditure on education: SDP in Kerala is very high compared to other states
- accounting for more than one third of the total revenue expenditure of the state
- one of the biggest employers in the state: Teachers constitute nearly 18% of total employment in the organized sector.

The Questions to be addressed are: Whether such huge investments have really yielded commendable returns in terms of economic development and if not, what are the reasons for the unproductiveness of the system?

### Theoretical background

According to Schultz's theory, as the stock of human capital increases in response to ideological and political developments, expected returns on investment in physical capital increase, and rising investment increases the stock of physical capital. As the stocks of human and physical capital increase, national income rises. Anecdotal data suggest that economic development has been linked to literacy and schooling since the 16th century, but comprehensive data on national levels of education are only available for a subset of the more educated countries since the mid-19th century.

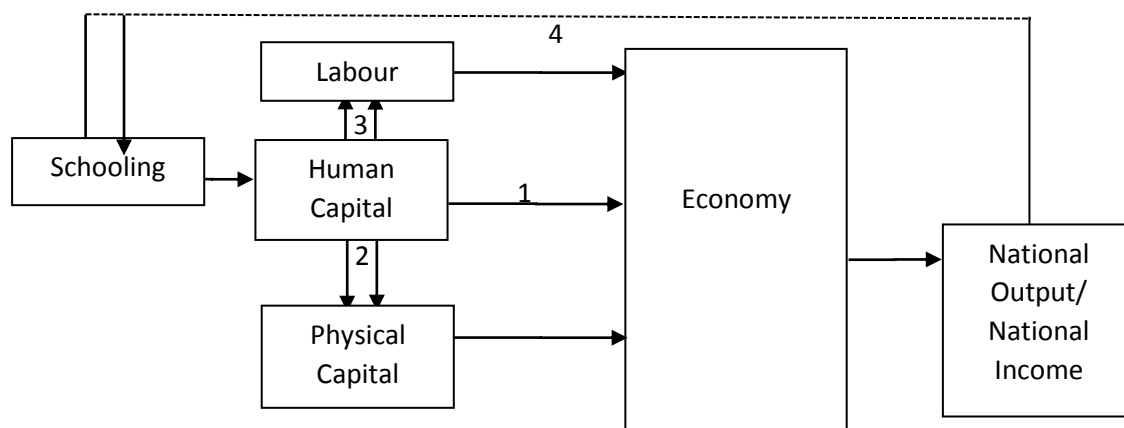
### Methodology for Estimating the Returns to Education

If Schultz's theory that human capital and physical capital are complementary is correct, then education has both direct and indirect effects on national income, and an estimate of the returns to investment in education should take both into account. The standard methodologies used to estimate the returns to education include only the direct effect on workers' salaries. Estimation of the larger returns to the nation requires a model of the effect of education on national income that includes both the direct and the indirect effects.

Mankiw, Romer, and Weil [1992] created a model of national income (Y) that is consistent with Schultz's theory of capital-skill complementarity. This model includes three factors of production, human capital (H), physical capital (K), and labor (L):

$$(1) Y = K^\alpha H^\beta L^{1-\alpha-\beta}$$

The model is a Cobb-Douglas production function, similar to the one Cobb and Douglas created in the 1920s, but with an additional factor for human capital. This model intrinsically includes a direct and two indirect effects for each factor of production [Breton, 2012]. In the case of human capital, it has a direct effect on the salary received by the educated worker and indirect effects on the productivity of physical capital and on the productivity of other workers (labor). The Figure shows the dynamics of this model in response to an increase in schooling.



Increase in schooling increases the nation's human capital. Human capital then has a direct effect on national income (single line) and indirect effects on the productivity of the other two factors (the dotted and double lines). The figure also shows a third indirect effect (labeled "4"), which is the positive feedback that rising income has on the society's demand for education.

This model simulates the effect on physical capital that follows a national decision to increase the level of schooling. After a lag the increase in schooling increases the stock of human capital of the work force, which raises the marginal productivity of physical capital and the expected return on investment. Private investors then increase their investment in physical capital, which has a direct effect on national income and an indirect effect on the productivity of human capital and labor. As these various effects work their way through the economy, economic output rises and national income increases along with it.

Conveniently, the marginal product of human capital in this model (i.e., the increase in national income associated with an increase in human capital) provides an estimate of the full macro marginal return on investment in schooling, including the direct and the two indirect effects:

$$(2) \text{ MPH} = \delta Y / \delta H = \beta Y / H$$

Given an estimate of  $\beta$  for the model in equation (1) and estimates of GDP/adult and human capital/adult, the marginal return on investment in schooling can be estimated for any country. In addition, when combined with an estimate of  $\alpha$  and information on the direct marginal effect of education on salaries from micro studies, the two indirect effects of human capital can be estimated [Breton, 2012].

### Kerala's Education System

The educational system of Kerala has evolved in tune with the commercialization of agriculture and trade. Social reform movements, missionary activities and peasants and workers' movements also contributed much to education. This led to setting up of educational institutions in large numbers. The government also started institutions of their own. However, the concentration was on general education rather than on vocational or technical education. This can be attributed to limited segments of white collar job markets within the state and outside.

Nothing was done to link education with the production system. Thus mental labor was segregated as a separate category from physical labor. This led to a dichotomy in Kerala with white collar jobs getting an aura of excellence and neglect/reluctance for manual labor.

The results of such a development led to the following:

- Lack of vocational training and long years of schooling led to de-skilling of children.
- Students fail to master the traditional or modern skills.
- This has resulted in the 'paradox of scarcity of labor'.
- Migrant laborers from neighboring states started dominating the manual labor requirements of Kerala.

Higher education system in Kerala is very much delinked from economy and society. The curriculum fails to recognize the needs of Kerala economy. Educational institution and industry interaction is almost nil and the emphasis only is still on traditional courses in arts and science subjects. The failure of the public education to add new specializations to existing courses and to start new courses in emerging areas has led to migration of students to other states.

The teacher centered pedagogy of learning also led to a lot of damage to the education system in Kerala. What is more, the quality standards have been coming down steeply at all levels of education in recent times. Now if we look at the literacy levels, literacy rates among scheduled castes (69.4 %) and scheduled tribes (48.6%) continues to lag considerably behind the literacy rates for the total population of the state (89.8%).

The study conducted by NCERT comes to the conclusion that serious measures are needed to improve the teaching/learning process in order to enhance learner achievements. While the drop-out rates are very low in primary schools, the same increase in the ninth and the tenth standards in Kerala. This is particularly true about SC/ST students. The percentage of students going for higher education to the students in the secondary/higher secondary schools was only 13.8% for Kerala against 22.9% for the country. In this respect, Kerala's rank is only 24 out of the 26 states in India. Percentage of students in the degree courses to the students in Plus 2 classes was only 26% as against 49.2% for the country as whole. In this respect also, Kerala's rank was 24. However, the percentage of students going for post graduate courses to students studying in the degree classes was marginally higher in Kerala (11.8%) than in the country as a whole (9.6%).

### Technical Education

The technical education in Kerala is highly undernourished. The absence of all India level institution like the IITs, Central Universities, research institutions etc. augments this problem. The intake capacity in graduate engineering courses has not kept pace with the demand from eligible candidates. The percentage of seats in engineering colleges per thousand Plus 2 students who hold a first class was only 23.0 as against 27.1 in the country. In this respect, Kerala lagged far behind the southern states of Karnataka, Tamil Nadu and Andhra Pradesh. The high drop-

out rate in technical education is a highly distressing feature. Another area where the State lags behind is medical and para-medical education.

### **Research**

- The educational institutions have always neglected generation of ideas. Hence research was never of importance and the main problems are
- inadequate opportunities for research
- low quality and the irrelevance of the research
- repetitive nature of research leading to lack of generation of new ideas
- lack of a congenial atmosphere for research
- absence of any all India level institutions like the Indian Institute of Technology, Central Universities, research institutions etc. with a capacity to develop strong linkages with the local economies and also educational institutions
- that the supply of courses in Kerala is not influenced by current or future demand
- That there is very little co-ordination among the universities themselves and with the government
- All these are due to the absence of educational planning in the state.

### **Financial Resources**

Kerala today requires large amount of funds for improvement of quality at all levels. Share of education in total government expenditure had been coming down steadily from the Fifth Five Year Plan onwards. Since then, expenditure on education at constant prices in Kerala has shown one of the lowest growth rates among states. In fact, the meagre annual growth rate of 3.2 per cent recorded during the 1974-75 - 84-85 period dipped to 1.1 per cent during the subsequent period of 1985-86 to 1991-92.

It is often believed that the slow growth in Kerala economy is due to the higher expenditure on social sectors. This view has no empirical or theoretical support. One has to understand that the spurt in the school education system is the reason for the demand hike in higher education system. The history of developed economies also tells the same tale. However, in Kerala these signals are being neglected.

There seems to be a compartmentalized thinking in all discussions in the State on cost recovery in education. While there is a case for higher cost recovery from those who can afford to pay, this should not be seen in isolation from the need to provide scholarships and freeships to the financially deprived sections. This needed to be linked with the method for identifying income categories. Only if we could identify the income categories correctly the financial benefits for acquiring higher education will trickle down into the community.

### **Results and Conclusion**

If we need good students who are capable of building a nation, we need good investment in education sector. When we talk about restructuring it simply doesn't mean we should jump into autonomous system in universities and resultant army of autonomous colleges. It might be adding fuel to the already existing chaos. Restructuring should go hand in hand with the education planning and investment. Comparing the GSDP and investment on education the indirect effect of education on the economic growth is highly significant. Hence to tap the human resource potential governments should think of futuristic investments in education.

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## Impact of Haritha Vidyalayam (Green School) Project on Environmental Awareness of Upper Primary School Students of Kerala

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### Abstract

*Environmental awareness represents first and elementary level of consciousness towards surroundings. Environmental awareness is that which provides power and understanding to take decisions individually and collectively and initiate actions for social, cultural and economic survival, growth and development and for conservation of natural resources. The green approach to school provides remarkable benefits including ranking as a mechanism for learning, a leader for sustainability and accommodating learning and teaching needs. It is preparing students to critical and creative thinkers who are confident to champion of sustainability of the world and its environment. Man becomes a potent factor in modifying the environment is at a place up setting natures balance endangering their own existence. The awareness of various environmental issues and problems gives value guidance for our natural resources and in our natural affairs. It offers excellent solutions to most of our social, natural and political affairs. Environmental awareness by its nature entails a corresponding and constant value system-one that is pro-life in that it emphasizes, among other things, support to life rather than threatening it. It also provides an insight in to the basic interdependence of people with their environment.*

**Keywords:** Haritha Vidhyalayam Project, environmental awareness, creative thinking

**Main Conference Topic:** Education and Challenges of Teaching Professionals

### Introduction

Education is the most powerful instrument that can be used for desirable changes in social, economic, cultural and political sphere of life of the people. It is a process of continual adjustment of one to oneself, to society and to his environment. Education makes one sensitive to one's surroundings, enables one to cherish values on life and inculcates a catholicity of outlook. It promotes self-reliance and is self-supporting.

Man's progress highly depends upon his education which helps in uprooting blind beliefs, conventions and transplanting modern and scientific way of thinking and doing. Also it stands for developing physical, intellectual, moral and spiritual powers. It is the part and parcel of entire developmental process. The best dreams for a bright future can be blossomed through effective education. Innovations in fields are essential for the emergence of progressive ideas. Innovations in education are really the innovations molding a nation will brilliant goals of prosperity.

Education is the enrichment of human knowledge and experience. The right type of information removes chaos and tensions in the world and above all help an individual to satisfy his physical needs. Education needed for every human being not only to become a scholar and literature but also lead a better and happier way of life. Education has always been regarded in India as a source of illuminations and power which transforms and enables our nature by progressive and harmonious development of our Physical, Mental, Intellectual and Spiritual powers and facilities.

Environmental education is a kind of education which will seeks to make pupils fully aware of the problems connected with their environment. So that they will be able to take these problems with a sense of responsibility and with the skills which enables them to contribute their community. The awareness of environmental problem is a social awareness; such problem is solved through collective action aimed at crediting the social and economic cause of degradation of human environment. This can be done by inculcating the impressionable minds of children, and awareness about the different types of environmental destruction occurring around them, developing a sense of responsibility towards nature and its various life forms. A suitably oriented system of education can facilitate and promote this keeping in mind the importance of educating the students about environmental destruction and its protection.

As the investigator strongly feels that education has a vital role in preventing and solving environmental problems and conducts an investigation in to the awareness about the source aspects of environmental problem among school students. The investigator wanted to assess the initiatives of environmental awareness of school students of Kerala. There are many studies to indicate environmental awareness in students but no studies have been found in relation to Haritha Vidhyalayam project and its role in inculcating environmental awareness and protection. Hence the study has its own significance.

It is a project done in the school students of Kerala State under the guidance of Mathrubhumi SEED. Here the investigator explores the impact of the project on the environmental awareness of school students of Kerala. Hence the study is entitled as the "IMPACT OF HARITHA VIDYALAYAM (GREEN SCHOOL) PROJECT ON ENVIRONMENTAL AWARENESS OF UPPER PRIMARY SCHOOL STUDENTS OF KERALA".

### Objectives

- ❖ To analyze the Environmental Awareness of Upper Primary School Students of Kerala.
- ❖ To compare the Environmental Awareness scores of Upper Primary Students in Haritha Vidhyalayam (Green School) based on
  - a. Participation
  - b. Gender
  - c. Locale
  - d. Type of Management
- ❖ To compare the Environmental Awareness scores of Upper Primary students of Normal Schools (Schools which are not participating in Haritha Vidhyalayam Project) based on
  - a. Gender
  - b. Locale
  - c. Type of Management
- ❖ To find out the significant difference between the Environmental Awareness of Haritha Vidhyalayam and Normal School Students (School not participating in Haritha Vidhyalayam Project).

### Methodology

The present study was initiated to assess the impact of Haritha Vidhyalayam project on the Environmental Awareness of Upper Primary School Students of Kerala. The Environmental Awareness among upper primary school pupils were also measured and analyzed to find out the relation between the environmental awareness of participant students and non participant students of Haritha Vidhyalayam Project. The subsamples were also compare for these variable. The necessitated collection of the relevant data, the essential processing of the same, so that the objectives of the study are well brought out.

METHOD: The investigator adopted a Normative Survey Method for conducting the survey.

TOOL: The tool for the present study

- Environmental Awareness test

SAMPLE: The investigator selected a representative sample by stratified random sampling method. The investigator selected a sample size of 350 students of 5 schools in Kerala. The present study also indicates 5 schools other than haritha Vidhyalayam Project for a comparative study.

### Variables:

Independent Variable: Haritha Vidhyalayam Project.

Dependent Variables: Environmental Awareness

**Statistical Techniques:** The techniques used for statistical analysis includes

1. Mean
2. Standard Deviation

3. T-test
4. Correlation

## Results And Discussion

### 1. ANALYSIS OF ENVIRONMENTAL AWARENESS OF UPPER PRIMARY SCHOOL STUDENTS AND COMPARISON OF RELEVANT SUB-SAMPLES WITH RESPECT TO THEIR SCORES

In this part of analysis, an attempt is made to examine the Environmental Awareness of Upper Primary school students of Kerala, considering both total sample and sub-samples based on the pupil's participation in Haritha Vidhyalayam.

### Environmental Awareness Of School Students Of Kerala

The important statistical indices such as Mean (M) and Standard Deviation (SD) of Environmental Awareness scores were computed and presented in Table.1

Table.1.1 : Statistical Indices Relating to Environmental Awareness of School Pupils

Statistical Indices	No.of Students [N=350]
Mean	15.74
Standard Deviation	5.85

### Classification Of The Total Sample In To High, Average and Low Environmental Awareness

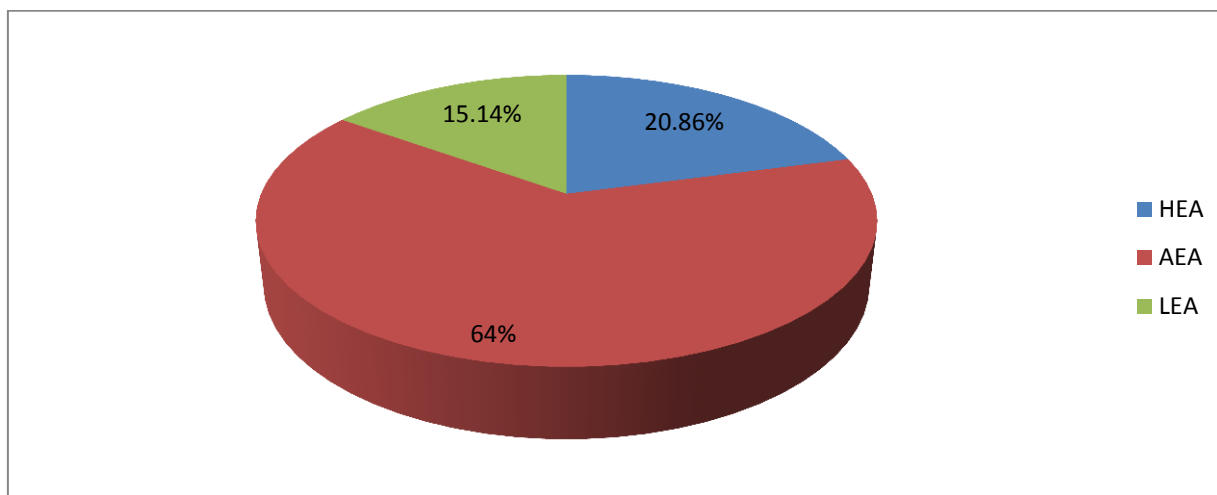
Based on the scores obtained on the awareness test, the total sample was classified in to High (above  $M+\sigma$ ). Average (between  $M+\sigma$  and  $M-\sigma$ ), and low (below  $M-\sigma$ ) Environmental Groups. The distribution of the three levels of Environmental Awareness, are presented in Table 2.

Table 1.2: Classification of the Total Sample in to High, Average and Low Environmental Awareness

Sl.No:	Levels of Environmental Awareness	Subjects	
		No.	Percentage
1	High Environmental Experience Groups (Above $M+\sigma$ , i.e, Above 21.59)	73	20.86
2	Average Environmental Awareness Group (Between $M+\sigma$ and $M-\sigma$ . I.e, between 29.59 and 9.89)	224	64
3	Low Environmental Experience Group (Below $M-\sigma$ , i.e, below 9.89)	53	15.14
	Total	350	100

Table 1.2 shows that only 20.86% of the Upper Primary School Pupils under the study possess High Environmental Awareness. Majority of the students fall in the Average (64%) and a smaller portion (15.14%) fall in Low Awareness levels. This shows the secondary pupils of Kerala, with the exception of a few, do not have a high environmental awareness. The distribution of the subjects in to the three Environmental Awareness levels viz; the High

Environmental Awareness (HEA), the Average Environmental Awareness (AEA), and the Low Environmental Awareness (LEA) levels are depicted diagrammatically in the Figure 1.



### Comparison of Environmental Awareness of the Subsamples

In this section of analysis is based on the scores obtained in the awareness test. The sub samples were compared using the test of significance of the difference between the means and critical ratios were found.

A) Comparison of Environmental Awareness of the sub samples based on the Haritha Vidhyalayam Project.

Relationship between the scores based on Haraitha Vidhyalayam project was done to find out whether there exists significant difference between these two groups. The details of the comparison with respect to these groups are presented in Table 1.3.

Table.1.3: Data and Results of the Test of Significance of the difference between Mean of Environmental Awareness Scores of Haritha Vidhyalayam Project and Non-Haritha Vidhyalayam Project.

Environmental Education Programme	N	Mean	SD	CR	Level of Significance
Haritha Vidhyalayam Project	175	20.93	4.07	21.32	0.01
Non-Haritha Vidhyalayam Project	175	11.37	3.84		

From the above table 1.3, it seems that the mean scores of Haritha Vidhyalayam Project and Non-Haritha Vidhyalayam Project group of students are 20.49 and 11.37 with Standard Deviation (SD) 4.07 and 3.84 respectively. This means that, in this sample the mean difference in scores of Haritha Vidhyalayam and Non-Haritha Vidhyalayam group of students are statistically significant in the whole population. Hence it is clear that the participation in the Haritha Vidhyalayam Project create high environmental awareness among students.

The graphical representation of mean scores of pupils participating in Haritha Vidhyalayam project and those do not participate in Haritha Vidhyalayam project are given in Figure 2.

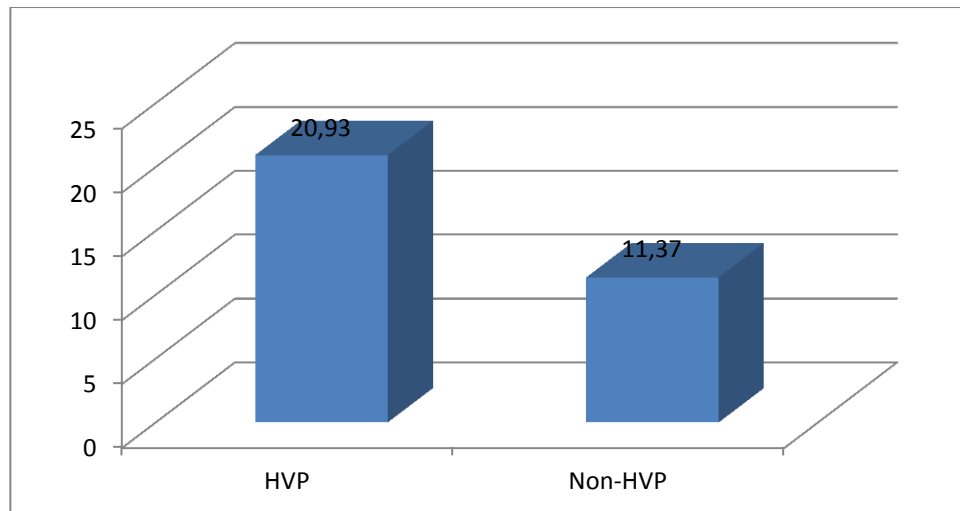


Figure 2: Bar diagram showing the mean environmental awareness scores of participant and non-participants of Haritha Vidhyalayam project

### Comparison of Environmental Awareness Scores of Subsamples based on Gender

In this part of analysis, it is aimed to find out whether there is significant difference exists between male and female students. The data were computed for mean and standard deviation, and results presented in Table 1.4

Table 1.4: Data and results of the test of significance of the difference between mean of Environmental Awareness scores of Male and Female Students

Class	N	Mean	SD	CR	Level of Significance
Male	74	20.93	4.07	2.43	0.05
Female	101	19.47	3.73		

From the table 1.4, it is revealed that, the mean scores of male and female students are 20.93 and 19.47 with standard deviations 4.07 and 3.73 respectively. It shows that the male and female students are statistically differ in their environmental awareness in the [ Critical Ratio=2.43]. it can be concluded that gender is an influencing factor on the environmental awareness. The graphical representation of mean scores of male and female students are given below.

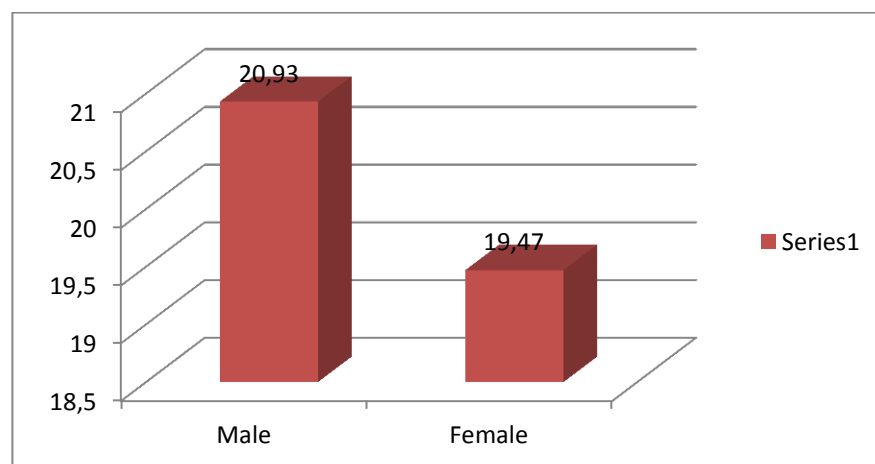


Figure 3: Bar diagram showing the mean scores of environmental awareness of Male and Female students

### Comparison of Environmental Awareness Scores of Students based on the sub sample locale

Comparison of scores based on the locality[rural and urban] was done to find out whether there exists any significant difference in environmental awareness based on the locale and data were computed and tested for significance using t-test are presented in the Table 1.5

Table 1.5 Data and Results of test of significance difference between mean scores of Environmental Awareness based on the subsample Locale

Locale	N	Mean	SD	CR	Level of Significance
Rural	58	20.01	3.96	0.35	NS*
Urban	117	19.72	4.12		

\*Not Significant

From the table 1.5, it is clear revealed that the mean scores of Rural and Urban students are 20.01 and 19.72 with standard deviations 3.96 and 4.12 respectively. This shows that there is no significant difference in environmental awareness test of the subsamples based on locale [Critical ratio=0.35]. Hence it is evident that the locale is not an influencing factor for determining the environmental awareness of students. The graphical representation of the mean scores of rural and urban pupils are given in the Figure.4

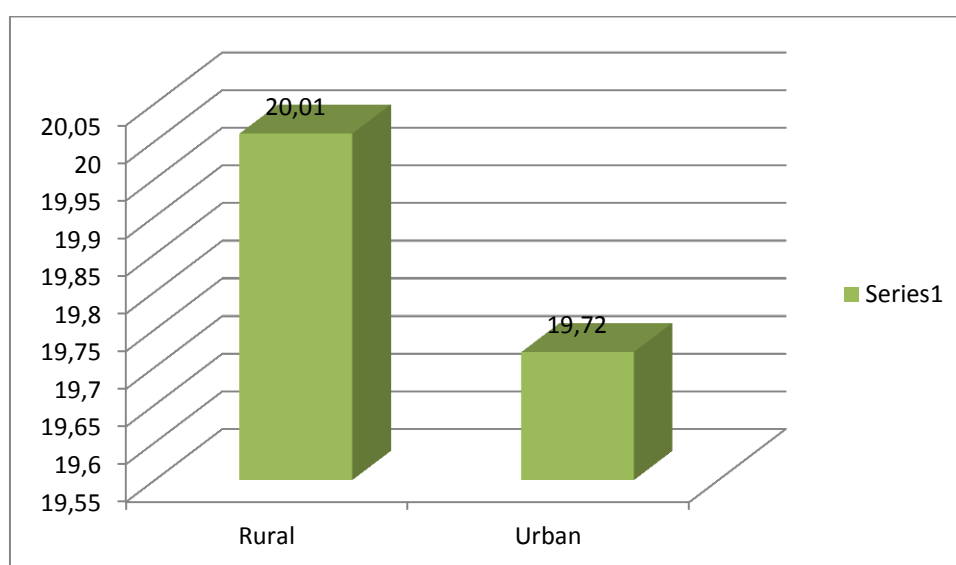


Figure 4: Bar diagram showing the mean scores of environmental awareness of rural and urban school students

### Comparison of Environmental Awareness Scores Based on Type of Management [Government and Aided]

Comparison of Environmental Awareness scores based on Type of Management [Government and Aided School Students] was done to find out whether there exists any significant difference between the two groups. The data and results are presented in the table 1.6.

Table 1.6 Data and Results of the test of significance of the difference between mean environmental awareness scores of Government and Aided school students

Management	N	Mean	SD	CR	Level of Significance
Government	58	20.31	4.33	0.5	NS*

Aided	117	20	3.73		
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\*Not Significant

From Table 1.6 show that the mean scores of Government and Aided pupils are 20.31 and 20 with standard deviation 4.33 and 3.73 respectively. This shows that the two groups of students government and aided school students are similar in their ideas of environmental awareness. Hence it is evident that the type of management does not influence students environmental awareness. The graphical representation of the mean scores of government and aided school pupils are given in the Figure 5.

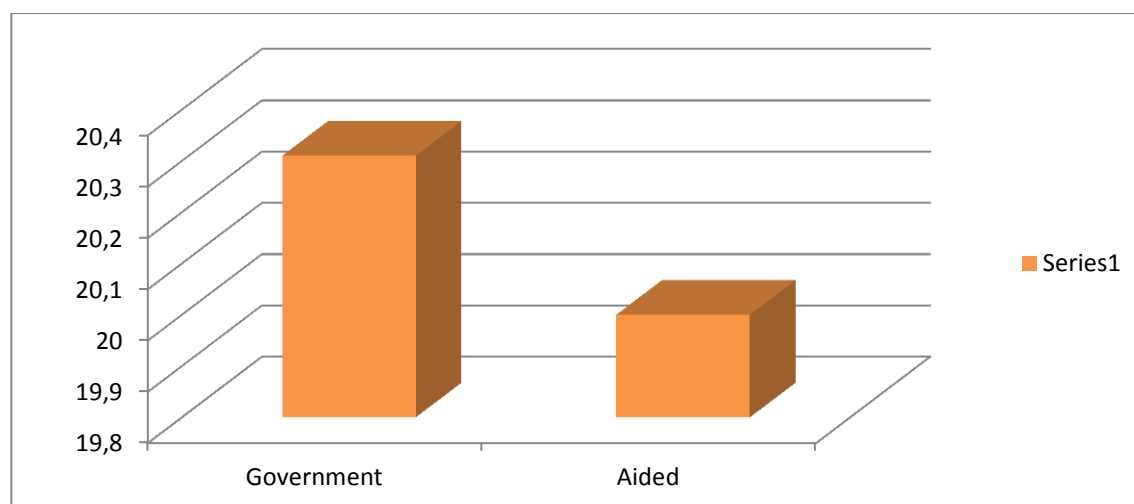


Figure 5: The bar diagram showing the mean of environmental awareness scores of government and aided school pupils

### Comparison Of Environmental Awareness Scores Of The Sub Sample Based On Non Participating Schoolon Haritha Vidhyalayam Project

In this section of analysis is aimed to find out whether there is any significant difference exists between the scores obtained in the awareness test. The subsamples were compared by using test of significance.

### Comparison of Environmental Awareness Scores based on Gender

In this part of analysis, it is aimed to find out whether there exists any significant difference between environmental scores of students based on the sub sample gender. The data were analyzed using t-test and results presented in Table 2.1

Table 2.1 Data and results of the test of Significance Difference in the mean scores of Environmental Awareness test of Male and female students in Normal School

Class	N	Mean	SD	CR	Level of Significance
Male	72	11.24	3.97	0.37	NS*
Female	103	11.43	3.79		

\*Not Significant

From the Table 2.1, it is showed that the mean scores of male and female students are 11.24 and 11.43 with standard deviations 3.97 and 3.79 respectively. It is revealed that both male and female students are performing similar, ie, two groups are statistically not significant, ie, CR=0.37<0.05 level of significance. Hence gender has no influence on the environmental awareness.

### Comparison of Environmental Awareness Scores of Students based on Locale

In this part of analysis the investigator aimed to find out the environmental awareness scores of students based on the sub sample locale – rural and urban. The data were computed and tested for significance by using t-test. The data and results of comparison are presented in Table 2.2

Table 2.2 Data and Results of the test of significant difference in the environmental awareness scores of Rural and Urban students in Normal School

Locale	N	Mean	SD	CR	Level of Significance
Rural	80	10.67	3.98	3.41	0.01
Urban	95	12	3.12		

From the Table 2.2 it is showed that the mean scores of Rural and Urban students are 10.67 and 12 with standard deviations 3.98 and 3.12 respectively. This revealed that there is a significant difference in the mean scores of environmental experience exists between the sub samples based on locale [Critical Ratio=3.41]. Hence it is evident that the locale is an influencing factor for determining the environmental awareness of the students.

### Comparison of Environmental Awareness Scores based on type of Management [Government and Aided]

Comparison scores based on Management[Government and Aided] were done to find out whether there exists any significant difference between these groups. The details of the significant difference done with respect to these groups are presented in Table 2.3

Table 2.3 Data and Results of significance of difference between mean environmental awareness scores of Government and Aided school students

Management	N	Mean	SD	CR	Level of Significance
Government	80	10.47	3.53	2.77	0.01
Aided	95	12.08	3.98		

Table 2.3 shows that the mean scores of Government and Aided school students are 10.47 and 12.08 with standard deviation 3.53 and 3.98 respectively. This shows that there is significant difference in the mean scores of environmental awareness exists between the sub samples based on the Type of management [Critical Ratio=2.77]. Hence it is evident that type of management is an influencing factor for determining environmental awareness of students.

### Analysis Of The Test Of Significant Difference Between The Environmental Awareness Of Harithavidhyalayam Project And Normal School Students

In order to find out whether there exist any significant difference between these groups. The details of the comparison done with respect to these groups are presented in Table 3.1.

Environmental Awareness Group	N	Mean	SD	CR	Level of Significance
Haritha Vidhyalayam Project Students	175	20.11	3.94	21.32	0.01
Normal School Students	175	11.37	3.84		

The obtained 't' value is 21.32, and is greater than the table value of 0.01 level of significance. So it may be concluded that there is High significant difference between Haritha Vidhyalayam Project and Normal School students. It is significant at 0.01 levels.

## Environmental Awareness: Major Findings

### Findings 1

Majority of the upper primary pupils have high environmental awareness; they possess high awareness about the different aspect of the environment.

The above finding is arrived on the basis of statistical measures.

Classification of the secondary pupils under study in to three groups viz. High, Medium and Low based on the Arithmetic Mean [ $M=15.74$ ] and Standard Deviations [ $SD=5.85$ ], showed only a small proportion [20.86%] of the subjects fall in the high environmental awareness group.

## Comparison Of Sub Samples With Respect To Environmental Awareness

### Findings 2

1. Comparison of Participants and Non-Participants group pupils in Haritha Vidhyalayam project revealed that there existed significant difference between these two groups with respect to their environmental awareness [ $CR=21.32$ ]. Vide Table 1.3. High mean value obtained by participants of Haritha Vidhyalayam Project Students (20.93) indicate that they have more environmental awareness when compared to the non-participants of Haritha Vidhyalayam project with mean Score 11.37
2. Comparison of male and female students showed that there existed significant difference between these two groups with respect to environmental awareness [ $CR=2.43$ ]. Vide Table 1.4. There is only a slight difference in the mean scores obtained by the male and female pupils and the mean environmental awareness score is slightly high for male pupils when compared to the female pupils [20.93 and 19.47 respectively].
3. Comparison of rural and urban school pupils revealed that there was no significant difference exists between these two groups [ $CR=0.35$ ]. Vide Table 1.5. There is only slight difference in the mean score obtained by the rural and urban school pupils and the mean environmental awareness scores are slightly high for rural school pupils when compared to the urban school pupils [20.01 and 19.72]
4. Comparison of subsamples based on the type of management revealed that there are no significant difference exists between Government and Aided School pupils with respect to their environmental awareness [ $CR=0.5$ ]. Vide Table 1.6. There is only slight difference in the mean score obtained by the Government and Aided school pupils and the mean environmental awareness score is slightly high for government school pupils when compared to the aided school pupils [20.31 and 20 respectively].

## Findings of The Study Based On The Comparison of Environmental Awareness Scores Of The Sub Sample Based On Non Participating Schoolon Haritha Vidhyalayam Project

### Findings 3

1. Comparison of male and female students showed that there were no significant difference between these two groups with respect to their environmental awareness [ $CR=0.37$ ]. Vide Table 2.1. There were only slight difference in the mean scores obtained by the male and female pupils and the mean environmental awareness score is slightly high for female pupils when compared to male pupils [1.43 and 11.24 respectively].
2. Comparison of rural and urban school pupils revealed that significant difference exist between rural and urban pupils with respect to their environmental awareness [ $CR=3.41$ ]. Vide Table 2.2. The high mean score of environmental awareness obtained by the urban pupils (12) compared to the rural school pupils (10.67) indicate that the urban school pupils are more exposed to different aspects of environmental awareness.
3. Comparison of sub samples based on the type of Management revealed that there were a significant difference exists between Government and Aided school pupils with respect to their environmental awareness [ $CR=2.77$ ]. The high mean score of environmental awareness score was obtained by the aided

school pupils (10.08) compared to the Government school pupils (10.47) indicate that the Aided school pupils were more exposed to different aspects of environment. Vide Table 2.3

### **Relationship of Test of Significant Difference Between The Environmental Awareness Of Haritha Vidhyalayam Project And Normal School Students**

#### **Findings 4**

The obtained value of t-test is 21.32 is greater than of 2.25. So it may be concluded that there is high significant difference exists between Haritha Vidhyalayam project and Normal school students. It is significant at 0.01 levels.

#### **Implications of the Study**

- The findings of the study have the attention of pupils to the significance of supporting green initiatives in the school. They need to understand that Haritha Vidhyalayam programme carries a most important mission to educate the next generation of youngsters to build a better world for the future by protecting its environment.
- The Normal school should be participated in Haritha Vidhyalayam project it will promote the students to get a good environmental practices and maintenance the environmental resources.
- The Haritha Vidhyalayam programme is to get the students involved by offering an environmental program in the school curriculum. Students can be directed to developing their love for earth and nature. Environmental projects such as planting trees, starting a vegetable garden, raising a small animal farm or constructing a nature trail are meaningful activities to get them started. It is important to educate children at any early age to understand that Haritha Vidhyalayam programme is not for saving money but for saving natural resources.
- The local school that make decisions concerning about Haritha Vidhyalayam Programme it helps to understand the pupil's basic knowledge and skills for creating and sustaining environmental activities.

### **Conclusion**

From the above analysis and the discussion, it is found that the Haritha Vidyalayam Project have influenced much in environmental awareness of students those who have participants of haritha vidyalam project than the Non-Haritha Vidyalam Project students. Haritha vidyalayam Project have a great impact among the participant students which leads them as a creative thinker and which helps to develop their co-operation among them and which help to develop their leadership qualities and also they gain confidence.

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## Innovative Drivers Shaping the Future of Global Economy

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### Abstract

*The purpose of this article is to examine the contemporary developments of the global innovative trends and investigate the most perspective digital technologies crucial for international companies. The paper focus is on future trends of innovative technologies by providing a brief literature review in the fields of innovations; key assumptions, expectations and uncertainties about the future are re-evaluated. The author used the example of augmented reality expansion and development as one of the most promising global trends. Survey methodology was applied to evaluate the potential of augmented reality (AR) application using one of the most promising international industry adopters: the tourism industry.*

**Keywords:** global economy, global digital trends, innovations, tourism industry, augmented reality

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

One of the biggest challenges for international business involves capabilities to respond and adapt to the increasing pace of changes in the modern global economy and hence the frame and basis of competition (McKinsey, 2010). A critical question in today's world is how to stimulate global, sustainable, and equitable growth. Addressing this question is imperative to driving long-term economic value, enabling individuals to improve their lives and ensuring a healthy future for the global community (Baker, 2015).

Since the recognition in the 1990's of the relationship between technological progress, innovation and economic performance, investment in research and development (R&D) has grown rapidly, along with a widening of innovation activity across many sectors of the economy (OECD, 2000). Innovation could be defined as a prerequisite for global and local economic development. It is the application of advances in technology, in conjunction with entrepreneurship and innovative approaches to the creation and delivery of goods and services, which translates scientific and technological advances into more productive economic activity (OECD, 2007). Gartner, a well-known agency for technological trends, points out the three important trends to observe in the future: Artificial Intelligence, Blockchain and Augmented Reality (Panetta, 2017). Digitalization is also one of the current trends which is reshaping many industries (Kostin, 2016). Thanks to digitalization the concept of Big Data is now already very much engraved in every digital marketing campaign.

Tourism is one of the greatest global industries, improving according to the continuous changes in tourism trends and consumer preferences. It is this need to change that makes the concept of innovation a vital concern for tourism firms of all sizes – they need to stand out from the intense competition with successful and profitable operations (Tounta, 2015). The author believes that Artificial Intelligence, Blockchain, continuous digitalization, Big Data and augmented reality applications are going to be the critical drivers shaping the future of the global economy and the tourism industry especially. The following contributions are made: the main drivers for global economic development are addressed. The potential of the most promising technologies of Blockchain, Artificial Intelligence, digitalization, Big Data and augmented reality are discussed. Using the example of the global tourism industry the augmented reality application adoption potential for the European and Russian market is investigated. The outcomes of the study are presented in the results section followed by the relevant conclusions.

### Theoretical Background

The objective of this section is to lay the theoretical foundation for further analysis of the selected global trends in the following section. It defines and provides a relevant overview of the most promising innovative technologies critical to the development of international business and global economy.

*Artificial Intelligence (AI)*

Artificial Intelligence (AI) describes multiple technologies that together can sense their environment, comprehend, learn, predict and act accordingly (Rao, Verweij & Cameron, 2017).

It includes deep learning, neural networks and natural-language processing. This results in three capabilities, i.e. computers can:

- 1) perceive the world and collect data,
- 2) analyse and understand the information collected, and
- 3) make informed decisions and provide guidance based on the analysis in an independent way.

Artificial intelligence provides for learning from experience and changing processing and behavioural patterns accordingly.

#### *Blockchain*

Blockchain can be described as “a shared, distributed, decentralized and tokenized ledger”. This means that in a Blockchain world, every value-exchange transaction would have a digital record. I.e., every transaction could be identified and validated (Iansiti & Lakhani, 2017). Depending on the level of granted access, the same information is available to all the interested parties. This makes value transactions very transparent and trustworthy, bringing security to transactions that otherwise would not be trustworthy (Cearley, 2017b).

#### *Digitalization and Big Data*

Digitalization is the mixing of virtual technologies with cutting-edge progress into everyday lifestyles through the digitalization of everything that can be digitized. For businesses, digitalization is the way toward moving to an advanced business through the use of digital technologies by changing the plan of action, providing new revenue and value-producing opportunities. According to Gartner, “Digitization is the process of changing from analog to digital form.” (CIO, 2017).

“Big data” deals with the dynamic, large and disparate volume of data which has been created by different parties as people or tools and machines. With the help of new, innovative and scalable technology, it collects, hosts and analyses an enormous amount of data to derive business insights in the field of consumer, risk, profit, performance, productivity management and extended shareholder value. It is typically characterized by the volume, variety, velocity and veracity of utilized data (EY, 2014, p. 2).

#### *Augmented reality*

Augmented Reality (AR) overlays the real world with computer-generated graphics, texts or images. It overlaps the real and the virtual worlds and hence allows users to take advantage of simultaneous use of the information. It reduces the gap that exists when using different information channels separately. It enables humans to absorb information faster and more accurately, preventing mistakes, distractions and enhancing efficiency (Porter & Heppelmann, 2017).

### **Analysis of Selected Global Trends**

*Artificial Intelligence* has significant potential for international business. Experts (Cearley et al., 2017a) state in their findings that “the ability to use Artificial Intelligence to enhance decision making, reinvent business models and ecosystems, and remake the customer experience will drive the payoff for digital initiatives through 2025”. Gartner indicated a 5 time increase of inquiry calls concerning Artificial Intelligence in 2016 (Cearley et al, 2017a). According to McKinsey estimates, the global technical companies have already invested about 20\$ billion in the development of Artificial Intelligence (Bughin et al, 2017). It also can be observed, that there is an enormous interest in start-ups with business models on Artificial Intelligence (Cearley et al, 2017a).

Nevertheless, Artificial Intelligence is still at the very beginning of its development potential. Looking at the Gartner Hype Cycle, it will take at least 10 years until Artificial Intelligence reaches the plateau of productivity (Gartner, 2017). The author believes that the AI, even though at the beginning stage of its development (supported also by the Gartner Hyper Cycle, which estimates that it is going to take at least ten years until AI reaches the plateau of productivity, Gartner, 2017), has a high mid to long term potential.

A big advantage of *Blockchain* is, that it reduces business friction as not only individuals but also companies and machines would be able to freely transact value (Iansiti & Lakhani, 2017). Third party intervention is not needed anymore, which saves costs and time (Cearley, 2017b). The advantages of Blockchain make it very appealing for

application in new business models. Via the examination of the Gartner Hype Cycle, Blockchain technology have passed the peak of inflated expectations and is predicted to reach the plateau of productivity in 5 to 10 years (Gartner, 2017). Most Blockchain initiatives are still in the process of development. There are still a few technological challenges that have to be solved until Blockchain technology will be fully implemented in our daily lives (Cearley et al, 2017a). However, according to expert opinions (Accenture, 2017) the investment in blockchain technology in 2020 will reach the level of 0.6 billion US dollars, almost ten times the amount of investment of 2015 (75 million dollars).

The author estimates the potential of the Blockchain technology as mid-term – by 2025 the technology is likely to reach the maturity level and become mainstream. It should be approached as a new framework for the economic and social systems as it is going to have a revolutionary impact on the future social and economic environment.

*Digitalization* implies doing routine things in a new way by means of technology, as well doing completely new things by using advanced technology. Digitalization had spread in waves. In the first wave, the technology was used to develop more effective ways of production, which then expanded to the customer service and relationship management. Digitalization created new business models, services and products that can now be produced and marketed more effectively.

Organizations need to understand which knowledge they need to be able to make strategic operational decisions creating added value for the company and therefore the concept of *Big Data* is so important in authors opinion in the short-term and mid-term horizon. To meet this objective, as a first step companies must sort through all available data in order to identify trends and correlations driving positive change in business behaviour. In a second step, companies must add external information and combine it with the organizational information in order to achieve in-depth insights which can contribute to the company's success. Business environment is in a constant and rapid change. Especially nowadays, future predictions become more and more important to stay competitive. Data analysis using statistical predictive modelling techniques represents a valuable tool to support and improve organization's business strategy (EY, 2014, p. 2).

According to (Rogers et al. 2016, p. 18) there is a need to present something virtual to consumers, otherwise it is much more difficult to attract their awareness and attention. Integrating *Augmented Reality* into smartphones would offer a great opportunity for businesses to easily attract the target group with new and appealing information. With some all-new devices being launched in the near future these technologies will be available and affordable for the mass market, which is essential for these hi-tech applications in order to be used by businesses as a marketing item (Rogers et al., 2016, p. 18).

Most of augmented reality application that exist today, are delivered through mobile devices, as those are widely spread and used. In the future, more head-mounted displays and smart glasses will be used to deliver an augmented reality experience. The latter offers a hands-free experience (Porter & Heppelmann, 2017). Augmented Reality offers a new way for global businesses to interact with consumers with relatively low expenditures. It is by far cheaper to develop the mobile augmented reality app than it is to design a blockchain or an artificial intelligence system. It also is a new way to visualize information, for example extra colours, that are available online. Instructing and guiding consumers can also be changed with augmented reality, i.e. customer service and post-sale customer service could be brought to a new higher level.

### Problem statement

As was already described, augmented reality is „an enhanced image or environment as viewed on a screen or other display, produced by overlaying computer-generated images, sounds, or other data on a real-world environment“ (Collins English Dictionary, 2012). Augmented reality uses the existing environment and overlays new information on top of it. The apps for Augmented Reality are written in special 3D programs that allow the developer to tie animation/contextual digital information in the computer program to an augmented reality marker in the real world. For smartphones, the AR applications typically include global positioning system (GPS) to pinpoint the user's location and its compass to detect device orientation. Augmented reality (AR) has a vital role part to play in this success as it begins to enhance real world experiences through mainstream technologies (Destinational Think, 2017). Based on conducted analysis the author concluded that augmented reality is the most promising technology for adoption in the tourism industry. Building an incredible visitor experience is essential to a tourist destination's success. It could be justified based on cost and on enhancement of tourism business efficiency. Augmented reality

makes it much easier to market intangible products and services, which is one of the main challenges for the tourism industry, compared to other industries, which develop and market tangible products, i.e. retail, FMCG sectors etc.

Let us briefly assess the potential of the international tourism industry to justify the utilization of augmented reality application in the global tourism industry. The international tourism (Kostin, 2016):

- is accountable for 30% of the world's exports of services;
- constitutes 7% of overall exports of goods;
- the total contribution of travel & tourism to global economy constitutes 7.5 trillion USD;
- represents 10% of the global GDP;
- is characterized by the fact that 1 out of 10 jobs is created in the tourism industry (employs 7 times more people than the automotive industry);
- is the basis of the service culture in many societies;
- has the predicted growth rate over the next ten years of 4% annually.

In the following section I will seek to prove the following hypothesis: the augmented reality mobile application in the tourism industry has a significant short and mid-term potential in the developing and in the developed markets.

### Implementation and results

The Russian market was chosen as a prototype for the developing market and the market of the European Union was chosen as a prototype to the developed market. The well-travelled generation Y (born in early 80's to late 90's) & Z (born in early 00's) representatives from Russian Federation & the European Union were chosen to test the proposed hypothesis described earlier. The number of travelers under investigation from each country: 400.

The reference groups took part in a two-stage comprehensive survey to determine: 1) the most promising areas of augmented reality application in the tourism industry; 2) the market potential of the selected augmented reality applications.

Based on the performed investigation it was discovered that the primary areas for AR applications in international tourism are the following: planning, navigation, translation and information gathering. The trip-planning mobile apps that use augmented reality were highlighted by the participants. Among the top places where planning was requested were hotel bookings. The need to provide the user with not only live views of all the stops nearest to them, but also with live departure information, arrival and departure alerts, pedestrian navigation was indicated by the respondents. Navigation of unfamiliar places, both indoors and outdoors was also chosen by the respondents. Among the top places where navigation was requested were the airports. The requirement for greater interaction with the unfamiliar place was revealed. Translation applications, which allow the users to understand menus and other text written in a different language was a prerequisite for the respondents to successful travelling. Tourist attractions were chosen and described by the respondents as far more engaging places and much more meaningful resources for learning more about them via the usage of augmented reality applications.

The assessment of the market potential of the selected augmented reality applications is presented in Table 1.

*Table 1: Market potential for the AR applications.*

Area of application	Potential users of augmented reality applications, percent	
	Russian Federation	European Union
Airports	87	92
Hotel booking	84	98
Translation	100	93
Information on tourist attractions	100	100

Average for the market	92,75	95,75
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Based on acquired results it could be concluded that the potential for the developing markets (with the Russian market being under the investigation) is 92,75% of the generation Y and Z respondent base and the developed markets (the European Union being under the investigation) is 95,75% respectively. The overall potential for both developed and developing market could be assessed at 94,25% of the potential Y and Z customer groups.

As of the end of 2016, the AR mobile apps generated \$ 2 billion in revenue. According to Digi-Capital, the market has the full frame potential to grow to \$120 billion by 2020 (Cheminal M, 2015). Based on our investigation, 84% to 100% of generation Y & Z consumers from the developing and developed markets, whose consumption patterns would shape future demand, find clear benefits in using AR applications in the global tourism industry.

## Conclusions

The research findings show that the current pace of innovative trends tends to occur faster than in the former years. It could be concluded that it is becoming more important to not only stay up to date with all the rapid changes taking place in the world of digitalization, but also to take potential future changes into account. Failure to recognize a fundamental trend or change and take respective action becomes critical for the survival of the global business.

In the world of digital technologies artificial intelligence can revolutionize business processes in any branch, whereby blockchain offers the possibility to make transactions much easier and securer for all the parties involved. Big data, being defined as another promising digital technology will help analyse and implement the enormous amounts of data companies gain through their marketing activities.

Among the defined innovative drivers of the global economy, augmented reality applications seems to have the highest development potential due to the low adoption costs and high demand potential from the consumer side. The study was done to measure the AR application development potential for the global tourism industry and the results have shown that 84% to 100% of generation Y & Z consumers from developed and developing countries, whose consumption patterns would shape future demand, see clear benefits in using AR applications in this business field. Moreover, The AR market has all the potential to grow to \$120 billion by 2020 from only \$ 2 billion in revenue generated as of the end of 2016.

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## **Waste Management Criteria and its impact in the Hospitality Sector of Kumarakom**

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### **Abstract**

*Hospitality sector plays a vital role in the promotion of Tourism. Energy consumption, waste management and water consumption are the three major issues identified in this sector. In the current scenario of global warming and mass people being engaged in travel tourism activities; a sustainable approach is recommended in this segment. Thus an environmental responsibility criterion is introduced as part of the classification scheme. Waste management is a key element of this classification scheme. The various waste management strategies adopted as part of Responsible Tourism Classification are waste water treatment plants, sewage treatment plants, separation of waste into degradable as well as non-degradable items, waste disposal through various sources etc. As a sustainable responsible approach, different methods are used according to the status of the properties. In this study, the researcher tried to analyze the trends in waste and pollution control and management as part of the Responsible tourism initiative in the premium hotels and resorts of Kumarakom.*

**Keywords:** responsible tourism, environmental responsibility, sustainable approach

**Main Conference Topic:** Sustainability, Environment and Risk Management

### **Introduction**

As part of the Responsible Tourism (RT) Initiative a classification scheme was introduced by the Department of Tourism in the year 2011 and implemented since 2013. Hospitality sector is a growing segment of the tourism sector. Acceptable standards of accommodation are a major demand factor for tourists. Since it produces large amounts of waste, RT practices are indispensable in the current scenario of climate change. As a global model, waste management measures are identified as an essential component of environmental Management.

### **Objective of the study**

The study is intended to analyze the waste management measures undertaken in the RT (Responsible Tourism) branded hotels /resorts at Kumarakom.

### **Methodology**

#### *Selection of samples*

A purposive sample of eight Responsible Tourism (RT) classified resorts out of sixteen were selected.

### **Collection of Data**

The Responsible Tourism Criteria introduced by the Department of Tourism are adapted for this study and focus on environment management measures only. Primary data is collected through Survey method Tool Used- Simple Percentage Analysis.

### **Review of literature**

According to UNEP 2002, "the hospitality sector will always constitute an essential and dynamic component of the world's largest industry Travel and Tourism. Given its size and scope, hospitality industry makes a major contribution to gross domestic output. It does so via major four activities: profits earned and distributed to owners, taxes paid on sales, wages and real estate, job created and purchases of suppliers and materials". According to Ashley 2007

“Working with local suppliers and communities to expand economic opportunity can help increase appreciation of the tourism industry and strengthen a company’s social license to operate. Tourists are likely to have a more welcoming, friendly experience with locals if their host, hotel or resort is seen in a positive light by local inhabitants, taxi drivers, business owners, and public officials.”

The UN COP 2017 says that “Responsible tourism emerged in response to the growing environmental concern about the human induced climate change across the globe.” Kasim et.al 2007 opined that “tourism and the hotel sector has a direct relationship with the physical environments. The inevitable link between tourism and hotel activities with both environments, and the strong tourism growth in the past implies that tourism and all the sectors has far reaching negative impacts that must be neglected. This is not only good for the physical environments, but also for the sustainability of the industry itself.”

### **Responsible Tourism at Kumarakom**

The Rt initiative was promulgated by the hotels and resorts of Kumarakom by establishing a link between resorts and the local community. Selected Kudumbasree people cultivated vegetable as well as non vegetable edible items and supplied these to the hotels for a fair price. The quality of the products is ensured by hotel authorities. This linkage effect became a significant factor in the social economic and environmental parameters of responsibilities.

<b>1. Waste Management</b>	
1.1. Waste water treatment plant exists and is working properly	Yes – 10 marks
1.2. Percentage of recycling and reuse of treated water	> 50% - 15 marks 25 to 50% - 10 marks 10 to 25% - 5 marks < 10% - 0 marks
1.3. Presence of an integrated solid waste management system that functions effectively – Description of type of system	
a. Segregation, Recycle and reuse within the campus	Yes – 15 marks
b. Segregation and disposal through local arrangement	Yes – 10 marks
c. Disposal through local arrangement	Yes – 5 marks
d. No arrangement	Yes – 0 marks
<b>2. Attempts to reduce Green House Gas emissions</b>	
2.1 Initiative undertaken to reduce greenhouse gas emissions and creation of awareness	
2.2 Tree Planting within the compound	All six – 30 marks All five – 25 marks All four – 20 marks All three – 15 marks Any two – 10 marks Any one – 5 marks
2.3 Tree Planting in nearby areas	
2.4 Participation in public environmental program	
2.5 Publication of environmental booklets	
2.6 Availing carbon credit	
2.7 Celebration of environment day	

<b>3. Eco-friendly practices</b>	
3.1 Prohibition of plastic bags and bottles	All eight – 40 marks All seven – 35 marks All six – 30 marks All five – 25 marks All four – 20 marks All three – 15 marks Any two – 10 marks Any one – 5 marks
3.2 Usage of Paper bag	
3.3 Practice on taking back the plastic bags/bottles	
3.4 Written policy in minimizing printing	
3.5 Encouraging group travel	
3.6 Promoting organic products	
3.7 Use of soap, shampoo dispensers etc. in the bathroom	
3.8 Promoting less water usage	

Source: Kerala Tourism.

### **Waste Management and Pollution Control**

The RT initiative at Kumarakom brings considerable change in waste management. The major problems that hamper proper waste management are:

- The labor cost of the disposal of waste
- Scarcity of land in one's own premises

In the current scenario, the need to create awareness about environment and ecology among the local community as well as the implementation of stringent laws by the government for the common property resources are inevitable.

### **The Guiding Principles for the Environmental Responsibility at Kumarakom**

1. Assess environmental impacts throughout the life cycle of tourist establishments and operations - including the planning and design phase - and ensure that negative impacts are reduced to the minimum and maximizing positive ones.
2. Use resources sustainably and reduce waste and over consumption.
3. Manage natural diversity sustainably, and where appropriate restore it. And consider the volume and type of tourism that the environment can support, and respect the integrity of vulnerable ecosystems and protected areas.
4. Promote education and awareness for sustainable development – for all stake holders.
5. Raise the capacity of all stake holders and ensure that best practice is followed, for this purpose consult with environmental and conservation experts (Tourism & Livelihood, p:79)

Keeping the guidelines in mind while discussing with the resort people the researcher could conceive the following measures to address the issues at Kumarakom. Since the area is a fragile back water destination too much of dumping of waste from various part of the area may be the cause, that today the lake faces many sustainability challenges. Many species of the flora and fauna are at the **brink of extinction**. Plastic waste are rampant in the water bodies. Today the aesthetic appeal of the destination is challenged by all kind of waste. As part of the Responsible tourism (RT) practice the RT branded hotels are addressing the issues in the following ways. Some properties incorporate Responsible tourism (RT) practice with corporate responsibility.

## Observations

- Waste is separated into degradable and non-degradable items. The degradable items are used for vermi composting which is later utilized for organic farming. The food waste generated are used in biogas plants and utilized in kitchen areas for various purposes. In some properties they are supplied to licensed pig farms. The solid waste generated is disposed through common methods such as:
  1. Open dumping
  2. Incineration
  3. Composting
  4. Sanitary land fill.
- In the premium properties like Taj Garden Retreat, Lake Song, Coconut Lagoon etc., waste segregation plants are established in their own premises.
- Use of plastic is controlled and minimized by encouraging cloth bag making units. Thus the resorts support the local community by purchasing it. A noted practice in the well known resort of Coconut Lagoon is that in all the rooms reusable water bottle made of glass are used. In Club Mahindra Resorts, plastic wastes collected from the premises are recycled and reused as large plastic vessels used for waste collection. A plastic waste collection unit is functioning under the Responsible Tourism Cell of Kumarakom. The plastic collected from the entire destination is recycled and reused.
- Sewage Treatment Plants (STP) are another addition in almost all the properties studied. The latest technology EGSBR (Expanded Granular Sludge Blanket Reactor) is the basic principle behind the function. The treated water is used in toilets and for gardening.
- A few properties make use of EM (Effective Microorganisms) to remove dry leaves and all.
- Waste Bins are placed in the surrounding areas of the resort property. In certain resorts incineration causes problems to the local community. They remove such waste by local arrangement.
- As part of the CSR and RT practices, a team of employees is sent once a week to collect plastic bottles from the surrounding lake areas of Coconut Lagoon and Club Mahindra. The Taj group prevents the dumping of waste by facilitating smooth flow of water by use of machines.
- The Association of Resorts undertakes many awareness programs for community and students including tree planting, mangrove restoration programs, environment day celebrations etc. along with RT Cell, Kumarakom.
- Certain properties provide habitat for birds and varieties of butterflies. Thus the biodiversity is conserved. The Illikkalam cottage has a traditional vegetable garden with unique vegetable and fruit varieties. The Taj opined that there is a considerable decrease in the number of migratory birds and the commonly found migratory species have not been seen in the last two years. Global warming is supposed to be the reason for the same.
- Measuring Carbon Foot Print. This is a unique approach of Coconut Lagoon. In the purchase of raw materials and day to day operations they measure the expense and total cost of the products required. Transportation cost and carbon emission rate are considered. Materials from the local area or from the close proximity of the property to reduce the cost and emission rate are sought after. The carbon foot print is measured and this approach is helpful in the product positioning of the property. When compared with other properties majority of the occupants are foreign tourists especially from UK, Spain, Belgium and Switzerland. Many study reports reveal that these tourists prefer destinations giving priority for environmental practices. The GM of this property says that the tourists they received belong to three categories:
  1. Free Independent Travelers (FITS)
  2. Alert Independent travelers (AITS)
  3. Group travelers (GITS).

The FITS and GITS are common in all the resorts. The AITS ensure “no impact is made by their stay”. The responsible tourism practices in the accommodation sector of Kumarakom caused such an interest among the global tourists.

### Analysis of Results - Environmental Responsibility Criteria

Based on the marks obtained in the Environmental Responsibility Criteria it is found that

1. Considering all criteria: Out of the ten properties studied, the premium properties 30% (3 of ten) follows 100% of the criteria. 10 % (1 of ten) of the properties follow 72% the criteria, 10 % of the properties follow 64% the criteria, 30 % of the properties follow 64% the criteria, 10 % of the properties follow 50% of the criteria and 10% of the hotels follow only 27 % of the criteria.

Classification Criteria	% of criteria followed	No. of Resorts/ hotels (F)	Hotels/resorts (%)
	100%	3	30
	72%	1	10
	64%	1	10
	64%	3	30
	50%	1	10
	20%	1	10

2. Criteria 1: Waste water treatment plant: In the 100% of the properties waste water treatment plant exists.
3. Criteria 1.2: Recycling and Reuse of Treated water: Recycling and reuse of treated water is found to be greater than 50% in 30% (3 of ten) of the resorts. It is found to be 10-25% in 10% (1 of ten) and <10% in 60% of the resorts.
4. Criteria 1.3: Solid waste Management: Presence of Integrated solid waste management system that functions effectively. It was found that 30% of the hotels have no mechanism for removing solid waste management. 30 % of the properties have facilities in their own property for segregation and reuse.

Integrated Solid waste Management	F	%
1. Segregation, Recycle and reuse within the campus	3	30
2. Segregation and disposal through local arrangement	3	30
3. Disposal through local arrangement	1	10
4. No Arrangement	3	30

Source: Primary Data

5. Criteria 2 and 3, classified in to two categories:

- Attempts to reduce Greenhouse emissions
- Ecopractices.

It was found that 40 % of the hotels practice all of the GHG reducing initiatives put forward as part of RT classification. 90% of the hotels follow half of the initiatives. The same is the case with **eco practice** also. The premium properties are well aware of the consequences of negative impacts in this destination. Their approach is highly appreciated than ever before.

1. Initiatives undertaken to reduce greenhouse gas emissions and creation of awareness

2. RT Environmental practices (1 to 6)	Practice	F	%
2.1 Tree Planting within the compound	All 6	4	40
2.2 Tree Planting in nearby areas	Any 5	1	10
2.3 Participation in public environmental programs	Any 4	4	40
2.4 Publication of environmental booklets	Any 3	1	10
2.5 Availing carbon credit	Any 2	0	0
2.6 Celebration of environment day	Any One	0	0

3. Eco-friendly practices (1 to 8)	Practice	F	%
3.1 Prohibition of plastic bags and bottles	All Eight	3	30
3.2 Usage of Paper bag	All Seven	0	0
3.3 Practice on taking back the plastic bags/bottles	Any six	0	0
3.4 Written policy in minimizing printing	Any 5	1	10
3.5 Encouraging group travel	Any 4	5	50
3.6 Promoting organic products	Any 3	0	0
3.7 Use of soap, shampoo dispensers etc. in the bathroom	Any 2	0	0
3.8 Promoting less water usage	Any 1	1	10

Source: Primary Data

### Recommendations

1. The water bodies are contaminated by plastic wastes and other effluents. Measures should be taken to control that.
2. A few properties remove solid wastes effectively. There is no such mechanism in most of the properties. Alternative arrangements are essential for solid waste removal.
3. The classification system is insufficient for the removal of hazardous waste.
4. There is no mechanism for the removal or recycling of oil from various sources. Since many of the resorts have Ayur Vedic spas, there is no remedy for disposal of used oils.
5. There is a common sewage treatment plant for waste treatment from house boats. Either the house boats should come to the site or should handover wastes to the waste collection floating vessels which are later treated at the plant. This facility is provided by the Department of Tourism through District Tourism Promotion Council. Such a common mechanism is inevitable for waste removal from small properties. Otherwise, they might dump waste into the water bodies contributing to pollution.

### Conclusion

Responsible Tourism practices are found to be very successful with the linked to hotels and resorts. The classification scheme implemented is useful for minimizing negative impacts and maximizing positive outcomes.

Most of the stakeholders are of the opinion that they are concerned about the negative impacts and striving to minimize it. As part of the CSR practices many awareness classes have already been conducted to create awareness on ecology and environment of the destination. It is interesting to note that if a resort follows an innovative practice, others also try to accept and follow best practice. The state mission coordinator, Mr. Rupesh Kumar and the destination coordinator Mr. Bhagath Singh tried their maximum to boost the RT initiatives despite their limitations. The new tourism policy is hopeful in this regard.

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## Heritage Tourism Development of Cochin: A Study of Critical factors

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### Abstract:

*Kerala is known for its health tourism or wellness tourism and backwater tourism for leisure travelers. It is also a treasure trove of historical sites, architectural monuments and heritage centres that reflects the glory of the past. Cochin, popularly known as "Queen of Arabia" is a tourist destination blissful with heritage and culture. Cochin was explored as wellness tourism center and leisure tourism destination. Limited study has been done on the heritage tourism development of Cochin. Cochin has a rich historical background and plays a vital role in heritage tourism. This paper focuses on various critical factors of heritage tourism in Cochin. There are many critical factors that affect the development of the destination. Hence the study is undertaken to find the critical factors that affect the destination image of Cochin as a heritage tourism destination. From the study it was found that the critical factors that give Cochin a heritage image are festivals and events, traditional gastronomy, shopping and authentic exhibits. The motivational factor includes cultural identity, authentic nature, knowledge and education. The association of socio demographic factors with travel motivation was also assessed in the study. The study throws lights on heritage tourism development of the destination.*

**Keywords:** heritage tourism, cochin, critical factors, motivational factors, culture

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### INTRODUCTION

Heritage tourism occupies a significant proportion of the 'cultural tourism' spectrum, and while it often overlaps with and links to other tourism product, the historic or human dimensions considerably inform and shape all parts of the spectrum. In this sense, heritage provides an 'overarching' component or common thread for many tourism products in a country or localized area. 'Heritage' and 'Culture' have become interchangeable and elastic terms. In the context of the arts for example, the use of the term culture relates to how a society's history, beliefs, values, traditions and icons are manifested in an artistic format. The term often embraces Indigenous and natural culture, depending upon the perspective of the proponent.

### RELATED WORK

Timothy and Boyd (2003) stated that heritage can be divided into tangible immovable resources (e.g. national park, sanctuaries, monuments, buildings), tangible movable resources (e.g. objects in museums) and intangible resources including values, customs, ceremonies, lifestyles and experiences such as cultural events, currently UNESCO focusing on folk dances of south India as a cultural heritage. It defines that heritage tourism as "an immersion in the natural history human heritage, arts, philosophy and institutions of another region or country". According to Howard (2003) Heritage can be defined as "anything that a person wishes to conserve or collect, so as to pass on to future generations". Poria et al (2001) describes Heritage tourism is a phenomenon based on tourists motivations and perceptions rather than on specific site attributes, Heritage tourism is a subgroup of tourism, in which the main motivation for visiting a site is based on place's heritage characteristics according to the tourist's perception of their own heritage'. Heritage tourism has captured so much attention during the past decade primarily due to the fact that economics drive the interest in heritage tourism. According to the recent study by the Travel Industry Association of America, people who engage in historic and cultural activities spend more and stay longer than other types of U.S. travelers (Hargrove, 2002). The term Culture and Heritage tourism refers to "That segment of tourism industry that places special emphasis on Heritage and Cultural attractions. These attractions are varied and include performances, museums, displays, archaeological sites, fairs and festivals etc. In developed areas, Heritage and Cultural attractions include art galleries, plays, orchestra shows and other theatrical performances. The tourists may travel to particular places and to visit cultural shows or enjoy special musical performances. It may be a visit to a particular fair like craft mela etc. In less developed areas heritage and cultural attractions may include visit to

traditional religious places, handicrafts and cultural performances.” (Christou, 2005). Herbert D.T. (2001) investigates that it is in the hands of managers of heritage sites to portray a particular set of image about the site. The physical attributes of a destination are at their disposal. The author is more concerned with only the literary places as tourism destinations and says that the literary places can be created with these fictional words in mind and tourists may be less concerned with distinctions between fiction and reality’. The author has addressed common issues related to the study of heritage tourism and has reported empirical findings from two literary places. Through these case studies the author has confirmed links between class and the habit of visiting heritage sites. Heritage Tourism is one of the most significant and fastest – growing segments of the tourism industry as tourists become increasingly more interested in consuming heritage. (Jimura 2011). Srivastava (2009) proclaimed that India was increasingly seen as an exotic destination offering a mix of culture, history and state of arts amenities to the international traveler. According to the researcher, heritage tourism is a fertile ground for exercising creative talents, fostering special kinds of relations between the visitors and the host of population and between the tourists and the environment. While the international tourists are more satisfied with food, hotel and people of India, deep sense of dissatisfaction can be perceived with regard to infrastructure. There is dissatisfaction with respect to bad road conditions, inordinate delays at immigration counters, bad airport facilities, and absence of sign boards, illegal guides and poor maintenance of heritage places. However, the tourists are very much satisfied with guides approved by the government. McKercher (2002) introduced a two – dimensional model on cultural tourism and classified cultural tourist in five categories – the purposeful, the sightseeing, the casual, the incidental and the serendipitous cultural tourists. The identity of heritage tourism lies in its antiquity and if it's violated then it renders the asset useless and meaningless in terms of social and cultural objective. It cannot be the representative of mass tourism. (Kolar et al 2010).

### **Kerala Tourism**

Kerala has a rich legacy in many aspects like astrology, Ayurveda, places of worship, traditions and rituals, fairs and festivals and handicrafts. Tourists can avail themselves of travel packages that include guided visits to heritage centres to know all about the history, art, culture and lifestyle of the people in the olden times. Cochin is located along the Arabian Sea, on the south-west coast of India. Cochin is one of the seven taluks of Ernakulam district in the state of Kerala. Straddled by the backwaters, it is bordered by the Arabian Sea in the west and urbanised region in the east. The major part of the city lies at sea level along the coastline of around 48 km. The commercial capital of Kerala and the most cosmopolitan of the State's cities, Cochin has long been eulogized in tourist literature as the 'Queen of the Arabian Sea'. It has a fascinating blend of cultures. From time immemorial, traders and travellers frequented the place. The Chinese Fishing net swaying in the breeze over the backwaters, the Jewish Synagogue, The Dutch Palace, Portuguese architecture and the British influence all blend harmoniously with the basic thread of Kerala's rich heritage.

According to Sri Thomas (2002) the former Minister of Tourism, Government of Kerala, in order to make Kerala the real God's Own Country, an up market high quality tourism destination through national utilization of resources with focus on integrated development of infrastructure sector, conserving and preserving the heritage and environment and enhancing productivity, income, creating employment opportunities and alleviating poverty thereby making tourism the most important sector for the socio-economic development and environmental protection of the state. Sasikumar K, Binu R (2004) analysed the growth of tourism industry in Kerala in comparison to other states. The study also highlighted the developmental activities of tourism industry in Kerala, the role of different agencies involved in tourism, development of infrastructure, tourism vision of the state in comparison. Future, the promising tourism products in Kerala is also projected. K.G. MohanLal (2005) reported that the design, planning and management of tourism environment requires more than the simplistic adoption of codes and guide lines or industry self regulation, through valid these strategies should be. Instead, a sustainable tourism industry requires a commitment by all the parties involved in the planning process to sustainable development principles.

### **Objectives of the study**

- Study the motivational factors of heritage tourism in Cochin
- Identify the most preferred heritage centres of Cochin
- Study about the critical factor of Heritage tourism development in Cochin.

- Identify the major critical factor of Cochin as a destination.

### Methodology and Discussion

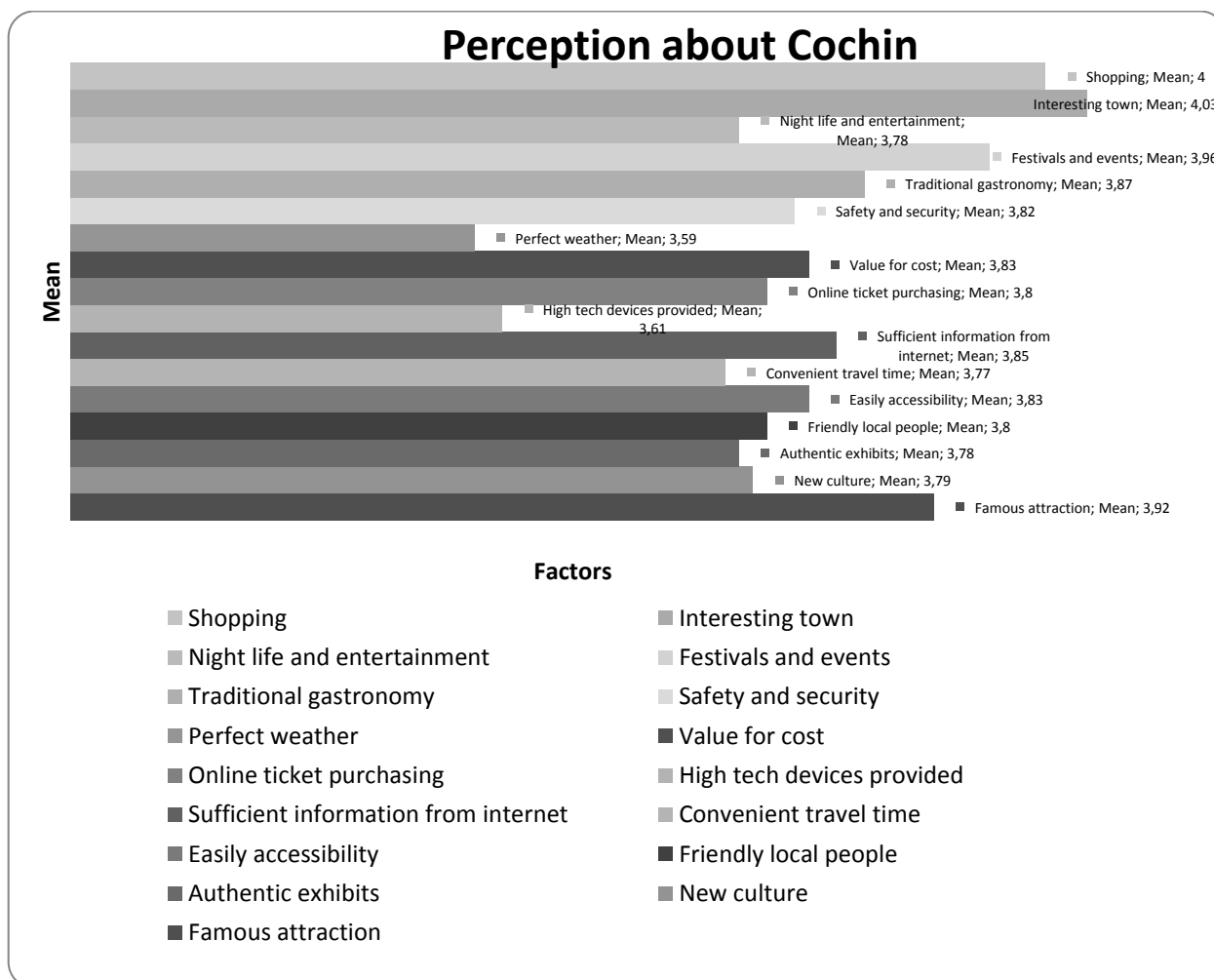
Cochin is a vibrant city situated on the south-west coast of the Indian peninsula in the breathtakingly scenic and prosperous state of Kerala, hailed as 'God's Own Country'. Its strategic importance over the centuries is underlined by the sobriquet Queen of the Arabian Sea. Informally, Cochin is also referred to as the Gateway to Kerala. The Chinese Fishing net swaying in the breeze over the backwaters, the Jewish Synagogue, The Dutch Palace, Portuguese architecture and the British influence all blend harmoniously with the basic thread of Kerala's rich heritage. The following are the important destinations of Cochin which was taken for the present study. A sample of 220 people was taken from the survey. The method used was convenience sampling. Those who were tourist in Fort Kochi were considered for the study.

The Heritage tourism development of Cochin has been assessed by analyzing the critical factors. The perception was assessed on a 5 point likert scale. Ranging from 5 to 1; Strongly Agree to Strongly Disagree.

### Descriptive Statistics:

#### Perception about Cochin

Figure 1

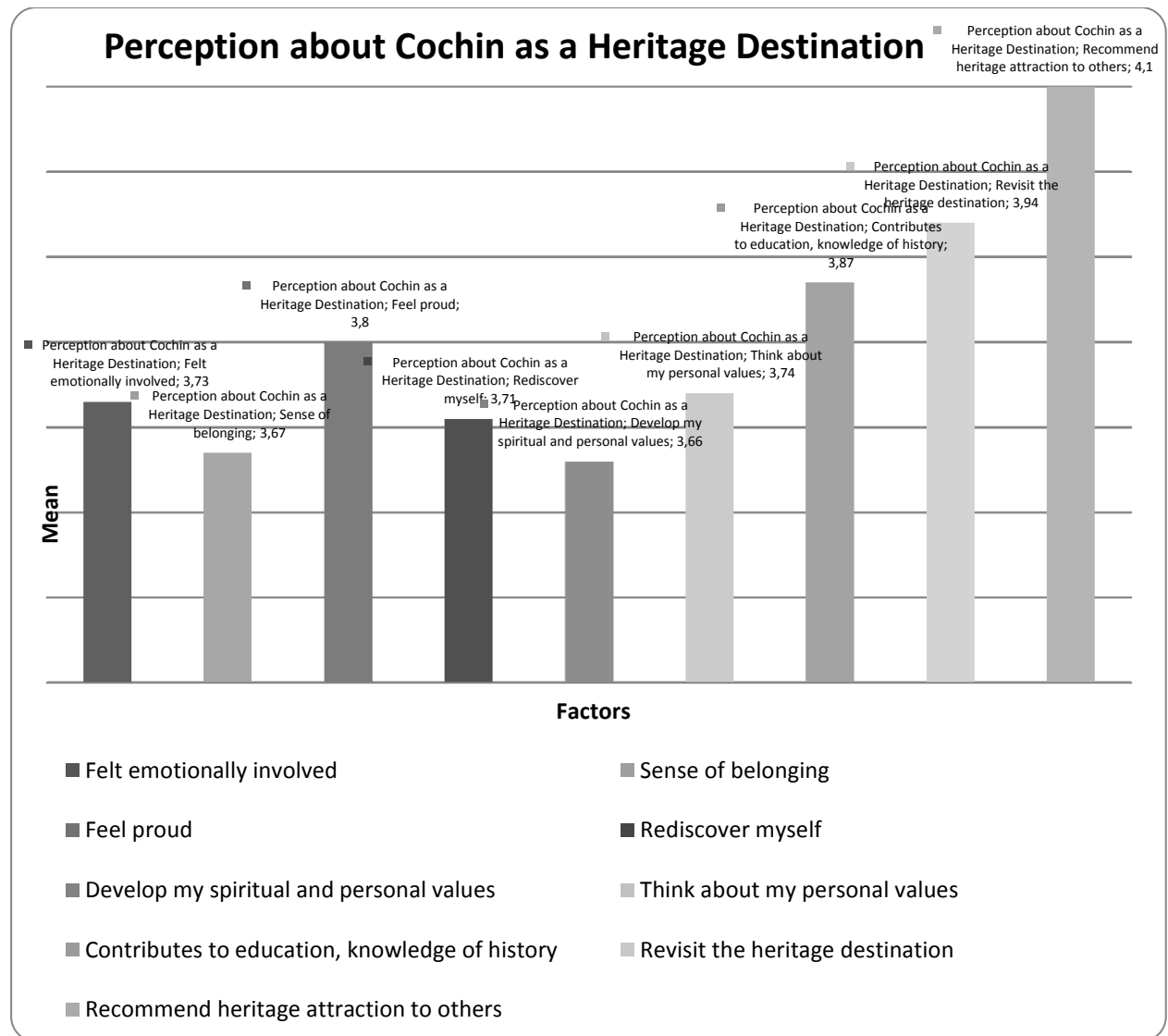


The above figure shows a clear perception of the tourist about visiting Cochin where X axis represents the factors such as Famous attraction, New culture, Authentic exhibits, Friendly local people, Easily accessibility, Convenient travel time, Sufficient information from internet, High tech devices provided, Online ticket purchasing, Value for cost, Perfect weather, Safety and security, Traditional gastronomy, Festivals and events, Night life and entertainment,

Interesting town and Shopping. Y axis represents the mean values and it ranges from 4.03 to 3.59 and it is clear that majority of tourist agrees to the fact that Cochin is a best place to visit. Cochin is an interesting town has a highest mean value 4.03, following shopping with mean value 4.00, festivals and events with 3.96 and perfect weather has the lowest mean value 3.59.

### Perception about Cochin as a Heritage Destination

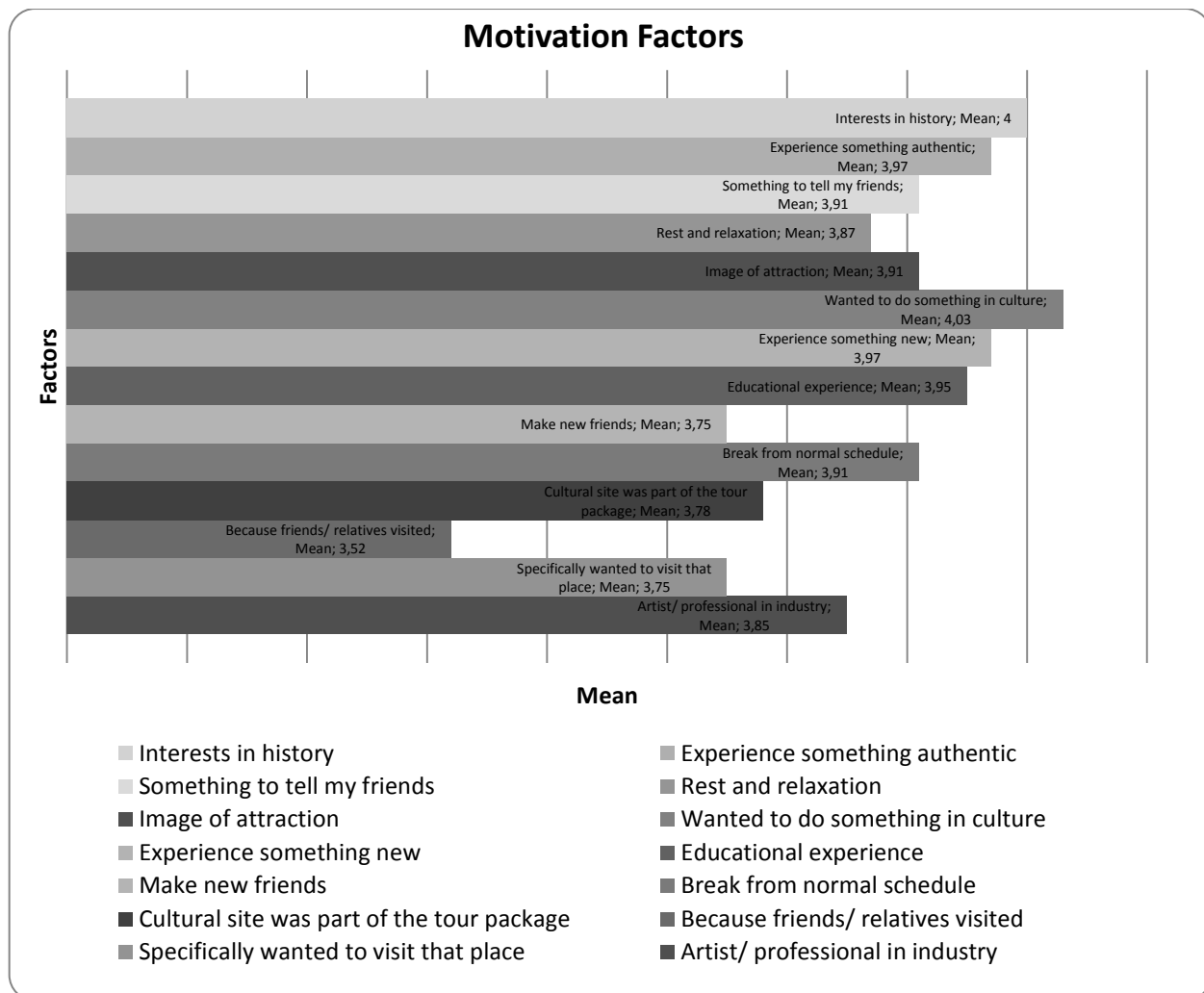
Figure 2



The perception of the tourist about Cochin as a heritage destination where X axis represents the factors such as Felt emotionally involved, Sense of belonging, Feel proud, Rediscover myself, Develop my spiritual and personal values, Think about my personal values, Contributes to education, knowledge of history, Revisit the heritage destination and Recommend heritage attraction to others. Y axis represents the mean values and it ranges from 4.10 to 3.66 and it is clear that majority of the tourist agree that Cochin is a heritage tourism destination. Most tourist are recommending heritage attraction to others, willing to revisit the destination again and visiting Cochin contribute to their knowledge of history are the factors with highest mean value and developing spiritual and personal value has the lowest mean value 3.66.

### Motivation Factors

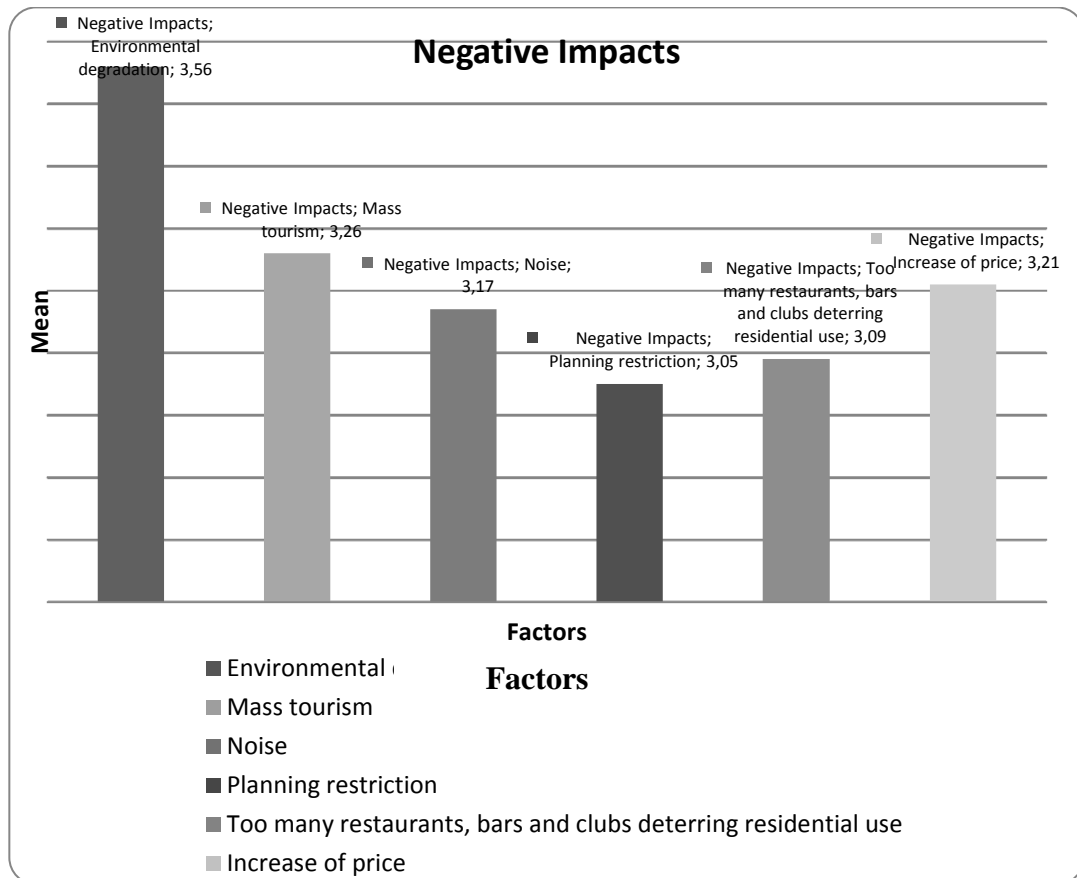
Figure 3



The above figure explain motivational factor where X axis represents the factors such as Artist/ professional in industry, Specifically wanted to visit that place, Because friends/ relatives visited, Cultural site was part of the tour package, Break from normal schedule, Make new friends, Educational experience, Experience something new, Wanted to do something in culture, Image of attraction, Image of attraction, Rest and relaxation, Something to tell my friends, Experience something authentic and Interests in history. Y axis represents the mean value and it ranges between 4.03 to 3.52 and it shows that there are lot of factors that motivate tourist to travel to Cochin as a heritage destination. The want to do something in culture, tourist interest in history, to experience something authentic and new, are the most important factors motivated tourist and visited because friend/ relatives visited has the lowest mean value 3.52.

## Negative Impacts

Figure 4



The above figure shows the negative impact of tourism in Cochin where X axis represents the factors such as Environmental degradation, Mass tourism, Noise, Planning restriction, Too many restaurants, bars and clubs deterring residential use and Increase of price Y axis represents mean value which ranges between 3.56 to 3.05 and the most ill effect of tourism in Cochin include environmental degradation with highest mean value 3.56, mass tourism with 3.26, increase in price with 3.21, noise with 3.17 mean value, too many restaurants, bars and clubs deterring residential use with 3.09 and planning restriction has the lowest mean value 3.05.

ANOVA:

**Motivational factors with education**

Table 1

**ANOVA****H<sub>0</sub>.** There is no association between socio demographic factor education and tourist motivation.

<b>Factors</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
specifically wanted to visit that place	Between Groups	9.716	4	2.429	3.926	.004
	Within Groups	133.029	215	.619		
	Total	142.745	219			
because friends/ relatives visited	Between Groups	10.908	4	2.727	2.792	.027
	Within Groups	209.978	215	.977		
	Total	220.886	219			
cultural site was part of the tour package	Between Groups	14.881	4	3.720	4.918	.001
	Within Groups	162.647	215	.756		
	Total	177.527	219			
break from normal schedule	Between Groups	13.523	4	3.381	5.686	.000
	Within Groups	127.836	215	.595		
	Total	141.359	219			
image of attraction	Between Groups	6.344	4	1.586	2.468	.046
	Within Groups	138.183	215	.643		
	Total	144.527	219			
something to tell my friends	Between Groups	7.840	4	1.960	3.380	.010
	Within Groups	124.687	215	.580		
	Total	132.527	219			
experience something authentic	Between Groups	10.349	4	2.587	4.135	.003
	Within Groups	134.537	215	.626		
	Total	144.886	219			
interests in history	Between Groups	10.414	4	2.604	3.621	.007
	Within Groups	154.581	215	.719		
	Total	164.995	219			

The above table clearly states motivational factors like specially wanted to visit the place, because friends and relatives visited, cultural site was part of tour package, break from normal schedule, image of attraction, something to tell their friends, experience something authentic and interest in history are within the significant value 0.05. Hence the null hypothesis is rejected and it is found that there is an association between tourist education and motivation to visit the destination.

### Motivational factor with occupation

Table 2

$H_0$ . There is no association between socio demographic factor occupation and tourist motivation.

#### ANOVA

Factors		Sum of Squares	Df	Mean Square	F	Sig.
make new friends	Between Groups	10.249	5	2.050	2.285	.047
	Within Groups	191.983	214	.897		
	Total	202.232	219			
experience something new	Between Groups	9.807	5	1.961	2.690	.022
	Within Groups	156.030	214	.729		
	Total	165.836	219			
wanted to do something in culture	Between Groups	11.085	5	2.217	4.101	.001
	Within Groups	115.692	214	.541		
	Total	126.777	219			
image of attraction	Between Groups	9.091	5	1.818	2.873	.016
	Within Groups	135.436	214	.633		
	Total	144.527	219			
rest and relaxation	Between Groups	9.110	5	1.822	3.032	.011
	Within Groups	128.577	214	.601		
	Total	137.686	219			
experience something authentic	Between Groups	8.499	5	1.700	2.667	.023
	Within Groups	136.387	214	.637		
	Total	144.886	219			

Above table shows significant value for motivational factors like making new friends, experience something new, want to do something new and in culture, image of attraction, rest and relaxation and experience something new are within 0.05. So null hypothesis, no relation between motivational factor and occupation is been rejected and accepted the fact that there is a relation between motivational factor and tourist occupation.

### Motivational factors with income

Table 3

$H_0$ . There is no association between socio demographic factor income and tourist motivation.

#### ANOVA

Factors		Sum of Squares	Df	Mean Square	F	Sig.
specifically wanted to visit that place	Between Groups	7.870	3	2.623	4.201	.006
	Within Groups	134.875	216	.624		
	Total	142.745	219			
make new friends	Between Groups	6.998	3	2.333	2.581	.054
	Within Groups	195.234	216	.904		
	Total	202.232	219			
experience something new	Between Groups	9.677	3	3.226	4.462	.005
	Within Groups	156.160	216	.723		
	Total	165.836	219			
wanted to do something in culture	Between Groups	5.900	3	1.967	3.514	.016
	Within Groups	120.877	216	.560		
	Total	126.777	219			
experience something authentic	Between Groups	11.544	3	3.848	6.233	.000
	Within Groups	133.342	216	.617		
	Total	144.886	219			
interests in history	Between Groups	10.862	3	3.621	5.074	.002
	Within Groups	154.134	216	.714		
	Total	164.995	219			

From the above table it is clear that there is a significant relation between income and motivational factors. As motivational factors like specially wanted to visit the place, make new friends, experience something new, want to do something in culture, experience something authentic and tourist in history are within the significant value 0.05. Hence the null hypothesis, no relation between motivational factor and income is rejected.

**Garrett's ranking scale analysis on attraction**

Table 4

S.NO	VARIABLES	AVERAGE SCORE	RANK
1	St.Francis Church	60.85	1
2	Chinese Fishing Net	59.57	2
3	Dutch Cemetery	53.67	3
4	Fort Immanuel	51.84	5
5	Santa Cruz Basilica	53.47	4
6	Bishops House	46.19	10
7	Indo Portuguese Museum	46.45	9
8	Bolgatty Palace	47.92	6
9	Paradesi Synagogue	46.72	8
10	Mattancherry Dutch Palace	46.76	7
11	Kochi Muziris Biennale	44.90	11
12	Kochi Carnival	43.35	12

The Garrett's ranking is done to identify most preferred destination, from the ranking it is clear that the heritage destination mostly preferred by tourists to visit are St.Francis Church and secondly Chinese Fishing net. The Dutch Cemetery score the third highest preferred destination followed by Santa Cruz Basilica, Fort Immanuel, Bolgatty Palace, Mattancherry Dutch Palace and others heritage destinations. Bishop's House, Kochi Muziris Biennale, Kochi Carnival are the least preferred destinations.

**Findings**

- Cochin also known as “Queen of Arabian Sea” is a well known heritage tourism destination. From the descriptive statistics it is found that in terms of In terms of feelings about visiting Cochin as a tourist destination the factor interesting town has a highest mean value of 4.03, the perception of tourist about visiting Cochin as a heritage destination the factor, recommend heritage destination to others has the highest mean value 4.10. In motivational factors to visit the destination the factor want to do something in culture has the highest mean value 4.03 and in negative impact of tourism the factor environmental degradation has the highest mean value 3.56.
- By using ANOVA it is found that there is a significant relationship between motivational factor with education, income and occupation. With education factors like specifically wanted to visit that place, because friends/ relatives visited, cultural site was part of the tour package, break from normal schedule, experience something authentic and interests in history show significance value below 0.05. It shows significance between motivational factor with occupation the factors like make new friends, experience something new, wanted to do something in culture, image of attraction, rest and relaxation and experience something authentic. There is also relationship between motivational factor with income, factors like specifically wanted to visit that place, make new friends, experience something new, wanted to do something in culture, interests in history and experience something authentic.

- By using Garret's ranking technique it is inferred that the heritage destination mostly preferred by the tourist in Cochin are St.Francis Church and Chinese Fishing net. Thirdly highly preferred destination is The Dutch Cemetery. Santa Cruz Basilica and Fort Immanuel are the other preferred heritage destinations. And the least preferred destinations are Bishop's House, Kochi Muziris Biennale, Kochi Carnival.

### Suggestions

- The tourist safety and security can be improved to make them feel Cochin as one of the safest place to visit.
- Special protection and arrangements for tourist to see festivals and cultural fairs.
- More and more domestic and international publicity can be done.
- Proper garbage disposal from public places, restricted plastics and other non degradable materials at the tourism destination awareness can be done.
- More emphasis can be given Swatch Bharat activities to lessen the pollution and maintain the cleanliness.
- Can minimise overcharging and exploitation on tourist.
- New laws and regulations can be framed so as to protect the industry and the tourist's.
- Introduction of hi- tech devices like mobile APPs, electronic map, travel portals etc for the tourist will make travel easy and convenient for tourist and also help for online ticket purchasing and render other related services.
- The infrastructure and the accessibility can be improved so that it attracts more foreigners and domestic tourists.
- Training the local people may help in handling the tourist and also for safety measures.
- Tourism must enhance the preservation and transmission of cultural and historical traditions.

### Conclusion

From the study it was found that the critical factors that give Cochin a heritage image are festivals and events, traditional gastronomy, shopping and authentic exhibits. The motivational factors include cultural identity, authentic nature, knowledge and education. The association of socio demographic factors with travel motivation was assessed. It was found that education, income and occupation have association with travel motivation. The various attractions of Cochin were ranked based on the preference of tourist and it was found that St. Francis Church is the favoured attraction followed by Chinese Fishing net, Dutch Cemetery, Santa Cruz Basilica and Fort Immanuel. Thus the study throws light on various critical factors of heritage image of Cochin.

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## Sustainable Tourism Development: A Study on Tourism Propitiations along East Coast Road (ECR), Tamil Nadu, INDIA

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### Abstract

Enhanced Per Capita Income leading to improved Disposable Income was the hallmark of Industrial Revolution towards the thirties of the Nineteenth Century. Propelling the movement of people to seek leisure out of their domicile to escape the monotony imposed through division of labour, this hallmark made tourism into a business propitiation. Thriving on the structural and scientific developments, tourism was launched as a great means for peace and international understanding by the United Nations and its member countries towards the sixties and seventies of the Twentieth Century. Garnering on these, the growth of tourism towards the turn on the second millennium enlightened the mankind on Sustaining the World from unethical exploitation of its resources and thus Sustainable Development was born, in fact Sustainable Tourism Development was born at the same time. Benchmark of tourism is experience of leisure and experiencing leisure at a leisurely pace is the trademark for any road networks world over. Beginning with Silk Road of Hans Dynasty (2<sup>nd</sup> c. B.C to 2<sup>nd</sup> c. A.D) to the Roman Roads of the Roman Empire (3<sup>rd</sup> c. B.C to 3<sup>rd</sup> c. A.D) and to U.S. Route 66, Roads have been the integral part of the development of mankind on socio-cultural, economic and environmental aspects of life. With tourism as a business propitiation, roads play tremendous part in establishing the mark of the destinations, to name a few, U.S Route 101, Adriatic Highway in Europe, Coastal Roads of Bali, Indonesia, Great Ocean Road as well as Captain Cook highway in Australia, are some the famous coastal roads shouldering tourism in their respective region. East Coast Road (ECR), TamilNadu, India, that connects Chennai, Capital City of Tamil Nadu State with Tuticorin, a major seaport for the State and the Nation, is one of the kinds that weave the regional and tourism development. ECR is star-studded with phenomenon tourism destinations on its route namely Kovalam, Mahabalipuram, Pondicherry, Karaikal, Nagore, Kodikkarai, Gulf of Mannar, Rameshwaram, Erwadi, Tuticorin and Kanyakumari. The variety of these destinations also prove the variety of tourism forms that is spread over. It is mandatory for the present world to sustain these destinations and their wonderful tourism resources for the generations to come so as to leave its unique foot-mark of sustained development. Sustainable Tourism, by definition is that form of Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.<sup>4</sup> This definition is absolutely elastic and applies to the entire gamut of tourism types so that there is a sustainable development to the destinations concerned. Invoking the objectives of the UNEP supported 10 Year Framework Programmes on Sustainable Consumption and Production Patterns (10YFP –SCP), this paper envisages an assessment of select tourism destinations along the ECR on socio-cultural, economic and environmental aspects of life so as to identify the issues hampering the sustainable development and offer appropriate solutions.

**Keywords:** sustainable development, sustainable tourism development, east coast road (ECR), 10YFP –SCP, tourism propitiations, tourism forms

**Main Conference Topic:** Sustainability, Economy and Tourism

### Introduction

UNWTO Tourism Highlights 2015 indicates that total contribution oftourism industry to global economy is 9 percent. The global statistics on international tourist arrivals have attained a whopping figure of 1184 million in 2015. France, United States, Spain and China continue to be the top three destinations by both international arrivals and foreign exchange receipts. *Conceptual sustainable tourism can be defined as tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.* Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism

<sup>4</sup> Making Tourism More Sustainable - A Guide for Policy Makers, UNEP and UNWTO, 2005, p.11-12

development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability (UNWTO, 2015).

Total length of road networks in the World has reached 64 million kilometers. India's transport sector is large and diverse; it caters to the needs of 1.1 billion people. India has the third largest road network in the world with a total network of 4.1 million km. (Roadtraffic-technology, 2012). In recent years, the government of India has realized the importance of improving the road network for sustaining the economic growth of the country (Rastogi, 2006). Golden Quadrilateral Road is fifth longest road network 5486km, in the world connecting four major Metropolitan Cities of India. This road provides a classic connection to Delhi – Kolkata – Chennai – Mumbai – Delhi that resembles a quadrilateral and surely its quality makes it Golden Quadrilateral. Road Network in India carries almost 90 percent of the country's passenger traffic and 65 percent of its freight. The density of India's highway network at 0.66 km of highway per square kilometer of land is similar to that of the United States (0.65) and much greater than China's (0.16) or Brazil's (0.20). However, most highways in India lag in international standards and 40 percent of India's villages do not have access to all-weather roads. The major roads in India are classified as National Highways (NH) and State Highways (SH). The development, construction, and maintenance of National Highways (NH) is the responsibility of the Government of India and NHAI<sup>5</sup>. National highways form the arterial roads in the country and are generally better maintained than the state highways. To further improve the national highways network, Government had taken up an ambitious program of upgrading about 38,000 km at a cost of Rs. 1.58 trillion (NHAI, 2008), in that line East Coast Road is a premier road in Tamil Nadu. Yet, all these Roads are in tourism service and it need a specifically sustainable development.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary.

## Review of Literature

### Importance of Roads in Tourism Development

Road Transport plays an important part in economic growth and globalization. Anne Dodge (1999), in Paper, "Route 66 Where are you?" analysed for MIT the history of Route 66, the development of American Automobile Highways, motels and tourism in this corridor in U.S.A. In 1966, Route 66 developed in various phases wound 2400 miles south from Chicago through Saint Louis, Missouri, down through Tulsa and Oklahoma City, across the south west via Santa Fe, New Mexico and ended in downtown Los Angeles. Route 66 began as a series interconnected, local roads that were building out from the centre of countless towns. The evolution of tourist-targeted facilities is well represented in the roadside architecture along U. S. Highway 66. Americans who drove preferred the accommodations that emerged from automobile travel – motels. Motels evolved from earlier features of the American roadside such as the auto camp and the tourist home.

The road transportation makes it easy to see local culture and nations. Many developed roads in the world are acting as facilities for tourism development and contribute the economy of the particular nation. Roads present great flexibility in contrast to other modes of transportation. The importance of this mode in tourism is also very important. When compared with the prices in air transportation, this mode of transportation is frequently used by tourists because of low prices (Oter, 2007). As compared to other modes of transport, road transport may be described as well-accessible for a user, flexible, effective, reliable and rapid. In a majority of states, road transport plays a dominating role in the national sectors (Zak et al. 2011).

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<sup>5</sup>National Highways Authorities of India

## Business Dimensions of Tourism

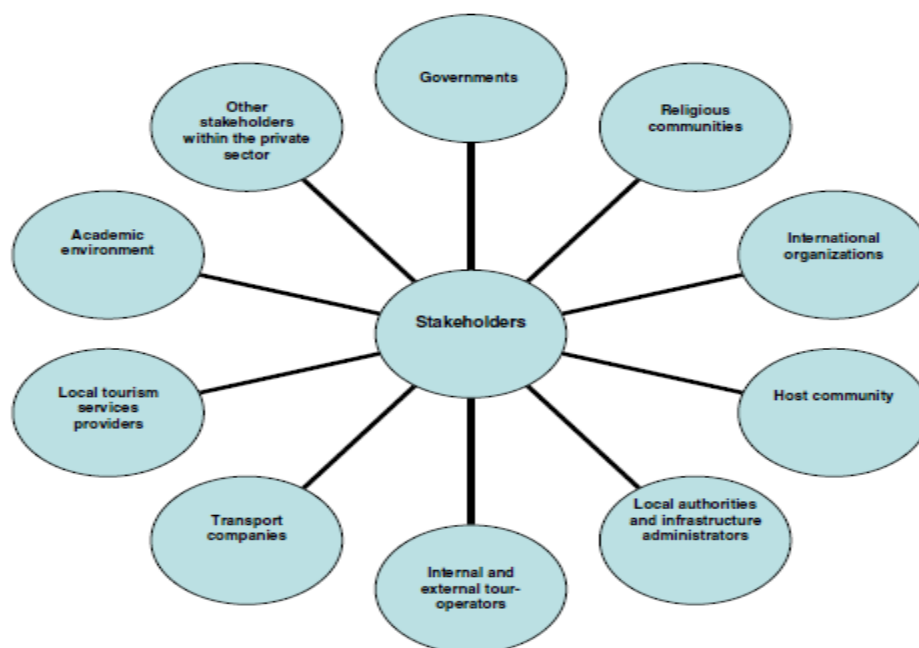


Figure 1: Stakeholders in Tourism Business (Tala&Padurean, 2014)

Tourism business benefited to various segments of people like governments, religious communities, international organisations, host community, local authorities and infrastructure administrators, internal and external tour operators, transport companies, local tourism services providers, academic environment, other stakeholders within the private sectors.

East Coast Road is very popular in various forms of tourism business especially in Religious tourism, Heritage and Cultural tourism, Theme Park tourism, Water Sports Tourism, Golf Tourism, Medical Tourism, Weekend Getaways, Business Tourism and others. Each tourism actions is justified by different motivations and supported by certain factors. When it comes to religious tourism four factors must be taken into consideration: religious belonging and practicing a religious cult; education and culture; professional occupation and income level; infrastructure quality (transport) and tourism services provided.

### Impact of Business Dimensions of Tourism

Tourism can yield enormous socio-cultural benefits as well as devastating costs. The net effect depends upon the responsibility exercised by the various stakeholders of the industry including the public and private sectors as well as the tourists and residents. As countries have turned to tourism as a means to increase national income, employment and living standards, and to end the dependency on limited range of primary products, pressure from tourism and its associated development have begun to affect the local population (Sevign, Nicos & Jonathan, 1996).

According to Economic and Social Commission for Asia and the Pacific, every Ten Lakhs Rupees (One million Rupees) spent on developing roads in India leads to poverty reduction of over seven times, as against the same amount spent on anti-poverty programs.

Overall road transport is the primary and preferred mode of transport for most of the population and India's Road Transport System is among the most heavily utilized system in the world. It plays a pivotal role in the economic development of nation by increasing the productivity and competitiveness

### East Coast Road (ECR) and Tourism

East Coast Road is famous for its various forms of tourism destinations. It is the home place of theme park tourism, water sports tourism, religious tourism, medical tourism, educational tourism, leisure tourism, eco-tourism, volunteer tourism, marine tourism, coastal tourism, festival tourism, shopping tourism, responsible tourism, business tourism,

niche tourism, cultural and heritage tourism. Overall Kovalam, Mahabalipuram, Pondicherry, Chidambaram, Gulf of Mannar, Kanayakumari are the major tourist destinations attracting millions of tourists from all over the world.

### **Sustainable Tourism and its importance**

According to Jenkins (1991) a country formulating a tourism policy needs to address the following issues: The role of the government (active or passive); ownership and control (public and private); international versus domestic tourism; the scale of tourism development; integrated versus enclave tourism. Pi-Sunyer has also suggested that the tourists are treated as a part of the traditional guest host relationship at the initial stage tourism development. However, as the number of tourists increased, they became less and less welcome (Cohen, 1982a). Cater (1993) stated the objectives of sustainable tourism as meeting the needs of the host population for increased standards of living in the short and long term by dealing with growth in tourist numbers and safeguarding the natural environment.

### **Research Gap**

Tourism brings people of different cultures together, provides a direct contact between them and thus serves as a powerful means of diffusion of world culture. But from another perspective, tourism is a factor of acculturation which affects attitudes, alters popular beliefs, changes mentalities and spread new concepts relating to work, money and human relationships. In recent years developing countries want to generate more income through tourism, but forget to understand the negative impacts of the tourism activities. The sustainable tourism activities will be the only solution to save our natural resources for future generation. The researcher wants to fill up this gap and give suggestions for the sustainable tourism development in East Coast Road.

### **Objectives**

1. To study the tourism destinations, various forms of tourism in East Coast Road
2. To understand the Sustainable tourism development in ECR, Tamil Nadu
3. To provide the suggestions and schemes to Govt. and NGO's

### **ECR: Evolution and Existence**

East Coast Road is one of the beautiful two lane highway road in which one can enjoy driving the length of 702 km. This ECR is located on the coast of the Bay of Bengal, which began its operation by connecting Chennai city and Cuddalore via Pondicherry City, Capital of Pondicherry Union Territory. The TamilNadu government has taken several developing works in East Coast road and now this road is extended till Kanyakumari which is joined via Chidambaram, Karaikal, Nagore, Nagapattinam, Thiruthurai, Poonchi, Muthupet, Adirampattinam, Meemisal, Thondi, Ramnad. The road was formed in 1998 by Tamil Nadu Road Development Corporation by interlinking and improving a series of small village roads that were connecting the fishing villages along the coast of Bay of Bengal.

The ECR, Phase-I, was constructed and developed by Government of Tamil Nadu. ADB supported with a loan of US \$24.47 million during 1993-1998. The project was implemented by TNRDC, an organization set up in 1998 for developing the state roads under the PPP<sup>6</sup> framework. TNRDC is a 50:50 joint venture between TIDCO<sup>7</sup> and Infrastructure Leasing & Financial Services (IL&FS), a well-known infrastructure development and financial services company. This project developed as a key means of improving coastal connectivity and as a route that leads to several tourist destinations, it was felt that an improved road corridor would also lead to significant reduction in travel time and vehicle operating costs, resulting in significant economic benefits (Thillai et al. 2009)

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<sup>6</sup> Public Private Partnership

<sup>7</sup> Tamil Nadu Industrial Development Corporation

**ECR: Destinations and Tourism**

ECR road consists of calm beaches, amusement parks, adventure sports, classy restaurants, temples, heritage sites, serene backwaters, floating jetty. TTDC has identified places like heritage towns and providing quality infrastructure in the coastal region where there is tremendous potentials for different forms of Tourism. East coast road full stretch is famous for its various temples, churches, mosques, entertainment activities, volunteering activities.

**Kovalam**

Kovalam (Covelong) village is 40 K km from Chennai and just 22 km from Mahabalipuram in the East Coast Road, approximately one hour travel from Chennai and 26 minutes travel from this place to Shore Temple, World Heritage Site. This village located hardly 800 meters inside from the East Coast Road main road becoming very popular in water sports activities and religious tourism.

**Mahabalipuram**

Mahabalipuram is an UNESCO World Heritage Site recognized for its Pallava sculptures, shore temple five rathas, arjuna's penance, tiger cave, crocodile bank, sea shell museum and beautiful beach. This is the well known famous heritage tourist destination attracting millions of foreign and domestic tourists from all over the world. Indian dance festival in Mahabalipuram is the very famous festival attracting millions of tourists from various countries.

**Puducherry**

Puducherry is a Union Territory of India. It is a former French colony, consisting of four non-contiguous enclaves, or regions, and named after the largest region, Pondicherry famous for its beaches, Auroville, Aurabindo Ashram and French heritage buildings attracting millions of tourists every year.

**Karaikal**

Karaikal is a port city in the Union Territory of Puducherry. It is a former French colony. Karaikal port is also expected to provide an alternative to the Chennai and Tuticorin ports, which are the major ports in the coastline but are separated by long distance.

**Nagore**

Nagore is a town in the Nagapattinam district, Tamil Nadu, India. It is located 12 km south of Karaikal and 5 km north of Nagapattinam. The prime attraction is the renowned Nagore Dargah, a revered place of all faiths. A five centuries old Islamic shrine, Nagore Dargah attracts millions of pilgrims irrespective of caste, creed or religion.

**Vedaranyam – Kodikkarai (Point Calimere)**

Vedaranyam is a coastal town of Nagai district. This tourist destination is very close to Velankanni and Thiruthurai. Kodikkarai is a wonderland of natural resources of deer sanctuary, migratory bird watch.

**Gulf of Mannar, Marine National Park**

The Gulf of Mannar, Marine National Park is a protected area of India consisting of 21 small islands and adjacent coral reefs in the Gulf of Mannar in the Indian Ocean. It lies 1 to 10km away from the East Coast of Tamil Nadu, South India for 160 km Tuticorin and Dhanushkodi. It is the core area of the Gulf of Mannar Biosphere Reserve which includes a 10 km buffer zone around the park, including the populated coastal area. The park has a high diversity of plants and animals in its marine, intertidal and near shore habitats. Public access inside the Park is limited to glass bottom boat rides.

**Erwadi Dargah**

Erwadi Dargah is an Islamic shrine of Qutbul Hamid Badusha Sulthan Syed Ibrahim Shahid Razi, his family and followers. Muslim people are visiting this shrine with all faiths for spiritual healing. It is identified as most important pilgrimage center by the Ramanathapuram district administration.

**Kanyakumari**

Kanyakumari is a coastal town in the state of Tamil Nadu on India's southern tip. The town was known as Cape Comorin during British rule and is popular for watching sunrise and sunset over the ocean. It's also a noted pilgrimage site Bagavathi Amman Temple, dedicated to a consort of Shiva, Vivekanandar Rock, Thiruvalluvar Statue, Our Lady of Ransom Church, a center of Indian Catholicism.

**Sustainable Development**

*The 10-year framework of programmes on sustainable consumption and production patterns (10YFP) is a global framework of action to enhance international cooperation to accelerate the shift towards sustainable consumption and production (SCP) in both developed and developing countries.* The 10YFP generates collective impact through multi-stakeholder programmes and partnerships, which develop, replicate and scale up SCP policies and initiatives at all levels. The 10YFP also fosters knowledge and experience sharing, and facilitates access to technical and financial resources for developing countries (UNWTO, 2017).

**The basic principles of sustainable development**

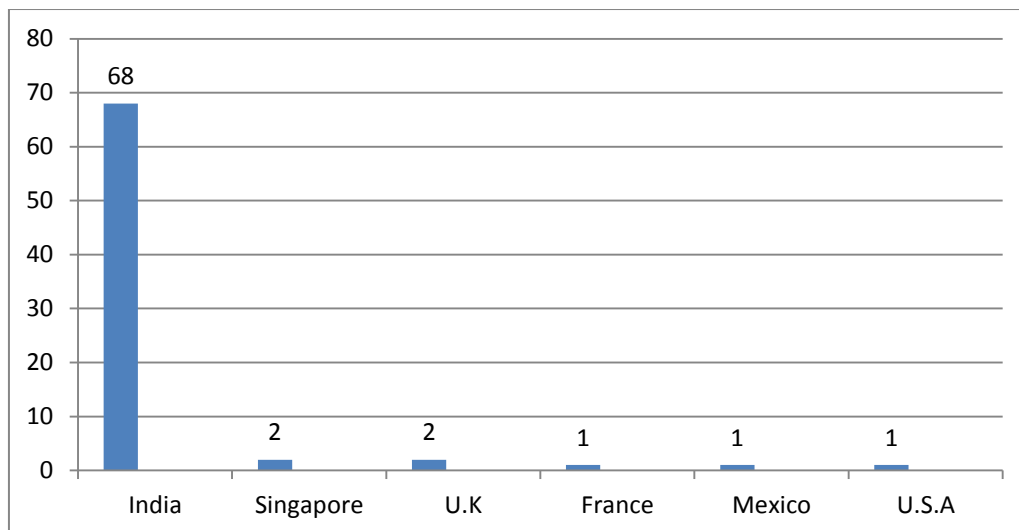
The basic principles of sustainable development make it possible to harmonise the various sectoral and development strategies with the horizontal strategy on sustainable development (hereinafter: Strategy) and they also provide a general type of guidance for determining the Strategy's priorities, more specifically defined goals and tasks, the frameworks and means of implementation, in a coordinated and harmonised way. The basic principles have been formulated, clarified, and adopted at the highest levels by the relevant bodies of both the UN and the EU (Csaba & Nikolett, 2008)

1. The principle of holistic approach.
2. Principle of intra-generational and inter-generational solidarity.
3. The principle of social justice
4. The principle of sustainable management of resources
5. The principle of integration
6. The principle of utilising local resources
7. The principle of public participation
8. The principle of social responsibility
9. The principle of precaution and prevention

**Quality of East Coast Road helping Sustainable Development**

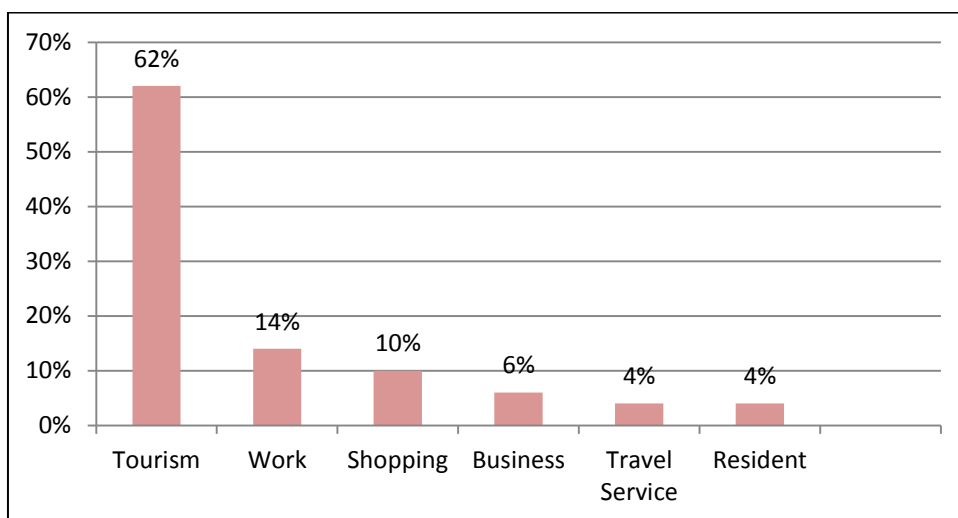
This Research aimed to assess the quality of East Coast Road in Tamil Nadu, INDIA. The Questionnaire Survey method has been adopted to achieve the objectives of the research. The questionnaire has been framed with 12 questions. The questionnaire has been given to various categories of respondents as per their purpose of travel with back ground of business, tourism, travel service provider, work area, resident, shopping, govt official. The response was collected randomly from 75 respondents from the various spots of the East Coast Road between Tiruvannamur to Mahabalipuram stretch. The spots are VGP Golden Beach Theme Park, On Road, Kovalam Beach Village in ECR and Mahabalipuram World Heritage site. The Questionnaire consists of Respondent's Profile and Main Questions. The Questionnaire has equal weightage of qualitative and quantitative aspects of questions.

Chart-1: Number of ECR Respondent's from various Countries



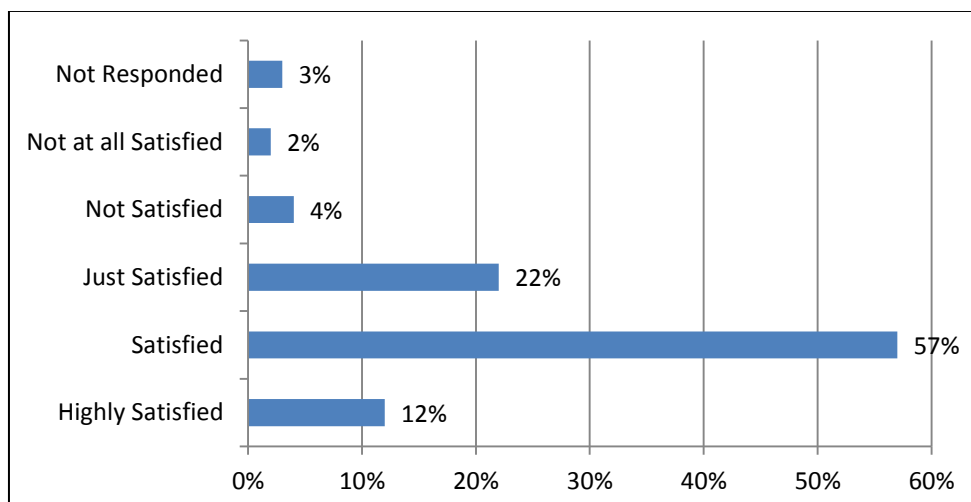
Source: Primary Data

Chart-2: Purpose of Travel to East Coast Road (%)



Source: Primary Data

Chart-3: Overall Satisfaction (%)



Source: Primary Data

As per the response from the East Coast Road User Survey 62% of the ECR Users are travelling to ECR for tourism. The Work and Shopping contribute less than 15 %. Almost six percentages of Business people are travelling in ECR. The study also indicates that travel service provider and resident people are contributing 4% each. The study reveals that 57% of ECR users are "Satisfied" and 12% are highly satisfied. The trend has been understood that 22% of users are just satisfied and remaining came under other categories. It is identified that more than 90% of travelers travelling through East Coast Road are satisfied in some way. It is seen that "not satisfied" category accounted to a total 6% of respondents and "not responded" users come to 3%.

### **Skill Development Practices**

In the Gulf of Mannar, the poor who need to diversify their livelihoods away from extractive fishing lack skills to do so. Various areas of skills development need to be offered to fishing community members like tourist guiding, English and Hindi languages learning, nature guiding with specialist areas including bird identification, plant identification, marine life identification. Snorkelling and SCUBA diving with attention to coral conservation and safety of divers, swimming training, life-saving training, hygienic food preparation, basic primary health and sanitation awareness, low-cost compost toilet building in and around the villages, hotel and lodge management in tourism areas, computer skills training, basket making, shell handicraft making, composting of kitchen wastes, Neem processing, beekeeping, improved fish drying use of solar driers, pearl cultivation, bicycle maintenance, tailoring, paper making, taxi and auto-rickshaw driving and boat operation (M.S. Swaminathan Research Foundation, 2002).

### **Sustainable Tourism Development**

The concept of sustainable tourism, as developed by the World Tourism Organisation (WTO) in the context of the United Nations sustainable development process, refers to tourist activities leading to management of all resources in such a way the economic, social and aesthetic needs can be fulfilled while maintain cultural integrity, essential ecological processes, biological diversity and life support systems (UNWTO, 2016). A livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base". (Chambers & Conway, 1991).

### **Sustainable Tourism Practices in East Coast Road**

#### **Central Marine Fisheries Research Institute (CMFRI)**

CMFRI is working on developing the livelihood of people in Kovalam village. CMFRI organises following types of need based training programme for the benefit of fishermen, farmers, researchers, academicians, administrators, students on various aspects of marine fisheries and mariculture. This institute is also working on providing employment opportunities for the kovalam village youths during the marine fisheries researches. Generally these courses are funded by ICAR<sup>8</sup>. CMFRI provides short courses for 1 to 3 days, intensive courses for 5 to 10 days, training at field for 2 to 5 days and Summer/Winter Schools for 21 days duration. The institute is working on educating the fishermen and farmers for conservation of nature and biodiversity. CMFRI is also providing training for cage farming, prawn cultivation and ornamental fish farming for this village people (CMFRI, 2012).

#### **Japan International Cooperation Agency (JICA) and Institute of Buddhist Economics, Komazawa University (IBEKU), Japan**

##### **Self Help and Leadership Training**

JICA and IBEKU jointly organised a training programme namely "Self Help and Leadership Training" for fifty women in Kovalam village for three months. This project aimed to address and resolve these issues. Community mobilisation, training of youngsters and women to be leaders and creating engineering innovations to attain total sanitation were the key aspects of the project. JICA – IBEKU funded to Nadu Colony people for constructing 45 Eco-San toilets which are made up of reinforced bamboo concrete with a sanitation pan. This aspect of the project aimed for total sanitation, as more innovative, inexpensive and environment friendly solutions (JICA, 2014).

<sup>8</sup> Indian Council of Agricultural Research

## How Eco- San Works



*Ash used to cover the faeces.*

These “Eco-San” toilets are constructed with two vaults above the ground. A specially installed squatting pan diverts the urine into small plant bed. The faeces are “deposited” into one of the vaults; after each use the faeces are covered with a cupful of ash. The first vault is used-up in six months or until it is three-quarters full; it is then sealed and the second vault used. As the second vault in use, the faeces in the first vault decompose. The decomposition process reduces the faeces in volume and kills all dangerous pathogen (JICA, 2014).

## Sustainable Tourism Development in Gulf of Mannar

### Field study centre in Krusadai Island for scientists and university students

Sustainable tourism will involve the renovation of the existing field study centre on the island. On the stipulations of the fisheries department, the place would be reserved for school, college and university students and scientist's exclusive use and would not allow ordinary leisure tourists to visit. No cooking or fires would be allowed and cooked food would have to be brought from Pamban village. Strict regulations on dumping of waste would be necessary. Renovation of the toilets to check that an appropriately sized septic tank without seepage was functional, would be essential. If there would be likelihood of seepage of sewage into the aquifer from the toilets then shallow temporary latrines would need to be dug and properly used instead (M.S. Swaminathan Research Foundation, 2002).

### Snorkelling and Scuba diving school

Snorkelling and Scuba diving facility should be developed as a private concern but with quality technical inputs on safety and precise information inputs on marine wildlife. The school should develop a snorkelling pool and pressurised trial SCUBA diving tank with artificial corals for teaching and supervising students before taking them out into the sea. Very particular care should be taken in developing safety procedures, especially in the case of scuba diving. Lessons should include not only diving technique and safe practice but should involve an obligatory lecture / video on biodiversity of the marine biosphere reserve and the importance of conserving it. (M.S. Swaminathan Research Foundation, 2002).

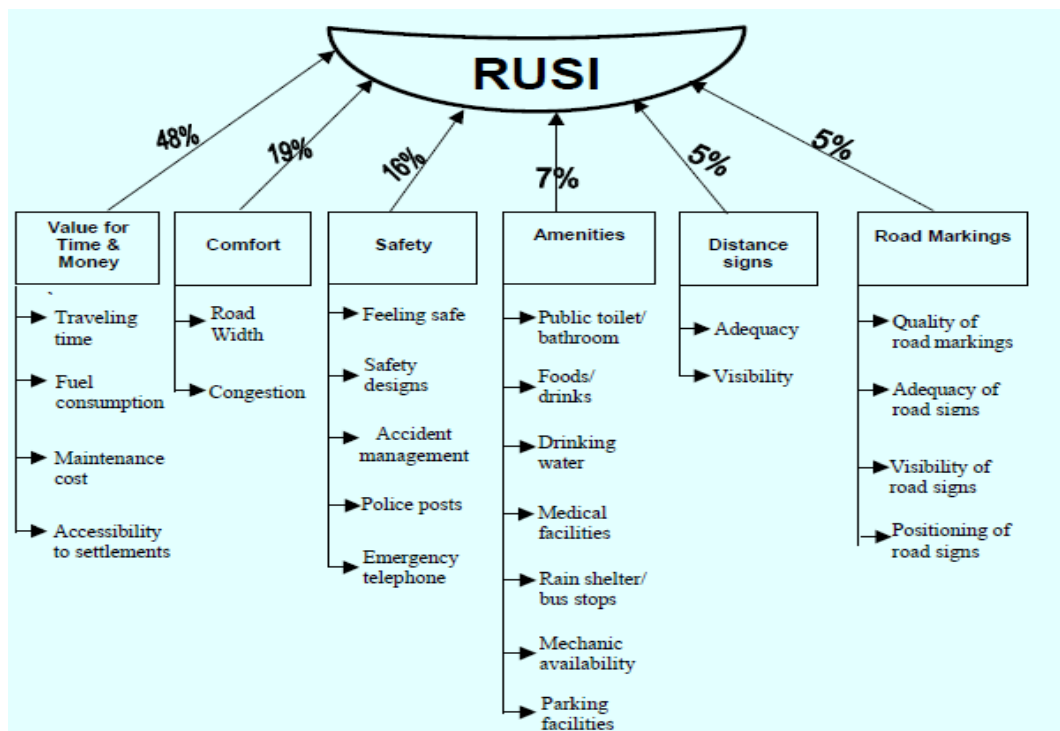
### Village Tourism

Boating and Snorkelling activities small-scale village tourism for foreign backpacker budget tourists already exists. The villagers have already built a few huts from local materials in which tourists stay from time to time. A few visitors come back repeatedly and stay for longer periods than most tourists (1-6 months), other stay a few days (M.S. Swaminathan Research Foundation, 2002).

### Eco beach resort in Dhanushkodi

The stretch of beach on the Gulf of Mannar side of the Dhanushkodi peninsula, beside the road out of Rameshwaram towards Dhanushkodi a few km beyond Ramakrishnapuram, is beautiful, relatively deserted and clean compared to the Sankumal beach. The sea is clean clear and blue but the beach slopes steeply into the sea such that the water gets deep rather quickly and strong currents may occur along the shore (M.S. Swaminathan Research Foundation, 2002).

## Road User Satisfaction Index Model

(HPRIDC<sup>9</sup>, 2007)

## Mathematical Model - Road Users' Satisfaction Index (RUSI)

Overall Satisfaction =  $(0.686) F1 + (0.262) F2 + (0.231) F3 + (0.097) F4 + (0.074) F5 + (0.069) F6$  Where

F1 = Value for time and money;

F2 = Comfort

F3 = Safety

F4 = Amenities

F5 = Distance signs

F6 = Road markings

## Findings

While tourism provides considerable economic benefits for many countries, regions and communities, its rapid expansion can also be responsible for adverse environmental, as well as socio-cultural, impact. Natural resource depletion and environmental degradation associated with tourism activities pose severe problems to many tourism rich regions. The fact that most tourists chose to maintain their relatively high patterns of consumption when they reach their destinations can be a particularly serious problem for developing countries and regions without the appropriate means for protecting their natural resources and local ecosystems from the pressure of mass tourism.

The two main areas of environmental impact of tourism are: Pressure on natural resources and damage to ecosystems. Examples of such exploitation of non-renewable tourism resources range from small fishing village in India's Kerala state, which saw its tourist sector collapse after two decades of fast growth, because inadequate disposal of solid waste, to several places in the industrialized world, such as Italy's Adriatic coast and Germany's Black Forest. It can also be argued that environmental pollution and urban sprawl tend to undermine further tourist development in major urban destinations in developing countries, such as Bangkok, Cairo and Mexico City. In the

<sup>9</sup>Himachal Pradesh Road Infrastructure Development Corporation

context of this research ecotourism refers to tourism that is pro-poor, pro-nature, participatory and involving a learning experience and cultural exchange for visitors and hosts. This paper identifies certain eco-enterprise opportunities. These may be directly related to tourism, may be oriented towards reducing negative effects of tourism or may be alternative livelihood options unrelated to tourism.

## Suggestions

Sustainable Tourism Development, it is felt, can be achieved through the following suggestions

1. The various types of tourism that are available along ECR need tourism specific development which are exclusive for that type, say Heritage and Sculpture based development at Mahabalipuram.
2. Introduction of exclusive tourist transport for each tourist attraction along ECR.
3. Enforcement of environmental assessment and enhancement of environmental quality at regular intervals at the tourist destinations.
4. Introduction of Entrepreneurial Development Programmes (EDP's) at these destinations based on the seasons of the Destinations.
5. Improvement to the Safety Standards on all aspects such as Police, Transport and other basic amenities.
6. Organising Regular Events for Promotion of Tourism at these destinations and thereby creating specific tourism seasons.
7. Development of Crisis Management Centres to face the Turbulent climatic conditions.

## Conclusion

East coast road destinations are to be equipped with environmental sustainability and it must remain a key component of sustainable tourism strategies. East Coast Road (ECR), a premier road in the state of Tamil Nadu, India, has provided wonderful connectivity, economic and social development from its inception. The present study has provided an insight into the propitiations of tourism among East Coast Road. Over all in India, another challenge for the tourism community is to device ways and means to place poverty reduction at the centre of tourism planning, development and management. This will also require the genuine community participation, greater technical and financial assistance, human resource development, and institutional capacity building. Sustainable tourism development is given the potential importance of tourism activities on national and international efforts to reduce poverty. A strong case for promoting a pro-poor tourism (PPT) and community based tourism (CPT) approach; It is sincerely hoped that these suggestions will provide better directions for the administrators of East Coast Road to make it Excellent East Coast Road of the World.

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## **An Analysis on Sustainable Ecotourism Practices in Kolli Hills of Salem District in Tamil Nadu**

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### **Abstract**

*Tourism is one of the world's largest industries and one of the fastest growing economic sectors. It has a multitude of impacts, both positive and negative, on people's lives and on the environment. Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development.*

*This paper is an attempt to assess the success of sustainable ecotourism practices applied in Kolli Hills in view of tourists visiting the destination. The study has been done by using both the Primary and secondary data. The investigation was done in six major spots namely Agayaganga waterfalls, Arapaleeswar temple, Botanical garden, Boat house, Masi aruvi and Semmedu in Kolli hills, Namakkal district. Data collection was done by using a structured interview schedule. To understand the current status of sustainable tourism in the destination, an in-depth analysis has been undertaken and as per the findings, required suggestions enlisted. Based on the results a detailed conclusion has been given.*

**Keywords:** sustainable tourism, Kolli Hills, ecotourism, bio diversity, eco system

**Main Conference Topic:** Sustainability, Economy and Tourism

### **Introduction**

Tourism in India was seen as a mere service sector for a longtime. It has now been recognized as an export industry due to its multiple advantages. Though tourism gained importance belatedly, it has grown at a rapid pace and enhanced its share in international tourist arrivals as well as in foreign exchange earnings. Now, it is one of the largest service industries in India, with a great contribution to national Gross Domestic Product (GDP) and creation of employment in India. Sustainable tourism, one that establishes a suitable balance between the environmental, economic and socio-cultural aspects of tourism development, plays an important role in conserving biodiversity. It attempts to minimize its impact on the environment and local culture so that it will be available for future generations, while contributing to generate income, employment, and the conservation of local ecosystems. By doing so, sustainable tourism maximizes the positive contribution of tourism to biodiversity conservation and thus to poverty reduction and the achievement of common goals towards sustainable development.

Sustainable tourism provides crucial economic incentives for habitat protection. Revenues from visitor spending are often channeled back into nature conservation or capacity building programmes for local communities to manage protected areas. Furthermore, tourism can be a key vehicle in raising awareness and fostering positive behaviour change for biodiversity conservation among the millions of people travelling the globe every year. Biodiversity enabled sustainable tourism is pertinent for a country like India where both biological and cultural diversity occur rich and attractive. The diversity at the level of ecosystems, species, genes, local communities, languages, arts, customs, crafts, cuisines and curatives, offer a great deal to tourism economy, and thereby case for conservation of nature and culture.

### **Objectives of the Study**

1. To analyze the socio-economic contribution of sustainable tourism in the study area.
2. To study the ecotourism potential and tourist's perception in Kolli Hills.
3. To examine the importance of eco-tourism development.
4. To offer the recommendations to solve the problems of sustainable ecotourism in the study area.

## Research Design

This study is descriptive in nature. The study is intended to explore the eco-tourism of Kolli hills and investigates the tourist's perceptions on available tourist resources at the destination.

## Sources of Data

The study has been done by collecting primary and secondary data. The researcher has adopted interview schedule and questionnaire for collecting primary data. The secondary data regarding tourism spots, area, location, arrival of tourist and other important information was collected directly from the statistical records of Tamil Nadu Tourism Development Corporation (TTDC). Some other relevant data has been retrieved from magazines and books. Informal discussions were also held with the tourism department officials, local people, shopkeepers, friends and relatives for getting some more information and ideas pertaining to this study.

## Sample Units

In the selection of sample units for the sake of time, convenience and simplicity the researcher has adopted cluster sampling. According to this technique six major spots namely *Agayaganga waterfalls, Arapaleeswar temple, Botanical garden, Boat house, Masi aruvi and Semmedu in Kolli hills* were taken as sample. Sample size is restricted to 100 respondents.

## Review of Literature

Tourism interacts with environment in a two-way process. The environmental resources provide a critical input for the production of tourism product and virtually the tourism development of an area is dependent on the availability of attractive natural and manmade resources (Briassoulis and Straten, 1992). Qualitative and quantitative differences in distribution of environmental resources in various regions account for differences in tourism development. On the other hand, tourism produces a variety of unwanted products that are disposed off into the environment; causing negative impacts on the environment of the host area. Among the negative impacts identified by OECD (1980) are changes causing permanent restricting of the environment, the generation of waste products, tourist activities and population effects.

Singh (1989) studied the impact of tourism on host environments by assessing the resident's perceptions through a sample survey. The findings of his study in physical environment revealed that, by and large, tourism has not damaged the landscape appeal and scenic beauty, except a few ecological blights. The interaction of tourism and the environment has also been widely researched by Krippendorf (1982), Gunn (1994), Hunter and Green (1995), Mieczkowski (1995) and Batta (2000).

## Introduction to Kolli Hills

Kolli Hills is a small mountain range located in central Tamil Nadu in India. The mountains are about 1000 to 1300 m in height and cover an area of approximately 280 km. The Kolli Hills are part of the Eastern Ghats, which is a mountain range that runs mostly parallel to the east coast of South India. The mountains are relatively untouched by tourism and still retain their natural beauty. They were sometimes known as "Kolli Molo", the "Mountains of Death", due to the many diseases there such as malaria.

Tucked away between the Pachaimalai and Kalrayan hill ranges of the Eastern Ghats in South India, Kolli Hills (or Kollimalai, in Tamil) is indeed a remarkable



spot in Tamil Nadu. Unlike man-made Ooty and Kodai, Kolli Hills is traditional hill country, the land of friendly tribes, and a part of the erstwhile kingdom of Valvil Ori, a Tamil king who was renowned for his generosity and valour. Formed in the shape of an open square, these hills were also known as Chathuragiri, literally meaning square-shaped hills.

Located at an ever-so-pleasant altitude ranging from 1000 to 1300 metres above mean sea level, Kolli hills enjoys a salubrious climate throughout the year. This fertile pocket in Namakkal district is where exotic tropical fruits and medicinal plants grow in plenty. The land is still relatively untouched by time, with 16 quaint little tribal villages that once constituted the hill kingdom of Ori. Much of the charm of this hill country still remains. There are many such legends and interesting myths associated with these hills, which make it all the more interesting and worth visiting. The drive up the 70-hairpin bend Ghat road is truly an enjoyable experience. Contrary to one's expectations, the Ghat road here is quite wide and well-laid, thanks to the tribal welfare funds allotted by the government. The road winds through 13 miles of beautiful scenery and thick forests, where you could pause just to take in the fresh mountain air, or just stop and stare at the monkeys, mongooses or squirrels that frolic on the hillsides.

### **Tourism Promotions Done in Kolli Hills**

In an attempt to attract more tourists and promote eco-tourism, the Tourism Department, along with the District Administration and Forest Department, has taken up initiatives in Kolli Hills of Namakkal district. The initiatives include creation of a botanical garden, improving a lake in Vasalorpatti and boating there, landscaping near Arapaleeswarar temple, providing of hand rails along the way to Akasa Ganga waterfalls, a trekking shed near the falls, and development of the approach road to Maasilla waterfalls. A total of Rs.4.3 crore was allocated by the Tourism Department for taking up the activities. Apart from this, the Forest Department is improving a seven-kilometre trekking path between Kolli Hills and Karavalli RF, which is slowly becoming a popular location in the small hill stations, the forest officials say.

The trekking route available in Kolli Hills is considered as medium trekking route which could be covered by in about three to four hours. Though not much wildlife is sighted in this part of the Eastern Ghats, one can still enjoy the trek. At present, a large number of college and school students and NSS volunteers show keen interest in the trekking programme. The Forest Department is planning one camp a month for which the number of participants will be restricted to 30.

### **Need of Sustainable Tourism Practices**

Sustainable tourism practices have been, luckily, gaining in importance the past couple of years. Sustainable tourism is being defined by the World Tourism Organization (WTO, 2004) as follows:

Tourism is one of the world's largest industries and one of the fastest growing economic sectors. It has a multitude of impacts, both positive and negative, on people's lives and on the environment. "Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.

Thus, sustainable tourism should:

1. Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
2. Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
3. Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Of course, it is important that sustainable tourism also maintains a high level of tourist satisfaction and ensures a meaningful experience to the tourist.

Eco Tourism has to be developed on sustainable basis without causing damage to environment and wildlife by integrating facilities at hill stations, wild life sanctuaries and national parks for the benefit of tourists. While promoting

eco-friendly destinations, the carrying capacity of the destinations will be taken into consideration and the local community is to be made actively involved in all developmental activities, to ensure inclusive development.

### Initiatives of the Government on Development of Sustainable Tourism

The Ministry of Tourism, Government of India, has launched the “Swadesh Darshan” scheme with a vision to develop theme based tourist circuits on the principles of high tourist value, competitiveness and sustainability in an integrated manner by synergizing efforts to focus on needs and concerns of all stakeholders to enrich tourist experience and enhance employment opportunities. The Department of Tourism has identified the consultant for the preparation of DPR with focus on development of world class tourism product.

TTDC has formed the Eco-Tourism wing in 2009 with the objective of promoting Eco-Tourism in Tamilnadu in a big way. The Eco-tourism wing is headed by an officer in the rank of Chief Conservator of forests. The following trekking tours were organized by TTDC through Eco Tourism Wing. Shervarayan Hills (Yercaud) - 3 times, Top Slip – Aazhiyar - 9 times, Thirusoolam Hill - 3 times and Kolli Hills - 4 times.

The TTDC operates these tours to inculcate high achievement motivation in the young minds and profit is not given priority while performing them. The participants were able to appreciate nature and the need to conserve it. They have given an excellent feedback about the trekking programme. Eco tourism wing is also taking steps to provide Tree Top House in Wild Life Sanctuaries in Tamilnadu. It has been proposed to have a shelf of projects to give importance to the promotion of Eco Tourism in the State. The wing has drafted an elaborate eco-tourism policy in consultation with the Environment and Forest Department and would be released shortly. Efforts have been taken to make all the units run by TTDC as eco-friendly institutions with green practices and avoid non degradable materials. Intensive tree plantations will be done in resorts run by TTDC and kitchen gardens will be raised in units with adequate space to use the products for culinary purposes. In the coming years, it is proposed to plant grown up trees in various TTDC units across the state.

The vision is to make Tamil Nadu a world renowned destination specializing in sustainable tourism through focused efforts on creating synergy among all stakeholders, encouraging capacity building and public-private partnerships with revenue generating strategies. Hill Stations, Waterfalls, Forests, Bird Sanctuaries and beaches are available in plenty for those who evince interest in nature. TTDC has set up a separate Eco-Tourism wing including an officer from the Forest Department. The vision is to make Tamil Nadu a world renowned destination specializing in sustainable tourism through focused efforts on creating synergy among all stakeholders, encouraging capacity building and public-private partnership with revenue generating strategies. "Take the memories from here - Leave only your foot print - not the litter" should be the Motto of every tourist.

### Data Analysis and Interpretation

Survey of tourists was carried out at Kolli Hills to assess the visitors' perception about various facilities and services, their primary reason to visit Kolli Hills, average stay, spending patterns and usage of various facilities and services. The structured questionnaire was administered for the purpose of collecting the required data.

#### Age Wise Classification of Tourists

Age Group	Frequency	Percentage
Below 20	5	5 %
21 to 25	20	20 %
26 to 40	52	52 %
41 to 60	15	15 %
60 and above	8	8 %
Total	100	100 %

The above table shows that the tourists have been classified into five categories. It denotes that most of the tourists i.e 52% belongs to the age group of 26 to 40 years while the next 20% of tourists were in the group of 21 to 25 years. 15% of tourists were identified as the age group of 41 to 60 years. And the percentage of age group of below 20 was small i.e 5%. Tourists above 60 years were 8%.

### Frequency of Visits by Tourists

No.	Frequency of visits	% of Respondents
1	First time visitors	60 %
2	Visited twice before	30 %
3	Visited more than twice before	10 %

Majority of tourists i.e 60% were first time visitors to Kolli Hills. 30% of respondents expressed that they have visited Kolli Hills twice before where 10% of respondents have the experience of more than two visits.

### Sources of Information Regarding Kolli Hills

S. No.	Source	Percentage
1.	Newspaper / Magazines	18.8%
2.	Guide books	21 %
3.	Travel agents	12.2 %
4.	Friends relatives	46.2%
5.	Others	1.8 %

For the visitors the major source of information about Kolli Hills was through friends and relatives that constitute 46.2 % 21% of them got information through guidebooks. 18.8% of the visitors through news papers/magazines. Only 12.24% got information through travel agents. Only 1.8 % of them got through other sources.

### Purpose of visit

S. No.	Purpose of visit	Percentage
1.	Study	14 %
2.	Leisure	24 %
3.	Nature watch	36 %
4.	Adventure tour	26 %

The study about the purpose of visit shows 24 % of the visitors visit Kolli Hills for leisure 36% of them are interested in nature watch. 26 % of them are interested in adventure tour. 14 % are interested in studying about the ecotourism spots.

### Expectation of Tourists from Kolli Hills

S. No.	Expectation	Percentage
1	Scenic beauty	41.36 %
2	Originality of nature	32.23 %
3	Peace of mind	26.41 %

It shows that 41.36 % of the visitors expect scenic beauty from the tour of Kolli Hills 32.2 % of the visitors expect the originality of nature and 26.41% seek peace of mind.

### Type of Entertainment

S. No.	Entertainment	Percentage
1	Trekking	37 %
2	Bathing in Waterfalls	30 %

3	Roaming by walk	22 %
4	Boating	11 %

It shows that 37 % of the visitors are interested in trekking in hills. 30 % of them are interested to taking bath in waterfalls. 22 % of them are interested in roaming by walk and only 11 % are interested in boating (available in Boat house).

### Preference of Staying

S. No.	Accommodation	Percentage
1	Forest rest houses	24 %
2	Guest house	16 %
3	Cottages	23 %
4	Other Local Accommodation	37 %

It shows that 37 % of them prefer local accommodation, 24 % prefer forest rest houses. 23% of people prefer to stay in cottages and only 16 % of them in guest houses.

### Feedback of Tourists about Facilities available at the destination

Type of Facility	Response of Tourists			
	Good	Average	Poor	No Opinion
Quality of Accommodation	45	20	5	30
Availability of Transport	25	40	10	25
Quality of Herbs and Spices sold	60	30	5	5
Quality of food	28	42	15	15
Availability of recreation	48	28	16	8

From the study it has been found that the accommodation facilities were good for 45% of the visitors, 20 % feel satisfactory and 5% of them felt poor. Majority of respondents revealed that transport facilities available at Kolli Hills are average. 60% of tourists were happy about the quality of spices purchased during their visit at Kolli Hills. Standard of food in Kolli Hills also has been rated as average by most number of tourists.

### Findings and Suggestions

From the discussion, it is very clear that the development of sustainable ecotourism in Kolli Hills could be achieved provided the existing problems are solved. The better remedies would be:

- Promoting eco-friendly wildlife tourism, which could contribute promotion in harmony with the measures for pattern of eco system.
- Close co-operation between officials in various departments especially the forest and tourism department in order to develop wildlife tourism in the state.
- Establishing the natural spots like Kolli Hills as tourist destinations by using effective marketing tools.
- Creation of more accommodation facilities in the ecotourism centers.
- Implementing an efficient marketing strategy which also involves hotels and other private firms in the state.
- Sign boards showing way and other information should be kept on appropriate languages.
- Necessary action should be taken to avoid disturbing the ecosystem.
- Public should be educated more about the positive impacts of Sustainable and ecotourism practices.
- Involvement of locals and tribes in promotion of ecotourism may result in appreciable outcome.

## Conclusion

Eco-tourism is an upcoming activity, especially suited for the lofty mountain areas like Kolli Hills. Cebbalos Lascurian has defined ecotourism as "Traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals as well as array of existing cultural manifestations. In this regard the following implications of the tourism development in the study area need consideration.

- Transportation and communication network of the study area needs immediate attention. An utmost care in lying of roads and communication network is required because of the fragile ecosystem of the area.
- Increase in number of accommodation facilities is the basic need of nature lovers visiting Kolli hills. In this regard local people may also avail the benefits of tourism development in tourist spot. So it may be better choice to consider the ways and means to stimulate the locals to invest in hotel business.
- The government has to improve the options provided to tribes to sell their crops, spices and herbs cultivated in the area. It has been found from the study that Kolli Hills is considered as one of the prominent areas to purchase quality herbs and spices.
- Environment Impact Assessment study has to be carried out for the development plans in Kolli Hills.
- Visitor Management system should be formulated for attracting tourists to this lesser known tourism destination.
- The foremost problem is that enough investment funds are not available for providing strong infrastructure facilities. Lack of adequate infrastructure in majority of the tourist spots that is facilities such as accommodation in tents, tree top houses, etc in interior forests are not available. This situation has to be changed.
- Inadequate safety and security measures have to be rectified.
- Lack of good communication and food facilities should be altered to the expectations of the tourists.
- Number of guides who are trained to communicate in explaining about the ecotourism in Tamil Nadu has to be increased.
- Co-operation between forest officials and Tourism department has to be developed.
- Budget class accommodation will prove to be boon to domestic tourists.

Eco-tourism information centre should cater to the multifarious needs of the eco-tourists. Interpretation programs has to be well designed to educate the visitors on the biological heritage and the need for its conservation. Nature education camps for various target groups, handled by professionals has to be arranged in the wilderness free of cost on advance booking so as to enlist the goodwill support and participations of the public in biological conservation. Eco-tourism travel in India on the whole, however restricted to the level of ecosystems, often wild life sanctuaries, forests, lofty mountain terrains, beaches and to some extent the indigenous cultural landscapes. The eco- tourism sector is managed in a centralized manner by mostly the private industry and government tourism or forest departments. Inclusion of agro-ecosystems, diversity of genes in crops, farm animals, fish, medicinal plants, and promotion of biodiversity linked cultural heritage and effective participation of local communities in tourism sector can contribute significantly to sustainable and inclusive development of the rural India.

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## Market Reach of snacks with special reference to Ernakulam district

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### Abstract

*Kerala, which is famous as Gods own Country in world tourist map, is also popular for its ethnic snacks. Now, what is snack? Snack is something consumed between regular foods timings. Snack can be traditional snacks and modern snacks of which majority of traditional snacks are ethnic. While travelling along the length and breadth of Kerala, we come across nearly hundred types of snacks. Among this, Banana chips requires special mention. Modern snacks can be viewed as new generation snack which concentrates on product, price, place and promotion which finally decides the market reach of the snack brand. Competition scene is fierce with brands fighting each other for stomach share with innovative promotion techniques. This study aims to elucidate the determining factors which underline the market reach of snack products in particular; in Ernakulam district which is considered as the Queen of Arabian Sea and has welcomed a lot of cultures to this part of the country. With over ten thousand outlets (both FMCG – Fast Moving Consumer Goods, Hotels and Resorts channel), this district holds immense potential for the business of snacks.*

**Keywords:** traditional snacks, modern snacks, per capita sales, dealer per lakh

**Main Conference Topic:** Global Sustainability

### Introduction

Kerala enjoys promising figures for key human development indices. Basically Kerala is a consumer state with people depending on outside supply of daily commodities. Essential commodities come from neighboring states. But Small and Medium Enterprises based on food items as raw materials is showing a positive trend in the state too. This is boosting the economy from the bottom of the pyramid. Increasing spread of software industry and cross-migration in Kerala has led to the increase of disposable income which created lifestyle changes. This also has led to the growth of QSR – Quick Service Restaurants; like KFC, Chicken Chicago, Mc Donald, Dominos Pizza, and Chick King Etc. Many of these chains are international chains which operate in the country as franchisee models. These are hotspots among the growing generation with considerable crowds particularly during weekends which has triggered the business of snacks. The concept of weekend dine-outs and family tours which was not common in Kerala about a decade back has become routine affair among Kerala families which clearly indicates increase of disposable income and change in spending habits.

Out of the fourteen districts of Kerala, Ernakulam district is situated in the central part of the state and is the home to 12% of the Kerala population. This district is known as the commercial capital of Kerala, with Kochi port and Nedumbassery International airport, this area of the state is known for its business houses. Area from Nedumbassery International airport to Aroor and Cochin port is famous as the industrial belt of the state. Ernakulam district is the third most populous district in Kerala with a lot of people comes in daily for work and business activities. This area of the state is famous for its metro culture with lot of foreigners visiting this part of the country.

From ancient times<sup>[1]</sup> Ernakulam district has played a part in the political history of south India. Lot of foreign civilizations like the Jews, Syrians, Arabs, Chinese, Dutch, British and Portuguese seafarers followed the sea route to Kingdom of Cochin and left their impressions in the town searching for the spices and trading scope. Apart from all this, Ernakulam district has extensive sea cost with lot of rivers, some of the biggest in the region with beautiful backwaters. Recently the area has witnessed a jump in infra structure and lot of growing business opportunities awaits investors. Local government has initiated a lot of green initiatives to upraise the concept of global sustainability and to maintain the fragile ecosystem.

According to Mr. Thomas T Thomas<sup>[2]</sup>, majority of industries located in the Industrial areas of Ernakulam district are sick. The study comprised of five thrust areas in which Food was a prominent area, food items selected for this study included Bread, Biscuits, Pickles and Spices. But units that are spread to rural & urban areas were healthy with clear indication of generating profits.

During the last two decades, people of Kerala have increased disposable incomes and there by standard of living has improved a lot. This has significant reflections in the way of life including food habits. A major change in food habit is the increased consumption of food from outside the home and a resultant outcome is the development of Bakeries – both stand alone as well as chains.

Snacking is an ever increasing business in Kerala. Kerala is famous for its traditional snacks. The stomach share of traditional snacks is challenged by organized modern snacks. However, organized snacks is gaining increasing momentum among young generation due to various socio-economic factors. High education standards, 100% literacy rate and declining trend in infant mortality has stabilized Kerala economy which also lead to the growth of nuclear families and better health standards. Increasing awareness in personal hygiene and food hygiene has created more demand for packaged snacks in this part of the country. Packaging is everywhere and food packaging is specific with unique dimensions for 3S in Packaging – safety, sale and satisfaction; which again is gathering revenue for snacking companies in Kerala.

Twenty years back Kerala had lot of local tea shops which was centers of attraction for local fried snacks. This concept has now changed and concept of bakeries has been spread throughout this part of the country. Local bakery is viewed as a coffee joint with considerable spread of modern and traditional snacks. About forty per cent of the Rs.5,000 crore markets for snacks in Kerala is catered by the organized segment. This organized snack segment is dominated by big FMCG companies such as Pepsi (Lay's, Kurkure), ITC (Bingo), Kellogg's (Pringles) and players such as Haldiram's. The demand for organized snack foods has grown at a compounded annual growth rate (CAGR) of fourteen per cent from 2012 to 2016 and is expected to grow at a similar CAGR in the next five years. Market trends indicates that, during next five years the share of organized segment is expected to move up to fifty percent, which throws out great business opportunity in the snacking scene of Kerala. This has also lead to the growth of many regional organized players like MTR, Maiyas, Yellow Diamond (Prataap Snacks Ltd), Balaji Namkeens (Wafers) etc; which sells popular items within limited geographic regions, which is showing presence in Kerala also. Notable brands of this type in Kerala are kappo and devu which has considerably extensive distribution chains. These companies manufactures chips, savouries, namkeens such as sev and extruded snacks such as rings, puffs and pellets assimilating local flavors.

Kerala is more a consumer state rather than a producer state. Kerala is a metropolis in every mile – a state with no urban / rural distinction. Kerala has a vibrant market of 30 million people spread over 38,863 Sq.kms. This 100 % literate state has only 3.7 % of the total Indian population but accounts for 12 % of the Indian consumer market. Traditionally Kerala is a market for banana chips & cassava chips. Under threat from brands like Lays & Bingo, the local Industry is trying to make the traditional products more appealing to the young generation. Local bakery industry in Kerala is highly evolved, even though it is somewhat un-organized. Every bakery is having own products and apart from this there are niche brands which supplies to routes. But the organized snacks sector is showing the same trend like other parts of the country.

Over the past few years, the market has witnessed a slew of activities, the emergence of new players, the expansion of snacks portfolio through continuous product innovations, aggressive marketing campaigns to establish consumer connect, shift in consumption with increasing demand for convenience, etc. Going forward, the prospects for the branded snacks market remain bright in Kerala.

#### **Statement of the problem:**

Ernakulam district being the most employment generating district in the region, the inflow and outflow of working class has made the district most viable for any business to thrive. This has made the growth of retail outlets and consumer contact points to grow in a rapid face which boosts the development of the region. When looking into snacking industry, it is interesting to watch how they are distributing their products? What will be the average market reach of brands? Also it is worthwhile to know the various factors affecting profitability of business.

#### **Objective of the study:**

- To study the market reach of snack brands in Ernakulam district.
- To examine the factors affecting profitability of Snack business.

- To assess the distribution strategy of snacks portfolio.

### Methodology

The study is descriptive in nature. Both Secondary and Primary data are used for the study. Critical insights were drawn on the topic, by observations and expert interactions with entrepreneurs and marketing experts. Primary data regarding the variables like number of outlets, category of outlets, distribution reach and factors affecting profitability was measured by a questionnaire. Census survey method was used, since the outlets were to be classified.

### Review of Literature

Snacking is a habit in any civilization. People snack for –

- a) Time pass
- b) Tea time
- c) In social corners
- d) On occasions / celebrations
- e) For breakfast

### Meaning and Classification of “Snack”:

Ethnic snacks are always a center of attraction in any geography. Kerala also is famous for its ethnic dishes and snacks. This area of the globe is also famous for its varied culinary habit which changes in flavor in every forty kilometers. Over hundred types of snacks can be identified in Kerala. These snacks are available not only in Bakeries but also in local tea shops called popularly as Chayakada. Now a day's lot of small local niche players are doing the business of snack with limited area supplies and concentrating on some specialized products. This snacking habit and ethnic dimensions are creating a lively hood for thousands of people. However, for a clear understanding of the pattern and trends we need to have a classification of snacks in general.

Popular snacks can be divided in to two types and various subsets as per the matrix given below:

**Table 1 Snack Brief: Classification of Snacks (Source- Secondary Data)**

SNACKS					
Traditional Snacks				Modern Snacks	
Fried Snacks	Steamed Snacks	Liquid snacks - Payasams	Others	Fried Packed Branded snacks	Cake, Rusk, Bread, Burgers, Biscuits & Noodles, Dough
Banana Chips	Kozhikotta	Semiya – Extrusion & pellets	Elanchi	Lays	Stand alone Bakeries
Jack fruit Chips	Elayada	Paladapradhaman	Kinnathappam	Cheetos	Bakery Chains
Tapioca Chips	Jackfruit Ada	Arypayasam	Vada	Bingo	Baking Companies
Sweet items	Vatta appam	Palpayasam	Unniappam	Kurkhure	Pizza corners
Ground Nut Fry			Samoosa	Yamittos	Noodles
Mixturer			Puffs	Kappo	

Achappam			Halwa	Dorithos	
Kozhalappam			Ethakka appam		

### Traditional Snacks

Traditional snacks occupy a prominent space in the life of every Keralite. Among this fried snack is most important. Chips made out of banana are quite popular among local flock and visitors. Banana is made into slender splits and fried before it becomes ripe. This type of Banana is endemic to Kerala and in local vernacular it is called “Nendran”<sup>[3]</sup> or Ethakai (Botanically known as *Musa Paradisica*). Banana chips are fried in coconut oil, crisp and salty with a hint of sweetness nevertheless to mention this food item is mouth watery. Jack fruit ( Botanically *Artocarpus heterophyllus*) is a fibrous sticky fruit and acts as a bottle brush when consumed. Chips made out Jack fruit are famous in Kerala. Tapioca or Kasava (Botanically *Manihot Utilissima*) is a tuberous crop and starchy product. Fried tapiocas (Kasawa) are famous evening snacks. Ground nut fry and mixture are popular items. Mixture is made of groundnut flour and actually is a mixture of various items. It is understood that the taste of savories varies from area to area.

Steamed snacks are rice based items with proper filling, prominently with coconut. Malayalies are predominantly rice eaters and the shift towards wheat is slow but progressive. Adas are usually made with sweet fillings.

Payasams are sweet liquid dishes usually made with milk (milk form dairy or Coconut milk). Coconut is known as Kera ( Botanically *Cocos Nucifera*). They are served for occasions. Payasams can be made with Semiya, Rice or Wheat. This section comes under the classification of liquid snacks.

There are also other traditional snacks of Regional importance. Elanchi and Kinnathappam are speciality dishes of Malabar – Northern Kerala. Vada, Ethaka appam, Unniappam, Samosa & Puffs forms the daily evening snack of any average Malayalie.

Halwa is a worth mentioning snack and Halwa from Calicut (Kozhikode) requires special mention. Halwa looks like sweet meat and Europeans have named a street at Calicut – S.M.Street (Sweet Meat Street). Particularly to mention is that the northern part of Kerala goes for more sweet dishes.

Many of the traditional snacks are not properly marketed but only sold in local shops with very little commercial exports. This can be attributed towards the availability of raw materials and perish ability of the product.

### Modern Snacks

Modern snacks are mainly packed branded snacks. Across the state, we can find so many brands of potato chips<sup>[4]</sup>. All these brands are competing for attention more precisely for getting the desired stomach share. These include Lay's from Pepsico, Bingo from ITC, Pringles from Kellogg's. Recently many of these multinational players have come up with brands of nachos and tortilla chips. An excellent example for this is Doritos an exotic variant from faraway Mexico.

The funniest part is that Kerala's own Banana chips is not represented by a brand even though some minor efforts are done by some players to show the presence.

Some Indian brands like Yellow diamond & Haldiram's is giving product offers of Indian flavor in branded packing. Apart from this all varieties are niche players. Multinational's have also come up with Indian flavour's like Kurkhure to woo the local population. Second option which is so prominent in Kerala is baked snacks which comes under the organized sector bakeries. Bakeries are a good time business in Kerala and prominent snacking items are Cakes, Rusk, Bread, Burgers, Cookies & Biscuits.

These products are fed in the market place through channels like –

- Stand alone Bakeries
- Bakery Chains – to name a few like KR Bakeries, Best bakeries
- Baking Companies – Brands like Modern, Elite, Olio, Iris, Orkid and many regional brands.

- d) Pizza Corners – KFC, SFC, Mc Donald, Dominos pizza, Chick King etc.- served through QSR – Quick Service Restaurants.
- e) Noodles - Supplied by multinational players like Maggi (Nestle), ITC and some regional players like Fruitomans etc.

Biscuits are mainly supplied by organized players but for cookies bakers rely on own facilities even though organized players play a prominent role in the cookies market. Kerala is considered as a prominent Cookies market in India with considerable share for organized players like Britannia, Parle, Unibic along with lot of niche players.

Noodles are a staple food in many cultures. It is made out of Wheat flour through extrusion process. In Kerala it is a snacking concept even though it serves as a meal option which is mainly supplied by Maggie & ITC with presence of some regional players. Recently traders suffered a setback due to Maggie issue in market.

As per statistics of Kerala Bake (An association of Kerala Bakers); there are nearly fifty thousand bakery licenses in Kerala. Excluding hotels and street food, outlets who are selling packed snacks comes over seventy five thousand with a good penetration of super markets (Modern Trade) – margin free outlets, stand-alone super markets and national chains of prominence. Super markets is seen as a scene of family purchase where in all members of the family comes in for purchase. Usually many of the modern trade outlets are linked with a Bakery counter and display areas of this category of outlets are seen as a centre of happenings where in new introductions and promotions happens for the products particularly snacks, in specific namkeens.

Both traditional and modern snacks are popular, but many of the traditional snack items are limited as snacking options in individual tea shops or stand-alone bakeries, due to the difficulty in getting product shelf life and logistics. But thirty percentage of the above items are successfully marketed and sold by organized small scale players in Kerala. Every district or town is having dozens of small scale players which occupy niche markets.

### **Presence of Global & National players in the Snacking scene of Kerala.**

Once we walk across the streets of many Indian cities, we see a lot of varieties of snacks which form the integral part of an average citizen's diet. Two decades ago, the concept of snacks meant homemade fried snacks like chips, sev etc but now the trend has changed a lot due to changing life styles and income levels. Also to mention branded snack market which catered mainly western snacks started including traditional snacks in their brand portfolio, which again helped in gaining momentum in the habit of snacking.

Kerala being a part of India has also unique dietary habits and tastes. Due to this, Kerala snack market is pretty unorganized <sup>[5]</sup> with a lot of regional players dominating the scene with innumerable snack variants. Many players are bringing inn product innovations which are again sought by young Indians who are health conscious. Many of the regional players are having a slim product portfolio with usually a single category which caters as the favorite taste for the region.

However, the snack market is witnessing a lot of innovations by which authentic flavors are blend with western styles, there by developing evolving tastes. Last five years, the market has witnessed a steady growth in consumers seeking healthier snack options. Today's hectic and fast life<sup>[6]</sup> has left less time for elaborate family meals which has been a favorite factor for the growth of healthy ready-to-eat snacks. This serves as a time pass option and complete meal solutions.

On analyzing the snaking scene, it is observed that;

- [1] Distribution is the key to any brand. This is the main challenge to a regional player. Global players with multinational brands have a better consumer reach with strong distribution networks. Brands are concentrating on Sales and Distribution activities with specifications regarding the secondary consumer reach levels.
- [2] It is interesting to note that, regional snacks brands offer 30 % higher volume which is value for money. This is actually a challenge for international brands where in their price points needs to be reworked.
- [3] For regional brands which suits to the segmented tastes, to grow outside their home arena is really an obstacle for growth which requires a lot of consumer connect. International brands, meanwhile is exploring authentic flavors. This is the situation not only in India but also abroad. Recent news in Business Line <sup>[7]</sup> clearly describes how Kit Kat from Nestle, tasted success in Japan with weird flavors. Kit Kat started exploring different local flavors in Japan from 2000 and their business started growing and Nestlé's sales have grown 50% since 2010 after going local.

- [4] Due to the large population and growing economy of the country; a lot of FDI has come in in the snack segments with multinationals testing the market with ethnic foreign tastes and spreading's. In a recent press release by Reuters from London indicates that, Nestle and Unilever is eyeing to buy small brands to boost sales<sup>[8]</sup>. Deals show appetite for healthy, ethical products which are mainly small & artisanal brands.
- [5] With growth of disposable incomes, now the young generation is looking for healthy and convenient foods – both snacks and drinks. An article published in Business India<sup>[9]</sup> recently was discussing regarding how Pepsi & Coke is finding it difficult to maintain the market share. Local players are coming out with healthier snacks and drinks. This shows that strong opportunities exist for trans-fats free and gluten free snacks.
- [6] Hygienic snacks with innovative packing have led to the growth of multinationals which is really a threat for regional players.
- [7] While studying Kerala snack market apart from local bakeries which are centers of attraction in towns and villages; there are a lot of small players which operate in niche markets with excellent distribution strategy coupled with attractive price points.
- [8] Every town in Kerala is having local bakeries with own set of consumer base which sells local fried snacks and savouries.

Apart from a lot of local players, main players competing for stomach share in Kerala's snacking scene is PepsiCo, ITC, Parle, Kellogg, Haldirams, MTR, Maiyas, Yellow Diamond ( Prataap Snacks Ltd ) , Balaji Namkeens ( Wafers ) etc.

### Global sustainability

Concept of Global sustainability<sup>[10]</sup> is a topic of debate and recently it has evolved to multiple dimensions. This is viewed as a desired goal of development and environmental management. In other words, this idea helps to understand the relationship between global environmental change and human-well-being along with development.

Technology has been a part of human history since mankind started developing tools and weapons directly from what environment has provided. Each step technology took forward has diminished the natural environment in one way or other which has led to the deterioration of natural ecosystems. New technology for making use of sustainable energy will ultimately need to be developed in order to replace the use of limited resources. The concept of green energy and green space among concrete jungles is gaining prominence.

All issues of sustainability addresses one basic issue; how long a specific resource will last? How long a market for a particular product will persist?

### Data Analysis and Discussion.

The factors affecting the market reach of snack brands in Ernakulam district, profitability of Snack business and the distribution strategy of snacks portfolio is discussed in this section.

Out of the fourteen districts of Kerala, Ernakulam district is situated in the central part of the state and is the home to 12 % of the Kerala population. This district is known as the commercial capital of Kerala, which means the cross migrations are more in this part of the state.

**Outlet Classification** - Before the mapping started, outlets universe was classified into –

**Table 2** - Outlet Classification (Source- Secondary Data)

SL NO	CATEGORY
1	Bakery Outlets
2	Super markets

3	Grocery Shops
4	Whole Sale shops
5	Pan shops/ Cool Bar
6	Hotels (Restaurants) + Tea & Snack stalls
7	Hotel & stay ( Lodging )

- Bakery outlet is typically a tea / coffee hub with a rich product mix. Locally popular as a snack joint; with rich assortment of snacks – this format is the most popular one in Kerala.
- Super market is outlets where an end consumer can touch, feel and take the product – concentrate on display along with consumer offers for getting sales.
- Where as a Grocery shop is a typical street shop from where people from any locality go and purchase usually for refilling their family store. This type of formats usually has a local consumer base and some of them extend credit to its consumer pool.
- In a whole sale shop, breaking of bulk happens. Major sales happen to smaller shops in remote areas. Stocks are loaded with high trade schemes.
- Pan shops / Cool Bars are typical to Kerala who serves soda – lime and an average Malayalee drinks minimum a lime juice a day.
- Hotels <sup>[11]</sup> are peculiar with vegetarian stuff to non-vegetarian dishes were in Kerala Parata is a centre of attraction. This also comes under the classification Restaurants with eat and dine facility. Of this tea and snack stalls does not have any permanent structure.
- Hotels with Stay (Can Lodge) are formats where in one can stay for a night or so and attached to it food facility will be there. These categories have different classifications.
- 

On surveying / mapping the district it was found that;

**Table 3 – Ernakulam District Mapping (Source- Primary Data)**

Ernakulam District Mapping	
Total Area for mapping	120 towns
Population (Nos.)	35.48 L
Mapped Outlets (Nos.)	15444
<i>Outlets Classified (Nos.)</i>	
Bakery Outlets	1819
Super markets	418
Grocery Shops	1636
Whole Sale (WS) shops	103
Pan Shops / Cool Bar	3141
Hotels (Restaurants) + Tea & Snack stalls.	7415

Hotel & Stay (Lodging)	912
<b>Total Outlets (Consumer Contact Points)</b>	<b>15444</b>

### Market Reach of Snack brands

Sales of any brand depend on the market reach of the product. Professional companies measure sales on the basis of population data and uses tools like PCS (per capita sales) and DPL (dealer per lakh). PCS- per capita sales<sup>[12]</sup> has its origin from Latin and denotes the sales per person. This concept is used to develop Business strategies. Dealer per lakh<sup>[13]</sup> (DPL) is a tool used to promote sales by range selling and to increase productive call in sales – there by more volumes.

### Profitability

Profitability of any brand depends on the outlet reach / market reach which invariably depends on distribution, Display in outlets (POS – point of sales, Window display driven by advertisements) and Pack sizes (Family packs, Medium value packs & Low value packs). However data collected is analyzed on the basis of the above two factors by taking snack players like organized brands and traditional unorganized players.

In the category of organized players; PepsiCo – Frito Lays is taken and comparison is done with Traditional unorganized players on the basis of a five point scale like

**Table 4 – Five point scale (Secondary Data)**

Scale	Attributes
5	Excellent
4	Very Good
3	Good
2	Average
1	Below Average

### Data analysis with respect to organized snack player – Frito Lays

Frito Lays is considered to be the largest among all snack brands in Kerala and in particular – Ernakulam district. The Brand has grown rapidly in the past decade by intense marketing campaign – efficient utilization of POS, Attractive TVC (Television Commercials) and timely distribution along with service.

To summarize for local market, Pepsi Co Frito –Lay division has



*Figure 6 - Frito Lays range with Indian flavors  
[Source: Secondary Data]*

1. Innovated in format, flavor & occasions with efficient distribution mechanism.
2. Invested in cross category launches under the umbrella of quick memory brands.
3. In Branding – (TVC, Display, Billboards, Sponsorship and Print) and packing at various price points. Brand is famous for its celebrity endorsements and is presented in a youth iconic theme.
4. Assimilated local flavors.

By assimilating local natural flavors brand has won in capturing young customers. With its strong brands Pepsi Co Frito-Lay is a strong presence in Kerala market and acts as a role model in Snacking scene with 40% market share.

**Table 5 – Five point scale analysis with respect to organized snack player – Frito Lays (Source Primary Data)**

Outlet type- Attributes	Bakery Outlets	Super markets	Grocery Shop	WS shops	Pan Shops/ Cool Bar	Hotel/ Restaurants	Hotel & Stay
Market Reach/ Distribution	5	5	4	4	3	4	4
Display	5	5	5	2	4	2	2
<b>Pack Sizes</b>							
1.Family packs	5	5	4	3	2	2	1
2.Medium Value packs	5	5	5	5	3	4	3
3.Low value packs	3	3	3	5	5	4	5

Assimilation of local flavors is an innovation done by Pepsi Co Frito-Lay which innovated the snacking scene of the country – which also helped Lays to capture the market share of local flavors.

#### **Data analysis with respect to Local unorganized snack players**

Many of the local brands are unorganized operating in small geographical areas but they are recreating traditional snacks to a great extent which helps them to compete with larger organized players.

**Table 6 – Five point scale analysis with respect to local unorganized snack player(Source- Primary Data)**

Outlet type- Attributes	Bakery Outlets	Super markets	Grocery Shop	WS shops	Pan Shops/ Cool Bar	Hotel/ Restaurants	Hotel & Stay
Market Reach/ Distribution	5	4	4	2	3	1	1
Display	5	5	2	2	3	1	1
<b>Pack Sizes</b>							
1.Family packs	4	3	2	1	2	1	1
2.Medium Value packs	5	5	5	2	3	1	1
3.Low value packs	5	5	5	5	5	1	1

Local brands concentrate on ethnic variants of snacks which is helping them to compete with national and global players. About a decade back many of the traditional snacks were available in local tea shops. Now a lot of niche players are dominating the scene and bakeries produce and sell snacks which are over 20 % of their average revenue. So local bakeries have turned out to a tea - more precisely a coffee joint, which is a suitable format for earning lively hood. So sustainability of traditional snacks largely depends on local bakery outlets of which nearly 50% is having its own production facilities in Ernakulam district.

### Distribution Strategy

Distribution is the key to any business and plays a prominent part in making product available. This is a prominent aspect in Four P's – Product, Price, Place and Promotion. The above analysis reveals that the distribution strategy used by organized players and unorganized snacks are entirely different. The concentration levels on outlets and the pack size placed are different. Pricing strategy also varies with pack sizes and in many situations local unbranded snacks goes for bulk packing to whole sale outlets for breaking the bulk. This brings in a lot of price advantage and facilitates distribution to outlets.

Place in Four P's is something related to distribution channels. This can be factored as

**Table 7 – Place factor in Four P's relation to Distribution (Source- Secondary Data)**

Factors of Place	Explanation
Channels	Involves the distribution channels
Coverage	Involves the market coverage
Transportation	Involves both primary and secondary transport
Location	Place of outlet/ Place of display
Logistics	Sum total of all the activities.

Well planned distribution chain makes the product available to the targeted set of consumers as they can preview and purchase the product. It is interesting to note that, manufacturers are coming out with low MRP packs to increase their market base. (Low unit packs) LUPs are mostly targeted at rural consumers, who do not want to spend much on brands but need to experience. It is sure that small value offerings or LUPs come to fill gaps in the consumer and company – end. Here the distribution channel has to play a prominent role to satisfy this aspect by servicing the rural markets. Local snacks mainly unorganized players concentrate on low unit packs which are having fewer prices. This helps local players to compete with organized snacks.

### Findings, Conclusions and Suggestions

#### FINDINGS

1. Just like in Kerala, people of Ernakulam district prefer bakery as a typical snack joint.
2. In the district of Ernakulam, there are 15,444 outlets – consumer contact points of various categories.
3. For total population of 35.48 L in Ernakulam district, there are 435 outlets per lakh of population.
4. This is against the Kerala standard of 1000 outlets per lakh and shows that the district is industrially developed with healthier business prospects and apart from 12% of Kerala population, district also has considerable amount of floating population.
5. Organized players and companies always take DPL (Dealer per lakh) and PCS (Per capita sales) as a yardstick for efficient business options.
6. Organized snack players like Frito Lays concentrate on Bakery outlets and super markets with value added family packs.
7. Organized players concentrate on displays with their own display stands. Margins are less – but sell on brand pull.
8. Assimilation of local flavors is an innovation done by Pepsi Co Frito-Lay which innovated the snacking scene of the country. That also helped Lays to capture the market share of local flavors. This is also the case with ITC – Bingo, Kellogg's – Pringles, Haldiram's and Parle.

9. Local un-organized players concentrate on LUP's (Low Unit Packs) in Grocery and Super markets. They put additional efforts in Whole Sale outlets by selling bulk packs which provides them price advantage by breaking the bulk – repacking.
10. Local un-organized players concentrate on ethnic snacks. This helps them to tide over the competition.
11. Trend has shifted from local tea shops (Chayakada) for traditional snacks to Bakery outlets which act as a local snack – coffee joint. This concept has actually helped to sustain the lively hood of a lot of semi-skilled workers.
12. Out of the total 1819 bakery units mapped in Ernakulam district nearly 50% has production facility – which denotes the sustainability of traditional snacks and trading it makes it a profitable option. So sustainability of traditional snacks largely depends on local bakery outlets.

## CONCLUSIONS

Business of snacks is a profitable equation in Ernakulam district due to its huge influx of migrant population. Brands are competing to get more per capita sales (PCS) and dealer per lakh (DPL) is considered as a healthier option by organized snack players to cash in more sales. A stylish Bakery outlet is the dream project of small and medium entrepreneurs of Ernakulam district. Actually proliferation of Bakery outlets has helped a lot to sustain the traditional snacks and it is under stood that nearly 20 % of the income of a Bakery outlet comes in from trading of snacks.

## SUGGESTIONS

1. Snack industry and proliferation of Bakery concept is helping in the preservation of Regional food habits and better livelihood.
2. New packing technology has to be developed with government initiatives like subsidy for environmentally degradable packing materials. This will bring it sustainable environmental management.
3. Practice of reusing oil in cooking has to be stopped since multiple usage leads to health hazards.
4. Safe manufacturing practices, hygiene and ware housing have to be implemented at manufacture locations for sustainable development and healthy living standards.
5. Health and Wellness options of snacks like millet snacks have to be brought in with healthier breakfast options which can avoid life style diseases.
6. Trans fat free options of snacks need to be promoted for maintaining health and wellness – then only future generations can meet their own needs.

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## Tourism education in Greece in times of economic crisis

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### Abstract

*Education and training have always been considered factors of utmost importance in economic development. To this aim, governments constantly strive to develop effective education systems, creating education and training structures at different levels which reflect the socio-economic conditions of each state. Since tourism as a social activity is internationally recognized as contributing significantly to economic and cultural development, the organization of the tourism education and training system is a research area of particular academic interest. More specifically, the structure of tourism education can be often confusing for both trainees and employers. This confusion is accentuated by factors such as the diversity of tourism as an interdisciplinary field and its inherent feature of employment seasonality. This article delves into the multidimensional system of tourism education and training in Greece, a country that is economically reliant on tourism. In particular, the education system is being analysed during the period of the country's economic crisis. Findings point out long-standing weaknesses of the education system intensified by uncoordinated political action under the pressure of the economic crisis. It turns out that in Greece, tourism education and training suffers from inherent weaknesses that are not necessarily due to the economic crisis but are potentially exacerbated by it.*

**Keywords:** *tourism education and training, Greece, economic crisis*

**Main Conference Topic:** *tourism education, tourism training, educational system*

### Introduction

It is an undisputable fact that there is a direct relationship between an educational system, a country's economy and its productive capacity. (Becker, 1974: 15-16; Mincer, 1975: 72-73; OECD, 2004: 6). The interdependence of education and the economy is essentially determined by social reality, since potential employees are expected to demonstrate skills and qualifications acquired through a high level of education or training. According to this reasoning, the more qualified the employee, the greater his/her potential professional power.

Tourism as an economic activity affects many sectors of a country's economy, namely transportation, accommodation, food & beverage, recreation and entertainment. As a complex "industry" covering a wide range of economic activities, tourism requires substantial investment in human capital.

The tourist industry in Greece is experiencing significant growth. According to the Greek Tourism Business Association (SETE in Greek), tourism in 2014 contributed directly to the creation of at least 9% of the country's GDP, while its direct and indirect contribution was estimated at 20% to 25%. According to available data, tourism is the driving engine of the Greek economy, with an estimated growth of 11.3% or € 1.8 billion in 2014 (from € 15.2 billion of direct contribution to the GDP in 2013 to € 17 billion in 2014 (Ikkos/SETE, 2015: 13).

Concerning employment in tourism, it amounted to 9.3% of the total number of employees in the country since 2014, compared to 3.9% in 1983 and 7.0% in 2008. In 2016, the total number of employees in tourism according to the Hellenic Statistical Authority amounted to 341.2 thousand (Ikkos/SETE, 2015: 12-13). The SETE stresses that in terms of competitiveness, Greece cannot differentiate itself from competing countries at a cost level, but at the level of product diversification and the offer of rich tourist experiences, provided there are well-trained human resources available (SETE2005: 56).

This is why the European Commission, in its Communication on "Working together to strengthen human capital, employability and competitiveness" [SWD (2016) 195 final], considers it important to improve the skills shortages in various economic operators and launches a strategy plan for cross-sectoral cooperation in this field. The strategy plan was initially implemented based on a demand driven process in six sectors, including tourism.

In many host countries it is deemed necessary to create modern educational programs that will facilitate the education and training of staff and executives in tourism companies whose specialized knowledge and skills will contribute to the qualitative upgrading of the tourist offer.

It is widely accepted that the upgrading of the provided tourist services is achieved only through the education and training of human capital employed by major tourist enterprises. In particular, employers consider trained staff as a means to increase productivity and improve the quality of services that will consequently increase their company's profits. States are seeking to accelerate tourism development and boost competitiveness. Employees embrace training because their increase in performance, thanks to their tourist education, tends to increase their earnings.

However, the appropriate training of human capital, necessary in a developed or growing tourism industry, presupposes the existence of a well-organized system of tourism education and vocational training.

Training and training systems play an important role in the upgrading of skills. New forms of work organization and a more and more complex business environment require new approaches to training (Friis, 2001: 1). Acquisition and development of skills are vital to the performance and modernization of labor markets to provide new forms of flexibility and security for jobseekers, workers and employers (SWD (2016) 195 final).

### **The study**

A research project was carried out in order to investigate, record and visualize the existing system of tourism education and training in Greece, as it was recently shaped due to the impact of the economic crisis. The research was carried out based on relevant bibliography and through extensive study of the existing institutional framework. In addition, tourism education providers' websites were examined and a comparative study was carried out concerning the tourism studies curricula offered by these educational institutions. The survey was conducted from 1-6-2017 to 15-9-2017.

In Greece, tourism education and training is provided by a number of public and private sector stakeholders (Moirá et al, 2004: 59). But the main institutions in the field of education and training are state-owned as is also the case in other European countries. The system is centralized and focused on the Ministry of Education, Research and Religion, providing little room for flexibility to supervised education and training providers. Thus, the Ministry of Education, Research and Religions and the Ministry of Tourism (Law 3270/2004) operate predominantly in the public sector for issues of tourism education, training and education. The Ministry of Labor, Social Insurance and Social Solidarity, the Ministry of Agricultural Development and Food and the Ministry of Administrative Reform are also active mainly in the field of secondary education and training, with a possible future involvement of other ministries, e.g. the Ministry of Health in the field of medical and thermal tourism, the Ministry of Shipping and Island Policy in marine tourism, diving tourism and others.

It could be argued that, within the public sector, each ministry with its supervised legal entities seems to constitute a separate micro-system of education and training.

### **The system of tourism education and training in Greece**

#### **Ministry of Education, Research and Religion**

The dominant system of tourism education and training in tourism is the one formulated by the Ministry of Education, Research and Religion. This system includes two different levels of education, the secondary level which comprises of the Professional High-schools (EPAL in Greek) which operate either during mornings or evenings and the tertiary level schools where Higher Education Institutions belong, i.e. Universities and Technological Educational Institutions. At the same time, formal training is provided by Vocational Training Institutes (IEK<sup>10</sup> in Greek), which belong to the post-secondary education category.

The subsystem of continuing vocational training in the tourism sector is quite loosely structured. Continuing education and life-long learning, since the completion of the Certification of Vocational Training Centers (KEK in Greek) by the National Certification Center (Ε.ΚΕ.Π.Ι.Σ. in Greek), is carried out systematically by either public or

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<sup>10</sup> The IEK operate either as public or private institutions. The public are operated by the Ministry of Education, the Labor Force Employment Organization / OAED which to the Ministry of Labor, Social Insurance and Social Solidarity and the Ministry of Tourism. Their curricula and the awarded certifications are controlled and approved by the Ministry of Education.

private centres (KEK), and is subsidized by the European Operational Program run by the Ministry of Labor, Social Insurance and Social Solidarity. However, these programs are largely meant for the unemployed and not so much for workers who would like to improve their knowledge and skills.

At the secondary level of education, tourism education is technologically oriented and is provided by EPAL (professional high-schools). The specializations were originally limited to "Hotel Management" (Moirá et al, 2008) but recently changed to a more inclusive "Tourism Business Management", apparently to cover all types of tourism businesses and not exclusively hotels. However, due to the multidimensional nature of the tourist activity, there are also specializations involved in tourism but belonging to other fields and disciplines such as Food and Beverage Specialist, which usually belongs to the Department of Agriculture, Food and Environment.

The Ministry of Education also comprises the National Organization for the Certification of Qualifications and Vocational Guidance (EOPPEP<sup>11</sup> in Greek), which supervises the Vocational Training Institutes (IEK<sup>12</sup>), which offers all kinds of training (initial or complementary). The vocational institutes (IEK) operate different specializations that are constantly changing to meet the needs of the labor market<sup>13</sup>.

At tertiary level, tourism education is technologically oriented and is provided by Technological Educational Institutes (TEI in Greek). The length of studies at the TEI is of 4 academic years, while during the last semester of study students prepare a dissertation and carry out a practicum in a tourist business. From 2001 until 2013 there were autonomous departments of "Tourism Management" in seven Technological Educational Institutes / TEI<sup>14</sup> (Athens, Thessaloniki, Piraeus, Patras, Larissa, Crete and Epirus).

In 2013-2014, due to the financial crisis and the pressure from the European Union institutions to reduce public spending, a large scale reform of the education system (Athena project) took place, leading to mergers, cancellations and renaming of departments with parallel changes in curricula. This reform led to the merger of the Department of Tourism Management with other departments of the School of Administration and Economics, e.g. Business Management, Marketing, etc. under the "umbrella" of a single "Business Management" Department under which optional study paths are either introduced from the first semester of study or later on. Thus, the Department of Tourism Management was incorporated as a "Tourism and Hospitality Management" study path in the Business Management Department.

In this context, the reduction in government spending on education and despite the initial intention to reduce the University departments and thus the costs, the changes in the Athena project have resulted in an increase in the number of departments offering Tourism studies at a TEI level, from seven to ten, as a new department was founded in Grevena and two new departments were created within the TEI of Western Greece and Sterea Hellas respectively, with a specialty in "Financial and Communication Management of Cultural and Tourist Units".

The Department of Tourism Business of TEI Patras, based in Patras, ceased to accept new students and was scheduled to continue operating until 2017-2018, at which time existing students were expected to complete their studies. But suddenly, in 2017-2018, it was decided that the department would re-operate as an autonomous department and it received 120 students. At the same time, these changes have been the starting point for the gradual increase in the number of total admissions in Tourism departments from 385 in 2012-2013 to 1800 in 2017-2018. These changes are shown in Table 1.

<sup>11</sup> EOPPEP develops and implements a comprehensive national certification system for non-formal education (initial and continuing vocational training and general adult education) and provides scientific support to vocational guidance and counseling services.

<sup>12</sup> The IEK were established by Law No. 2009/92 (Government Gazette 18/A). They are not formally classified at an educational level (although they are considered as level 5 of the European Qualifications Framework) as they can be attended by graduates of Junior-high schools, Professional high-schools, OAE apprenticeship schools and any type of High school, depending on the individual specialties they offer (Article 4, Law 2009/92).

<sup>13</sup> in 2016-2017, specialties such as Tourism and Hospitality Specialist, Management and Economy Executive in the field of Tourism, Religious Tourism and Pilgrimage Tours specialist, Air Transport Service Staff, and Culinary specialist/Chef were operating. <http://www.foititikanea.gr/images/PDF/eidikothtes-diek-2016-2017.pdf>

<sup>14</sup> Higher Technological Institutes (TEI) resemble the UK Universities of Technology. They emphasize the training of high-quality applications' executives, who through their theoretical and applied scientific training constitute a link between knowledge and application, developing the applied dimension of sciences and the arts in the respective professional fields and thus transferring, via modern technology, practices and techniques in the field of applications.

Table 1: Changes in Higher and Tertiary Education in Greece 2012-2018 (Table by: Moira P. Mylonopoulos, D &amp; Kefala, St)

HIGHER TECHNOLOGICAL EDUCATIONAL INSTITUTIONS OF THE MINISTRY OF EDUCATION							
2012-2013 Department of Tourism Management	Admissions 2012-2013	2013-2014 Business Management Departments / Direction Tourism Management & Hospitality Management	Admissions 2013-2014	Admissions 2014-2015	Admissions 2015-2016	Admissions 2016-2017	Admissions 2017-2018
Athens	85	Athens	85	85	90	120	110
Piraeus	50	Piraeus **	100	100	110	140	140
Thessaloniki	120	Thessaloniki	100	100	110	130	130
Patras *	70	Western Greece (former Patras*)	0	0	0	0	120
Larissa	0	Thessaly (former Larissa)	100	125	140	150	150
Crete (Heraklion)	60	Crete (Heraklion)	85	100	100	140	140
Epirus (Igoumenitsa)	0	Epirus (Igoumenitsa)	100	125	100	80	80
		Western Macedonia (Grevena)	100	150	170	170	170
		Ionian Islands (Lefkada)	130	175	190	230	240
<b>Total</b>	<b>385</b>	<b>Total</b>	<b>800</b>	<b>960</b>	<b>1010</b>	<b>1160</b>	<b>1280</b>
		<b>2013-2014 Dept of Financial and Communication Management of Cultural and Tourism Units</b>					
		Western Greece (Pyrgos)	150	200	170	210	210
		Central Greece (Amfissa)	130	125	150	170	170
		<b>Total</b>	<b>280</b>	<b>325</b>	<b>320</b>	<b>380</b>	<b>380</b>
<b>Universities supervised by the Ministry of Tourism 2017-2018</b>							
		Piraeus	0	0	0	0	70
		Aegean (Chios)	0	0	0	0	70
		<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>140</b>
<b>Overall Total</b>	<b>385</b>	<b>OVERALL TOTAL</b>	<b>1080</b>	<b>1285</b>	<b>1330</b>	<b>1540</b>	<b>1800</b>

\* The T.E.I. of Patras used to admit new students until 2012-13 when it ceased operating due to the "Athena" project. It would continue its operation until 2017-18 without any new students until when the latter would graduate. In 2017-2018 the department started operating again as an autonomous "Dept of Tourism Management".

\*\* The TEI of Piraeus as of 2014 was renamed as AEI /University of Piraeus Technological Sector (Government Gazette 3681 / B / 2014)

These changes have caused several problems in the operation of the Departments providing tourist education. As there is no longer an autonomous Department of Tourism Management, but an introductory study path to the wider discipline of Business Management and the professors come from different subject areas, that are often unrelated to tourism, the new programs were expected to bring together different subjects, different disciplines, but also different expectations from both teachers and students. A typical example is the reduction of the offered tourism courses at the TEI of Piraeus from 24 to 19 and the TEI of Larissa/Thessaly from 26 to 18.

Indeed, Stergiou and Airey (2017:7) have rightly stated that the changes were treated with skepticism and hostility by professors and students, who felt that the level of tourist education was downgraded. The most important argument was, that this downgrading makes it impossible to respond to the needs for an ever-growing tourist industry.

In addition, the degrading of the educational process is also apparent in Table 1 where it appears that the changes led to an increase in the number of admitted students from 495 to 1.980 without there being a corresponding increase in the number of teaching staff, which decreased due to retirement and limitations in new recruitments following the 1:5 EU obligation (Law 3899/2010 and INE GSEE-ADEDY, 2012).

Regarding the existing study programs of the Business Management Departments in the path of "Tourism Management and Hospitality Management" of the TEI, research has shown that there is a common core of courses offered, for example, Tourism Principles, Tourism Sociology, Tourism Law, Tourism Marketing, etc. and there is a slight variation in selection courses depending on the regional differentiation of each department. For example, the TEI Piraeus in the "Hospitality Management" option, there is an emphasis on marine tourism and shipping, because Piraeus is an important tourist port. The TEI of Thessaly emphasizes the hotel management section, etc.

As for the tertiary level, there were no undergraduate sections dedicated exclusively to tourism, but there were individual taught courses in some departments, mainly Business Management (Moirá, 2004) either as compulsory or as elective courses, as was the case at the University of the Aegean. But from 2017-2018 there are two undergraduate departments of tourism studies representing the tourism sector. In particular, Piraeus University operates a Department of Tourism Studies and the University of the Aegean (Chios) operates a Department of Economics and Tourism Management. The Ministerial Order (number F.253.1/40818/A5/2017) for the academic year 2017-2018 provided for a number of 70 admissions for each department.

At a postgraduate level, until 2010, the TEI in accordance to the law could not organize postgraduate study programs independently. Thus, five universities (Piraeus, Aegean, Hellenic Open University, Macedonia and Athens University of Economic and Business) operated those tourism programs at a postgraduate level, instead. However, changes in the tertiary education system led to a rapid proliferation of the offered postgraduate study programs in the field of tourism, amounting to eleven and provided by both universities and TEIs, autonomously, inter-departmentally or in cooperation between Universities and TEI (Table 2). Tuition fees for postgraduate programs are to be decided by each institution.

TABLE 2. Offered graduate courses from Universities and T.E.I. (Table by: Moira P. Mylonopoulos, D & Kefala, St.)

	Organisation	Operation	Graduate Program	Areas of Expertise	Sem.	Location	Fees (€)
	University of Piraeus	autonomous	(MBA-Tourism Management		3	Piraeus	7.500
	University of the Aegean	Inter-departmental	"Tourism Design, Management and Policy"	a) Option «Tourism Development Strategy" and b) Option "Hospitality Management".	3	Chios	<b>3.500</b>
	Athens University of Economics and Business	Autonomous Dept. of Business Management	«Service Management»	Option «Development and Management of Alternative	<b>3 part time 4 full time</b>	Athens	6.500

				Tourism Services".			
	Hellenic Open University		MA "Tourism Management"		<b>Min 3 years, Max 5 years</b>	Patras Athens Piraeus Thessaloniki Crete Ioannina Rhodes	3.250
	University of Macedonia	Autonomous Department of Business Management	a)MA in Tourism Business Management for young graduates, and b)Master in Tourism Management-MTM for business executives		3	Thessaloniki	a) 4.800 ευρώandb) 5.400 ευρώ.
	<b>International Hellenic University/ School of Economics, Business Management and Legal studies</b>	autonomous	MSc in Hospitality and Tourism Management		1 year full time and 2 years part time	Thessaloniki	5.000
	University of Thessaly	(interdepartmental) Department of Planning and Regional Development and Department of Economics	Tourism and Culture Design and Development		<b>2 full time and 4 part time</b>	Volos	<b>2.900 full time and 3.200 part time</b>
	Harokopio University	The Departments of "Home Economics and Ecology", "Geography" and "Informatics and Telematics" of Harokopio University, the "Department of Business Management" of the University of the Aegean and the "Institute de Reserche et d' Études	International Master in Sustainable Tourism Development: Cultural Heritage, Environm ent, Society		2	Athens	5.500

		Supérieures du Tourisme” of Paris I – Panthéon Sorbonne (IREST)					
	T.E.I. of Thessaloniki	Autonomous Dept. Business Management/Tour ism Enterprises management path	Main Tourism Business Management	1) Hotel and Hospitality Management  2) Air Transport and Travel Operations Management,  3) Management of Nautical Tourism, Cruise and Ferry Operations,  4) Tourism Destination Marketing and Management  5) Cultural Tourism & Management and  6) Tourism Management	3	Thessaloniki	3.800
	T.E.I. of Central Macedonia		MBA in Hospitality and Tourism (in English)		3	Serres	4.000
	T.E.I. of Athens	Department of Business Management of TEI ( Tourism Management and Hospitality Management option and Management of Health and Welfare Units option), with the Department of Business Management of the University of the Aegean and the National Center for Social Research (EKKE).	Innovation and Entrepreneurship in Tourism	three options  a) Hospitality Management,  (b) Managing Tourist Destinations;  c) Management of Health and Wellness Tourism.	3	Athens	3.500

It can be argued that, within the field of tourism studies, there seems to be an excessive offer of post-graduate programs by higher education institutions, without any previous market research and graduate employment opportunities research.

Also, these programs are aimed at graduates of different specialties, e.g. management of tourism businesses, economic departments, international studies, engineers, lawyers, environmentalists, etc. which at first sight could be

considered a fruitful approach as tourism is not a one-dimensional scientific discipline but requires a multidisciplinary viewing. The problem, however, is that the admission to these programs is usually based on the first degree's total mark and/or after an interview rather than a written exam. The result is that students have no common background and they face difficulties attending specialized courses. For this reason, most MSc programs offer basic introductory courses to tourism, which are usually taught at an undergraduate level. For example, the MSc. of TEI Athens offers Business Management and Organization, Tourist Policy, Hotel Operations Management, and Tourist Economics, the MSc. at the University of the Aegean offers Tourism Economics, Tourism Management, Marketing in Tourism and Hospitality, Tourism Sociology and Geography of Tourism. At the same time, limitations imposed by the economic crisis concerning the recruitment of specialized and experienced teaching staff leads to the recycling of professors and tutors in almost all the postgraduate tourism programs.

### Ministry of Tourism

Within the Greek Ministry of Tourism<sup>15</sup> there is the Directorate of Tourism Education and Training, where all the responsibilities of the former Organisation of Tourism Education and Training<sup>16</sup> (OTEK in Greek) were transferred in 2013. It consists of the departments of Higher Schools of Tourism Education (ASTE) and Tourist Guide Schools<sup>17</sup>, the Vocational Training<sup>18</sup> Department and the Department of Life-long learning and Connection with the Labour Market<sup>19</sup>.

The eight IEK of the Ministry of Tourism operate with programs approved by the Ministry of Education and with various specializations that are continuously adapted to meet the needs of the labour market.

There are two Higher Schools of Tourism Education operating in Rhodes (ASTER) and Crete (ASTEK). Their special feature is that their level is located between secondary education and higher education, called "superior", they are placed at level 5 of the European Qualifications Framework and entry is only possible through the national examination system for entry in tertiary education of the Ministry of Education.

The duration of study is 7 semesters and the subjects taught are similar to those taught at TEI. (Introduction to Tourism, Principles of Business Management, Tourist Economy, Tourism Sociology, etc.). Graduation does not lead to postgraduate studies unless the graduate enrolls in a Department of Tourism Management of a TEI (and displaced in the 6th semester) in order to obtain the corresponding qualification/degree.

TABLE3. Admissions at the Higher Schools of Tourism Education

HIGHER SCHOOLS OF TOURISM EDUCATION						
SCHOOLS	Admissions 2012-2013	Admissions 2013-2014	Admissions 2014-2015	Admissions 2015-2016	Admissions 2016-2017	Admissions 2017-2018

<sup>15</sup> There have been many changes to the competent Ministry which has been renamed, abolished or merged several times (Ministry of Tourism, Ministry of Culture and Tourism, Ministry of Tourism) (Mylonopoulos, 2016: 37-41).

<sup>16</sup> The Organisation of Tourism Education and Training (OTEK) was established by Law 3105/2003 (Government Gazette 29/A) and was under the supervision of the Ministry responsible for tourism. The Organization, in accordance with the law, was the specialized state provider for tourism education and training in Greece. In 2014 (by Presidential Decree 112/2014 "Tourism Ministry Organization"), OTEK was abolished and its responsibilities were transferred to the Ministry of Tourism.

<sup>17</sup> Guide Schools belong to post-secondary vocational education. Prior to the crisis and the changes that followed, two Schools were operating in Athens and Thessaloniki and occasionally (depending on the needs of the local tourist market) in Heraklion, Mytilene, Corfu and Rhodes. The Guide Schools had been inactive for a few years and recently (September 2017) there has been a call for applications for the school of Athens.

<sup>18</sup> The current specialties are the same as those of EOPEP, the organisation which approves the relevant programs, without excluding the founding of new specialties in order to meet local needs. (Moirá, 2007).

<sup>19</sup> OTEK used to organise life-long learning programmes (training) in various cities across the country, for those already employed in tourism or seasonal workers, who had only empirical knowledge of their subject-matter. The trainees were able to systematize and complement their technical skills with the necessary theoretical knowledge to improve their performance in service such as Reception, Restaurant, Catering, Cooking and Confectionery. In recent years, however, these programs have not been organized. The last programme was run on EU funds through the NSRF, from 2013 to 2015.

ASTE Rhodes (ASTER)	60	60	75	75	90	90
ASTE Aghios Nikolaos (Crete)(ASTEAN)*	50	50	75			
ASTE Crete (ASTEK)*				75	90	90
<b>Total</b>	<b>110</b>	<b>150</b>	<b>150</b>	<b>180</b>	<b>180</b>	<b>180</b>

\* The Higher School of Tourism Education operating in Aghios Nikolaos (Crete) was renamed in 2014 into ASTE Crete (ASTEK).

Within the Ministry of Tourism, the Tourist Education and Training Directorate also supervise the function of the Tourist Guides School, which is a post-secondary vocational school. Graduates who successfully pass the final examinations are awarded the official tourist guides' license. Lately, the schools had been inactive since 2010 (Mylonopoulos, Moira and Kikilia, 2012). Instead, Universities (such as the University of Macedonia, the University of the Aegean and the Ionian University) have been given the task of running fast-track tourist guide programs.

Also, the new legal framework mentioned that the only professionals able to practice the profession of tourist guide are the graduates of University Departments of Archaeology, History, History of art, Ethnology and Social Anthropology. According to these arrangements, it was possible to become a tourist guide in just two months, compared to two years with the previous regime, provided that the student was a graduate of specific University department as mentioned above and spoke at least one foreign language, in most cases English, fluently. This has led to deficiencies in tourist guides fluent in lesser known languages that respond to new tourist trends, such as the Russian and the Asian tourist flows.

This change has been severely criticized, and the Federation of Guides has appealed to the Council of State, considering that the new legislation "... grossly violates the Constitution, the European law, but also the national legislation while progressively attempting to abolish its excellent professional training for Tourist Guides provided by the Ministry of Tourism, which have been implicitly put to disuse by the same Ministry" (Kalogiros, 2013).

As a result of the protests and the overall negative situation caused by this system, in 2017 it was announced that the Tourist Guide School of Athens would reopen and operate a two-year training programme (Ministerial decision 13239/2017).

### Other Ministries

The Labour Force Employment Organization (OAED<sup>20</sup>), which operates as a legal entity under public law is supervised by the Ministry of Labour, Social Insurance & Social Solidarity. OAED provides vocational education and training and implements Continuing Vocational Training programs for workers and self-employed. Also, OAED operates vocational schools (IEK) with the same tourism specialties as those of OEEK.

Until the onset of the economic crisis, specialized training was provided by the Schools of Training and professional Highschools (EPAL) of the Ministry of Agricultural Development and Food, with specialties such as "Environment and Agrotourism"<sup>21</sup>. Currently no programs are running.

Also until 2011 there was a "Tourism Economy and Development" specialization path in the National School of Public Administration<sup>22</sup> of the then Ministry of Interior, Public Administration and Decentralization<sup>23</sup>. The department

<sup>20</sup> The Agency was established by Law 2961/1954 "Establishing an Employment and Insurance Organization for Unemployment" (Government Gazette A197), which was renamed to Labour Force Employment Organization. 212/1969 (Government Gazette A11) and was restructured by Law 2956/2001 (Government Gazette A25).

<sup>21</sup> The organization "DIMITRA" was established by Law 2520/97 (Government Gazette A173). It also includes the provision of agricultural vocational education and training, which until the beginning of the economic crisis also involved tourism. So, under the supervision of the organization, Professional schools (TEE) operated offering the specialty of "Environment and Agrotourism" (Moira, 2007).

<sup>22</sup> The National Center of Public Administration was established by Law 1388/1983 (Government Gazette A113), aiming at the training of public administration officers for central and decentralized state organisations and legal entities through highly specialized professional training and a new approach to problem-solving, in order for them to effectively contribute to the democratization and modernization of

started operating in 2006 with the purpose of creating competent high-ranked civil service staff specializing in tourism policy. Graduates of the Department have been extremely successful in serving the Ministry of Tourism, the Hellenic Tourism Organization (EOT) and the former Organization for Tourism Education and Training (OTEK).

The importance and necessity of the Specialisation's creation was mainly based on the fact that the bodies that define and implement the country's tourism policy need specialized personnel capable of responding to new requirements of the international tourist environment. The beginning of the economic crisis and the signing of the memoranda led to the abolition of this specialisation path, which created a significant gap in the staffing of public tourism bodies.

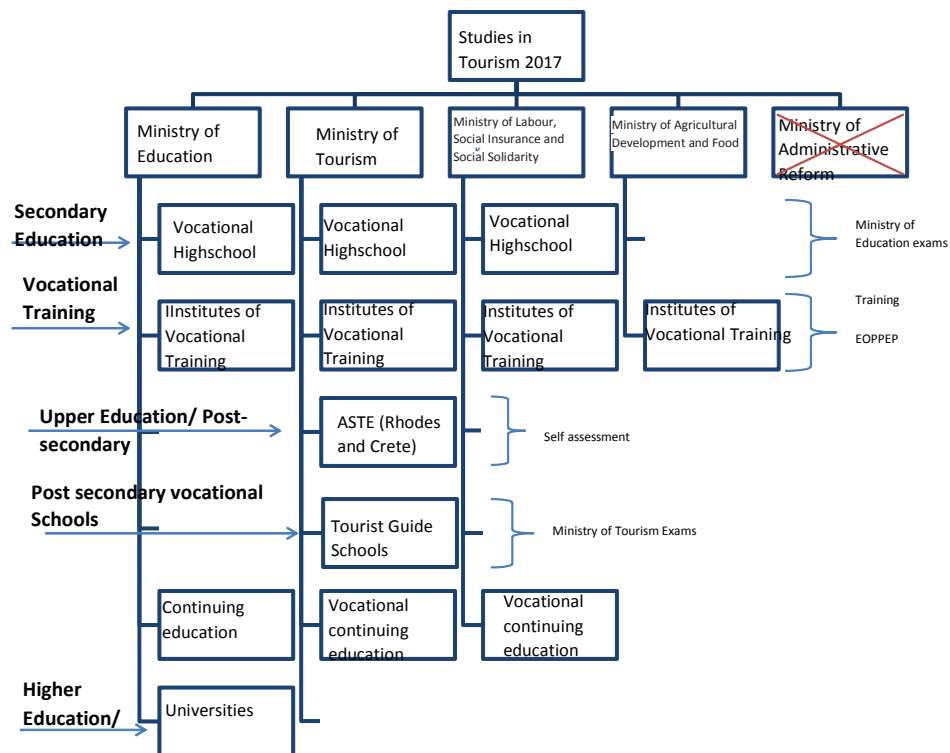


Figure 1. Studies in tourism in Greece, 2017 (by: Moira P. Mylonopoulos, D & Kefala, St.)

## Conclusions

Graduate employment for tourism education and tourism training programs has not been systematically investigated. A study carried out among TEI graduates (Μοϊρακ.ά., 2004) and a survey conducted among tourism managers (Christou, 2002) point out the problematic relation between the knowledge and skills acquired through study and those required by the tourism industry.

Although 17 years have elapsed since the TEI were awarded higher education status [Law number 2916/2001] and since the restructuring of their curricula, and despite the constant changes in the offer of curricula both in the field of tourism education as well as that of tourism training, changes do not seem to be done in a systematic manner or following a thorough study of the market's real needs. Scarce studies are fragmented, "photographing" certain time periods (Moira et al, 2004) and do not seem to depict and reflect reality. At the same time, there seems to be no

public administration. The National Centre of Public Administration consists of the National School of Public Administration (ΕΣΔΔΑ) and the Institute for Continuing Education (ΙΝΕΠ).

<sup>22</sup> The National Center for Public Administration and Local Government (ΕΚΔΔΑ) is the national strategic body for human resources development in public administration and local government. It was founded in 1983 as a legal entity of public law. Today it operates under the authority of the Ministry of Administrative Reform. Its mission is to create competent high-ranked public administration staff, and to upgrade existing employees through continuing education and certified training (see <http://www.ekdd.gr/ekdda/index.php/gr/>)

systematic communication or exchange of information between the academic community and the tourism industry, especially small and medium enterprises, which are the backbone of Greek tourism (Stergiou, 2017: 611).

The existing system of tourism education and training in Greece is complex, multi-leveled and often involves overlapping areas. Tourist education is offered at various levels (secondary, tertiary, graduate, etc.) and by different public bodies.

This complexity causes confusion which is accentuated by the lack of formal professional recognition or legal vesting at various levels in the exercise of professional rights or the recognition of the same professional rights at different levels of study. Also, despite the existence of so many levels, the distinction between education and training is often unclear. As a result in some cases professional bodies provide theoretical education programs and educational bodies provide technical training in tourism professions.

This finding was highlighted 10 years ago during the forum for tourism education and training of the Ministry of Tourism (Moira, et al. 2008; Moira, 2008a; Moira, 2008b; Moira & Mylonopoulos, 2008a; Moira & Mylonopoulos, 2008b). In addition, there are often important changes, such as a change in the curricula of tour guides which converted the educational program into vocational training, the abolishment or revival of academic departments, the establishment of university departments without the provision of teaching staff, etc. which are being made without a previous investigation on the necessity of such new arrangements. This confusion is transferred to the tourism industry and causes problems in the staffing of tourist businesses, resulting in a negative impact on the quality of provided services.

Tourism is an interdisciplinary field of knowledge that implements in a holistic way the tools of various sciences, mainly of social sciences, but not only. In this context, it is necessary to combine knowledge from different disciplines as a common denominator with the achievement of human communication, which characterizes all forms of tourism activity.

In particular, the basis of tourism entrepreneurship in Greece consists of small and medium-sized business and even family businesses, which are characterized by a strong element of ancient Greek hospitality. Another feature of small and medium-sized family businesses, which is positive but at the same time becomes an obstacle to further training in tourism, is the fact that these businesses were created by self-employed locals with no specific knowledge and skills. It is therefore often difficult, even impossible, to persuade both them and the younger generations of the need for vocational training and continuous training.

Of course, the existing tourism education system, with its inherent weaknesses, has not managed to attract neither entrepreneurs who have not perceived the importance of tourism education nor young people who, affected by social stereotypes (probably influenced by the seasonality of mass tourism), believe that employment in tourism is short-lived and unattractive for a stable career which should provide opportunities for growth and higher salaries.

It is noted that the timeless weaknesses of the education system are exacerbated by political actions implemented under the pressure of the economic crisis. It turns out that in Greece, tourism education and training suffers from inherent weaknesses that are not due to the economic crisis but are potentially exacerbated by it.

The solution to the problem of tourism education and training in Greece possibly does not only involve a differentiation between levels of upper and higher education, but also the cultivation of a national tourist consciousness (Kikilia, 2013: 48), which is acquired from early years' education and is shaped throughout life.

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## The regulatory framework for fishing tourism or fisheries-related tourism in Greece

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### Abstract

Fishing tourism or fisheries-related tourism is a Special Interest Tourism form which refers to the development of fishing activities by professional fishermen using their own fishing vessels for recreational-tourism purposes. This activity has been growing in the European tourism industry over the last years and it is performed in marine or coastal areas. As this is a complex and a multidimensional activity it requires to be regulated.

This paper seeks to give an overview of the existing regulation framework which applies to the recreational fishing sector. Desk research consisted in browsing legal data bases and search engines on the internet with the use of specific key words. Fishing tourism or fisheries-related tourism was introduced in Greece by virtue of Laws no. 4070/2012 and no. 4179/2013, supplemented by the Joint Ministerial Decision no. 414/2354/12-01-2015 and the Circular no. 2834/52781/13-5-2015.

The Greek law acknowledges fishing tourism as a Special Interest Tourism form, consisting in providing fishing activities conducted by professional fishermen and crew members which aim at the recreation of tourists and the dissemination of the fishing tradition and lifestyle. Moreover, fishing tourism contributes to the financial support of local fishermen and the regeneration of local coastal fishing communities, which is in line with the sustainable development requirements.

Considering that fishing tourism in Greece is a new concept, it is still early to draw conclusions about its impacts. Future research could be conducted in order to examine the way fishing tourism is implemented in Greece, the degree of acceptance of the new regulatory framework by the public and the private stakeholders as well as the impact of fishing tourism on the marine environment.

**Keywords:** fishing tourism, regulatory framework, recreational fishing

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

Over the last decades the issue of sustainability has been crucial to the management of the natural environment. It all began with the impact of the Report of the World Commission on Environment and Development: "Our Common Future" (WCED, 1987: 43), which coined and defined the meaning of the term "Sustainable Development". Later, the United Nations Conference on Environment and Development (UNCED), also known as the Rio de Janeiro Earth Summit (UNCED, Rio de Janeiro, 1992) addressed crucial issues with regard to natural resources management and resulted in important documents such as the 'Rio Declaration on Environment and Development' and 'Agenda 21'.

Jacques-Yves Cousteau (1910-1997), the great French oceanographer, explorer, author and filmmaker said: "For most of history, man has had to fight nature to survive; in this century, he is beginning to realize that, in order to survive, he must protect it."

Sustainability is the ability to continue a procedure or a situation indefinitely. Sustainable development has been a fundamental rule which consolidates the inextricable bond between the environment and the economy, since every economic activity has to be environmentally friendly. One of the principles of the Global Code of Ethics for Tourism (UN, 2001; UNWTO, 2001:5) is that "[s]pecial attention should be paid to the specific problems of coastal areas and island territories and to vulnerable rural or mountain regions, for which tourism often represents a rare opportunity for development in the face of the decline of traditional economic activities." (Article 5, par. 3)

The sea along with other natural goods (e.g. the air, the lakes, the shores of the sea) have been defined by the Roman law as communal (public) goods or things common to mankind. No expropriation, stricture or degradation of common use is allowed in public natural goods. The marine environment as a public and collective good (Willis, 1991: 38-48) is not subject to individual expropriation as it consists of amenity attributes over which there are no property rights, and hence others cannot be excluded from enjoying them. These amenity attributes do not always follow the market rules but have a collective nature based on social interest. The attribute of public good allocated to the marine environment is not cancelled due to its possible customization as a natural resource. This is because the marine environment can be a source of material wealth (e.g. professional fisheries) or a source of pleasure (recreational fishing tourism).

Since antiquity people have been attracted by the coastal areas because this is where they could find their food. At the same time, the marine environment itself has evolved into an important leisure travel destination. The fishing activity combines commercial fishing, which is fishing for profit, and recreational fishing, which is fishing for pleasure. Research conducted in USA showed that fishing for pleasure is one of the most popular outdoor recreational activities (Cordell et al, 1999). The reason for this is the low cost and the fact that it does not require a particular physical exertion or ability.

When the fishing activity is performed for recreation and involves the displacement of the amateur angler away from home, this is considered to be a tourism activity. This is because traveling away from home and outside one's usual environment to another place for pleasure is a key component in the concept of tourism (Mylonopoulos & Moira, 2005: 80).

### The survey

Recreational fishing is multidimensional and can be conducted either on the shore or in freshwater and at sea. It refers to the fishing activity itself as well as aquaculture. Its complex and cross-cutting nature requires a regulation.

In order to identify the way that the Greek state regulates fishing tourism, a desktop survey was conducted in order to describe the existing regulatory framework with regard to the establishment and operation of fishing tourism related businesses in Greece. The survey involved browsing legal data bases (e.g. <http://lawdb.intrasoftnet.com/>; <http://www.nbonline.gr/>) and search engines on the internet with the use of specific key words. For example, the words 'fishing tourism' in Greek only gave 22,800 results, while the corresponding English term gave 156,000,000 results. This shows that this activity already exists in Greece, but that it was recently regulated by law. This paper seeks on one hand, to describe the different forms of fishing tourism and the way it is regulated in the EU and on the other hand, to present and comment on the existing institutional framework which relates to fishing tourism in Greece.

### Fishing tourism or fisheries related tourism

*"[T]here is no common definition of fisheries-related tourism, nor is there any legal basis; [...] for example, tourism of this type is considered an occupation in Italy, but in France is classed as a sideline."* (European Parliament, 2017: 5). Fishing tourism is an industry with a potential to create new jobs and income for host communities, through renting accommodation and boats, providing hospitality services, developing new infrastructure and services, issuing amateur fishing licenses and selling fishing tackle. Fishing tourism aims, on the one hand, at providing recreation for tourists who can learn about marine biology, fishing traditions and culture and on the other hand, diversifying fishermen's income and providing additional income for fishing families and other local inhabitants, and reinforcing the social cohesion in local communities.

Fishing tourism includes fishing activities conducted on the shore or in freshwater and at sea with the use of a floating craft, aiming at the recreation of tourists and the dissemination of the fishing culture. *Coastal fishing tourism* is the fishing activity performed by tourists on the shore, on the riverbanks, from rocks, cliffs, piers or beaches without the use of a floating craft. This category includes fishing activities on the shores of a river or a lake. *Maritime fishing tourism* is conducted from tour or charter boats in the sea. Fishing tourism at sea differs from fishing tourism in freshwater, which is divided into fluvial fishing tourism and lake fishing tourism, both conducted with the use of a floating craft.

### Coastal fishing tourism

Shore fishing is a popular leisure activity. Actually, amateur fishing is a favorite pastime in the countries of the West (Mordue, 2009: 530). This activity is part of coastal tourism, in particular, beach tourism (Mylonopoulos & Moira, 2005: 54). Fishing, as a participatory sport, gives amateur anglers the opportunity to relax, to be close to nature, to sit quietly in one place, doing and saying nothing. It also offers a burst of adrenaline when a fish snaps at the bait, gets hooked and caught. That means that someone does not only go fishing to catch fish. It is the fun it offers and the opportunity to get away from everyday life and all the crowds and bustle (Kenchington, 1990: 26). In many areas tourists-amateur anglers catch the fish and after a catch photo-documentation (record of their catch), they release the fish, throwing them back into the water. For anglers choosing to catch and release, there are certain tackle, landing, handling and quick release methods, which should be followed in order to prevent the injury or the death of the fish (National Park Service, 2017).

Some seaside hotels in Greece offer their guests the option to go fishing from special hotel piers (ταξίδια, 2005) or jetties across the beach or in neighboring areas (Family Georgidakis, 2015; Naiades, 2015; Hotel View, 2015).

In many places around the world shore fishing is an integrated tourism product. For instance, in North Carolina, USA, the manager of an ocean fishing pier can be granted an Ocean Fishing Pier License which authorizes them to charge the public a fee to fish from a pier within coastal fishing waters NC Environmental Quality (2017). Customers can buy a Blanket Coastal Recreational Fishing License<sup>24</sup> that covers them while they are fishing on the pier. Moreover, tourists who are fishing enthusiasts can rent out accommodation and hire a professional fishing guide to show them around the fishing locations. In addition to this, the number of tourists - amateur anglers at a particular time and place is often regulated in order to limit the utilization of fish stocks and the environmental impact of anglers and not exceed the carrying capacity of the area, following the catch and release<sup>25</sup> practice, intended as a technique of conservation (Benchley, 2002: 106-107). In Iceland, in Ireland and in Scotland<sup>26</sup> shore salmon fishing by rod and line is regarded as a tourism product. Scotland is the home of salmon fishing and is still the premier country for catching Atlantic salmon. Most of the fishing is in wonderful scenery with many historic sites, golf courses, whisky distilleries, which add to the tourist's experience. Scotland also has a broad range of ghillies, guides and instructors to help tourists make the most of their fishing and to give them the best chance of catching a fish (Fish Scotland, 2017). Iceland has turned salmon fishing into a fishing tourism industry with an annual revenue of more than 20 million Euros, utilizing the healthy ecosystems and magical sunsets, which during the fishing season last about two hours (Montaigne, 2003: 41; BCG, 2013).

### Maritime fishing tourism

Maritime fishing tourism or charter boat fishing is another popular tourism activity. Fishing tourism at sea is regarded to be an activity of maritime tourism (Mylonopoulos & Moira, 2005: 80). It refers to the embarkation of non-crew members on fishing vessels for recreational-tourism purposes. Additional services can also be provided depending on tourists' requests including accommodation and preparation of traditional fish recipes by crew members or in local restaurants (Big Game Fishing Dubrovnik, 2017). This form of tourism is called 'pesca-turismo' and it was mainly developed in Sicily (Alieftika Nea, 2003: 56-57; Tourism Review, 2011). In pesca-turismo "the purpose is not only to fishing but also to swim, snorkel, eat on board freshly caught fish and just enjoy a day on a boat in middle of the sea" (Gaudin & De Young, 2007: 41). In Italy, the concept of 'pesca-turismo' was introduced and defined by virtue of the Ministerial Decrees no. 293/1999 on the Regulation of the tourism fishing activity and no. 154/2004 of the Ministry of Agriculture and Forestry, which were updated in 2012.

Some Italian regions have also developed more specific legislation to regulate 'pesca-turismo'. In Sicily, there is a strict legal framework which provides for the safe maintenance of the fishing vessels, the certified experience of the fishermen, and the prescribed number of passengers/tourists on board depending on the dimensions of the vessel. By observing the fishing activity, tourists come into contact with the marine environment, get acquainted with the

<sup>24</sup> In the USA this license is required to recreationally harvest finfish in the state's coastal waters, which include sounds, coastal rivers and tributaries, and out to three miles in the ocean. An individual who engages in recreational fishing must have this license. (Marine Fisheries Coastal Recreational Fishing License (CRFL).

<sup>25</sup> After capture, the fish are unhooked and returned to the water.

<sup>26</sup> Some salmon beats are let through fishing hotels. A national rod licence is not required in Scotland. So salmon fishing in Scotland may be accessible through private let, in conjunction with hotel accommodation or by purchasing a permit from an angling association or fishing club by the day, week or season. (Salmon Fishing in Scotland, 2017).

profession of fisherman and become an important source of additional revenue to the fishermen, their families and the fisheries community, as they may be willing to pay for the opportunity to watch fishermen at work. Individual boat owners can serve a fish meal on the boat or at shore at the fisherman's house. In this case fishing tourism becomes a cultural activity as tourists can get acquainted with local people and their culture and can taste local gastronomy.

Fishing tourism creates new infrastructure, new jobs and economic activities, such as *fishingbait* and *tackle businesses*. Fishing tourism can develop in two forms. Active fishing tourism occurs when tourists themselves participate actively in the fishing activity on board their own boat or a charter boat. Nevertheless, if the carrying capacity of the fishing areas is exceeded, this activity can cause problems in host fisheries communities, such as environmental degradation, pollution, decline in fish stocks, conflicts between recreational and commercial fishing activity and fishermen. Passive fishing tourism occurs when tourists are on board a professional fishing vessel and observe the fishing activity. Fishing boats may be converted, adapted or purpose-built, they must have some space available for tourists and must comply with the prerequisite first aid, health and safety equipment as tourists are not familiar with the professional fishing activity and any fishing machinery or gear present.

Some scholars consider boat fishing tourism as part of marine ecotourism (Holland et al., 1998: 1-20; 2000: 346-351), especially when the fishing activity is based on the catch and release technique. However, the majority of scholars do not support this view because of the consumption nature of this activity (Ceballos-Lascuráin, 1996; Fennell, 2000: 341-345; Goodwin, 1996: 277-291).

### Fishing tourism and the European Union

Although professional fishing is the livelihood for the inhabitants of many coastal and inland areas in Europe, local communities can no longer rely exclusively upon fisheries given the limited fish stocks. Moreover,

*"[t]he revenue and jobs that tourism can bring to an area can help diversify the local economy and job market, as well as providing additional income for fishing families, sometimes ensuring that their production activity remains viable. [...] [T]ourism can also help to improve sales of local fish through a range of activities, such as direct sales to tourists, promotion in local restaurants, and festivals that raise awareness of the area's fishing activity and products."* (Budzich-Tabor et al., 2014: 3).

Attracting tourists who seek for a more genuine experience and who want to engage in more traditional activities such as fishing helps tourism destinations to get away from the typical sun, sea and sand package and develop sustainable tourism which supports and contributes to local community development while appreciating the economic benefits of tourism.

The European Maritime and Fisheries Fund (EMFF), established by virtue of Regulation (EU) No 508/2014, is one of the five European Structural and Investment (ESI) Funds which complement each other and seek to promote a growth and job based recovery in Europe. The fund helps fishermen in the transition to sustainable fishing, supports coastal communities in diversifying their economies, finances projects that create new jobs and improve quality of life along European coasts and makes it easier for applicants to access financing (European Commission, 2015). More specifically, in par. 1 Article 30 "Diversification and new forms of income" it is stated that *"[t]he EMFF may support investments contributing to the diversification of the income of fishermen through the development of complementary activities, including investments on board, angling tourism, restaurants, environmental services related to fishing and educational activities concerning fishing."*

To this aim, the contribution of the European Fisheries Areas Network (FARNET) to the promotion of fisheries-related tourism activities is very important. FARNET is the community of people implementing Community-Led Local Development (CLLD) under the European Maritime and Fisheries Fund (EMFF). Continuing the area-based approach initiated by Axis 4 of the European Fisheries Fund (EFF), CLLD under the EMFF brings new opportunities for local communities to tackle the multiple challenges faced by coastal and fisheries areas across the EU. CLLD funding is delegated to **local partnerships** that bring together the private sector, local authorities and civil society organizations. Known as Fisheries Local Action Groups (FLAGs), these partnerships fund local projects within the framework of a strategy, developed in response to specific needs and opportunities identified locally (FARNET, 2015). A successful project example is the Arts and Fisheries Festival in Ancona, Italy, which promotes cooperation between the fisheries sector and the contemporary arts community in order to improve the attractiveness of the harbor area (FARNET, 2011a). Another project is the Fishing Village Anno 1906 project, which consisted in establishing a rustic fishing village in the entrance of Bremerhaven's port in Germany, made up of 11 thatched huts

based on traditional fishing huts from the year 1906. This project resulted in the diversification of the businesses and helped improve the image of the area (FARNET, 2011b).

In the new Greek Operational Programme Fisheries 2014-2020, 35.6% of the budget, that is 186.2 million Euros, is allocated to the fisheries sector in order to support innovation measures, partnerships between fishermen and scientists, investment in vessels, revenue diversification such as fishing tourism<sup>27</sup>, protection and rehabilitation of marine biodiversity as well as investment in infrastructure such as fishing ports, landing sites, fish auctions and fishing shelters (Ministry of Rural Development and Food, 2014: 5).

### Fishing tourism in Greece

In Greece, fishing tourism is related with insularity, which is the core of the economic policy for sustainable development, and which is enshrined in the Constitution of Greece. More specifically, in accordance with Article 101 par. 4 of the Constitution of Greece, as revised by the parliamentary resolution of 27 May 2008: "The legislator and the Public Administration, when acting in their regulatory capacity, are bound to take into consideration the special circumstances of the insular and mountainous areas caring for their development". Moreover, in accordance with Article 106:

*"In order to consolidate social peace and protect the general interest, the State shall plan and coordinate economic activity in the Country, aiming at safeguarding the economic development of all sectors of the national economy. The State shall take all measures necessary to develop sources of national wealth in the atmosphere, in underground and underwater deposits, and to promote regional development and to further especially the economy of mountainous, insular and frontier areas."*

In this constitutional context, fishing tourism is regulated by the relevant line ministries (e.g. Ministry of Economy and Development, Ministry of Environment and Energy, Ministry of Shipping and Island Policy, Ministry of Tourism, Ministry of Rural Development and Food.) Law no. 4070/2012 "Arrangements on Electronic Communications, Transport, Public Works, Section E ("Pesca-tourism" – Articles 174 to 184) aims to allow for the diversification of the fisheries sector, including the possibility of undertaking pesca-tourism activities and introduces the institutional framework for the organization and operation of fishing tourism activities in Greece. This was followed by Law no. 4179/2013 (Articles 40-43) "Simplifying procedures for strengthening entrepreneurship in tourism, restructuring of the Greek National Tourism Organization and other provisions".

### First regulation of fishing tourism in Greece

Law no. 4070/2012 aims at attracting tourists beyond the usual tourism season and bringing forward and utilizing the unique comparative advantage of the country, with regard to the fishing activity in freshwater (lakes, ponds, rivers, estuaries) and at sea. In addition to this, said Law seeks to showcase the lifestyle of professional fishermen and the wealth of the Greek maritime cultural heritage as well as enrich the tourists' authentic experiences with respect to the natural and cultural environment (Explanatory Memorandum of Law no. 4070/2012). Fishing tourism consists in providing business packages of tourism services and goods related to fisheries, aquaculture, sponges and to all the cultural and gastronomic environment of fishing communities. The Law provides for the granting of a special license for fishing tourism businesses owned by fishermen or cooperatives of fishermen or fish farmers, who use professional fishing or sponge fishing boats. Said Law sets out the definition of the concept of fishing tourism, the licensing procedure of fishing tourism or recreational fishing businesses, the periods when the fishery-tourism activity can be performed and the areas where it can be performed, the fishing methods, the technical characteristics of the gear, the safety requirements, the sanctions in case of a breach of legislation as well as tax and insurance arrangements for the fishermen who perform fishing tourism activities.

More specifically, by virtue of Article 175 of Law no. 4070/2012, fishing tourism is defined as: "a special form of rural tourism which consists in a set of activities providing packages of tourism services and goods, related with the fisheries, sponge fishing and aquaculture production, the cultural environment of fishing communities, the fisheries, sponge fishing and aquaculture activities and the respective practices, and the local customs related with them, the local products, the traditional cuisine and local gastronomy related with fisheries, sponge fishing and aquaculture, the organization of festivals and events in rural and fishing areas based on the local customs, the local culture and

<sup>27</sup> The concept of 'fishing tourism' first appeared in the actions of the European Operational Programme Fisheries 2000-2006.

*the local traditions*". It should be noted that at the time said Law was passed there was no legislation regulating the content of the concept of 'rural tourism'.

Fishing tourism also includes the demonstration to tourists-visitors of fishing and sponge fishing techniques, methods of farming and culture of aquatic organisms and the use of specific methods and gears as well as the direct and active participation of tourists-visitors in these activities and practices performed in waters and in special sites in the coastal, river and lake zone. It also includes the provision of hospitality and food services in coastal, river and lake areas of fishing communities and the possibility for tourists-visitors to participate in activities which allow them to acquire knowledge and experience, through their contact with fisheries and sponge fishing and their natural, social and cultural environment, and finally the organization of educational and informative seminars for all the above. In addition to this, said Law defines the concept of a fishing tourism business which can provide the above services and which has to meet the following requirements: a) it should be owned by a professional fisherman or professional fishermen or professional fishermen's associations or aquaculture producers or its capital should be at least by 50% owned by a professional fisherman, professional fishermen or professional fishermen's associations or aquaculture producers and b) it should use professional fishing or sponge fishing vessels which are registered on the National Fisheries Register or the Register of Fishing Vessels of Inland Waters.

From the above it is concluded that said Law has broadened the range of fishing tourism activities, allowing not only recreational fishing but also a variety of informative and awareness raising activities or participatory activities which get tourists-visitors involved in the fishing procedure. The innovation is that fishing tourism activities are enriched with fish farming and aquaculture related activities.

### Regulatory framework in force

One year later, Law no. 4179/2013 was passed with a view to simplifying the institutional framework regulating fishing tourism and promoting environmental awareness and sustainable development. The content of the concept of 'fishing tourism' was amended as it is no longer a special form of rural tourism but a category of Special Interest Tourism. In pursuance with Article 40 *"fishing tourism is a form of Special Interest Tourism which consists in providing tourism services linked with fisheries, sponge fishing, aquaculture and related practices and techniques, traditions and local customs, the local products, the traditional cuisine and the local gastronomy"*.

Under the new definition, entrepreneurship in fishing tourism is downplayed as it only refers to the provision of tourism services, in contrast with the respective definition under Law no. 4070/2012 which referred to tourism services and goods provided by businesses. This change probably occurred because there was a risk of professional fishermen becoming tourism entrepreneurs.

It is clear that the cultural dimension of fishing tourism is a key component of the concept of 'fishing tourism', even though the new definition is more limited in scope as it does not include any more the organization of festivals and events in rural and fishing areas based on the local customs, the local culture and the local traditions.

### Requirements for performing fishing tourism activities

The above Law defines some concepts and regulates certain issues with regard to fishing tourism activities:

- *Professional fisherman*. A 'professional fisherman' is any natural person: a) who owns legally a professional fishing vessel or sponge fishing vessel even if this is partially-owned, b) said vessel is registered on the National Fisheries Register or the Register of Fishing Vessels of Inland Waters, c) who performs individually or in cooperation with other people the activity of professional fishing or sponge fishing or the capture or the culture or the collection of aquatic organisms in freshwater, brackish water or saltwater for commercial purposes (Article 175, par. 4, Law no. 4070/2012).
- *Performing fishing tourism activities*. Professional fishermen who own professional fishing vessels can perform fishing tourism activities as long as fishing and sponge fishing are carried out exclusively on board a fishing or sponge fishing vessel: a) which is registered on the National Fisheries Register or the Register of Fishing Vessels of Inland Waters, b) whose owner holds a professional fishing or sponge fishing license and c) which embarks on board non-crew members (visitors-tourists). The basic requirement for performing fishing tourism activities is that these are carried out with the use of professional gear as set out in the Fisheries Code (Legislative Decree no. 420/1970) and the General Port Regulations in force.

- *Visitors-tourists.* A 'visitor-tourist' in fishing tourism is any natural person who embarks aboard a professional fishing or sponge fishing vessel and who is not a crew member of this vessel. Persons under the age of 14 should be accompanied by an adult. The Law stipulates that no individual fishing licenses are required for visitors-tourists. Obviously, this specific provision overrides the general provision by virtue of which an individual amateur fishing license was required for any person wishing to engage in amateur fishing (Mylonopoulos, 2002: 188-191). The general provision on the obligation of holding an individual amateur fishing license was abolished under Law no. 4256/2014 "Tourist Yachts and other provisions", Article 14, par. 2 (Gov. Gazette A92).
- The professional fishing or sponge fishing vessels which are used for performing fishing tourism activities have to disembark visitors-tourists in the port of their embarkation. This obligation may be waived if warranted on the protection of the health of visitors-tourists, on safety grounds for the vessel or the visitors-tourists, on adverse weather conditions or in cases of force majeure.
- *Periods when the fishing tourism can be performed, fishing methods and gears, safety measures.* Fishing tourism activities at sea can be performed throughout the year as long as the professional fishing vessels are equipped with a shelter for the protection of those on board. They can also be performed over the periods when there is no prohibition to fish depending on the gear used.

The operation of the fishing vessel and the performance of fishing tourism activities on board are governed by the fisheries-related legislation in force and any infringement is punishable by the sanctions provided for in the Fishing Code, Article 11 of L.D. no. 420/1970 (Gov. Gazette A27). Moreover, an administrative sanction can include the cessation of the exercise of fishing tourism for one year in case the professional fishing vessel breaches the applicable legislation on fishing tourism, fisheries and tourism. This sanction is imposed as a complement to other administrative, disciplinary or penal sanctions. In case there is a cessation of the exercise of fishing tourism twice within a period of five years, the professional fisherman, sponge fisherman or aquaculture producer or the owner of the professional fishing vessel is no longer entitled to exercise fishing tourism.

### **Administrative framework for exercising fishing tourism in Greece**

Pursuant to Article 40, par. 1b of Law no. 4179/2013, the Joint Ministerial Decision no. 414/2354/2015 (Gov. Gazette B97) was published. In accordance with said Joint Ministerial Decision, the circular no. 2834/52781 of 13 May 2015 was issued, which regulates the requirements, terms and procedures for professional fishermen who want to exercise fishing tourism in Greece. This circular was published by the former Ministry of Productive Reconstruction, Environment and Energy, Directorate General for Sustainable Fisheries, Directorate of Fisheries Policy and Fisheries Resources, Section C for the Development of Commercial Fishing.<sup>28</sup>

The administrative framework with regard to the performance of fishing tourism activities in Greece is the following:

- To start a fishing tourism business the notification request should be submitted to the Fisheries Agency of the Regional Unit which keeps the file of the vessel. The Fisheries Agency collaborates with the competent Port Authority for the approval of fishing tourism activities.
- The vessels which practice fishing tourism should have a maximum length of 15 meters and be equipped with a professional fishing license with gear in full working order, with the exception of towed trawl nets fisheries (trawler) and the seine (boat seine). They should also meet the requirements for professional tourist boats and the stability requirements as set out in Presidential Decree no. 918/1979 and should take up to 12 passengers. In addition to this, a seaworthiness certificate (a Safety Certificate or general inspection protocol or Permit to Operate as appropriate) is required, indicating the maximum number of passengers they can take up and the authorized area of fishing trips. The vessels should be arranged in such a way that passengers are safe at all times during the fishing activity and not hamper it.
- During the fishing tourism activities, the professional fishermen or sponge fishermen can demonstrate fishing or sponge fishing techniques, using the fishing methods and gears which are prescribed on the professional license of the vessel. Fishing gear on board the vessel should not hamper the free and safe movement of passengers-tourists.

<sup>28</sup> Fishing that is done with lines, nets, boats, trawlers and the like, as opposed to fish-farming.

- d) Passengers- tourists are only allowed to fish by line, troll and handliners, manually and not with mechanical support. Tourists while on board can only participate under the captain's responsibility in fishing tourism activities which do not jeopardize their safety.
- e) Professional fishermen are obliged to observe the legislation in force, with regard to the navigation safety regulations, the staffing, the hygiene and the suitability of the fishing vessel to embark on board visitors-tourists. Before starting performing fishing tourism activities, professional fishermen should inform in writing the competent Port Authority about their intention to perform fishing tourism activities in its territorial jurisdiction.

### Sanctions

Recreational fishing tourism operators in Greece are subject to the fisheries and tourism legislation. So, in case of infringement of the legislation in force, the sanctions provided for by Article 11, L.D. no. 420/1970 «Fishing Code», Laws no. 4070/2012 and no. 4179/2013, and by Article 5 of no. 414/2354/2015 JMD are imposed. The penalties are: a) withdrawal of the individual recreational fishing license of the captain and withdrawal of the recreational fishing license of the vessel; b) Fine incurred, depending on the gravity of the breach or misconduct in question.

### Conclusion

The sustainable development of the marine environment requires an integrated management which has to balance different factors: ecological, economic, social, cultural and administrative. Sustainable development has to protect and preserve the marine environment and the socio-cultural identity of coastal areas as the marine environment is a natural resource with a huge economic potential.

Policy planning has to aim at the satisfaction of the social needs, thus it has to involve the active participation of the citizens, the local government and the central administration. Moreover, the essential component of this management is to raise awareness among the general public on understanding how the ecosystems work, which is a prerequisite for them to become aware of the ecological, aesthetic and cultural value of the marine environment. In this context, the development of fishing tourism as a category of Special Interest Tourism forms part of the Community legislation and the Greek legislation.

As fishing tourism was recently introduced in the Greek legislation, it is still early to draw conclusions on its effectiveness and impact. Future research could be conducted on the way the new legal framework is implemented and accepted by the stakeholders from the public and the private sector and on its impact on the marine environment.

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## Economic Growth of Indian Tourism Industry: Based on Analysis and Appraisal of Foreign Tourist Arrivals

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### Abstract

Tourism is an activity of great socio-economic importance, as it facilitates economic growth and development of the region with social and cultural intermixing. It promotes cultural understanding among societies throughout the world in a positive sense, while severe ecological and cultural deteriorations, lack of cultural uniqueness are the negative results of tourism. The world is changing very rapidly; motives of humans have been changed totally, industrialization, modernization and technological advancements have transformed the aspirations of man; now peoples are moving efficiently all around the globe in search of unknown, peace, leisure, and adventure. Benefits of liberalization and globalization are providing pace and energy to the tourism and related activities. India, one of the oldest civilizations of the world with its socio-cultural uniqueness, vast physiographical theatre, highest levels of natural biodiversity, is the obvious and evident destination of tourists. Historical monuments, great cultural diversities and marvelous cuisines, etc. also attract peoples towards India from all around the world. Tourist influx in India is in abundance. Total tourists were 2.65 million in the year 2000 which increased to 7.68 million in the year 2014. The total increase was about 2.9 times with 7.90 per cent of compound annual growth rate (CAGR) from the year 2000 to 2014. Presently, the country is cultivating the benefits of rising tourism industry with severe socio-economic disparities, and environmental and infrastructural constraints. All these must be regularized and should be according to the norms of sustainable tourism development. The paper evaluates and investigates the trends of foreign tourist influx in India and analyzes the receipts by foreign tourist arrivals, and also focuses on the relations between them so that plans and policies must be implemented accordingly and optimum and sustainable tourism development must be promoted in near future.

**Keywords:** analysis and appraisal, cultural intermixing, economic growth, foreign tourist arrivals, socio-economic importance, sustainable tourism

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### INTRODUCTION

Tourism is the act and process of spending time away from home in pursuit of recreation, relaxation, and pleasure, while making use of the commercial provision (Britannica Encyclopedia, 2015). Modern advancements have given the pace to the tourism and transformed it into an industry. Tourism has become the fashion of the modern societies (Bajpai, Yadav & Pandey, 2015). Travel & Tourism's impact on the economic and social development of a country can be enormous; opening it up for business, trade and capital investment, creating jobs and entrepreneurialism for the workforce and protecting heritage and cultural values (WTTCTravel & Tourism Economic Impact, 2015). History of tourism in India is as old as the Indian civilization itself. India is the center of world famous heritage and cultural sites viz., The Taj, Ajanta and Ellora, exotic sites of Khazuraho, Ghats of Varanasi, Temples of Mathura and Vrindavan, etc. and many more and the hotspot of some famous and UNO recognized biodiversity sites. Indian glory and wealth attracted European and Greeks crossing the land between Asia and Europe. Establishment of India Tourism Development Corporation (ITDC) in the year 1966 played a major role in tourism development in India. Various five year plans provided pace in Indian tourism industry. The Sixth Plan (1980-85) was a major landmark in the history of Indian Tourism in which „Tourism Policy“ of the country was announced. After that tourism has taken the status of an industry in the country. Tourism has direct, indirect and dynamic effects and also it is important to note that tourism can also have negative impacts on local livelihoods and economies (Ashley, C. et al., 2007). Travel

& Tourism generated US\$7.6 trillion (10% of global GDP) and 277 million jobs (1 in 11 jobs) for the global economy in 2014. The direct contribution of Travel & Tourism to GDP in 2014 was INR2,478.2bn (2.2% of GDP). This is forecast to rise by 7.6% to INR2,667.5bn in 2015. (WTTC Travel & Tourism Economic Impact, 2015). Development of the tourism is linked to the social and economic status of the nations and vice-versa. Development of proper vehicular parking, efficient travel amenities, and well-furnished roads and railways, world class lodging and hospitality conditions, inexpensive, hygienic and good quality food, fresh and clean drinking water, etc. are the requisites (Yadav, Bajpai & Pandey, 2015). The direct contribution of Travel & Tourism to GDP is expected to grow by 7.2% pa to INR5,339.2bn (2.5% of GDP) by 2025. (WTTC Travel & Tourism Economic Impact, 2015). Contrary to these tourism activities also caused various social and economic crimes, socio-economic disparities, infrastructural problems, cultural degradation, biodiversity and environmental constraints. Tourism and environment are intricately related. The increasing tourism activities in a tourist destination often result in overuse and degradation of the environment and resources of tourism, which in turn lead to a decline in the growth of tourism, and loss of tourism value of the destination (Joshi, & Dhyani, 2009). Tourists are demanding the greening of tourism. Traditional mass tourism has reached a stage of steady growth. In contrast, ecotourism, nature, heritage, cultural, and "soft adventure" tourism is taking the lead and are predicted to grow rapidly over the next two decades (Pratt, L. & UNEP, WTO; UNWTO. 2011).

## STUDY AREA

India is a land of countless diversities, one can easily notice these diversities in diverse peoples, religion and culture. The mainland of the study area lies between 8° 4' N and 37° 6' N latitudes and 68° 7' E and 97° 25' E longitudes, while the southernmost tip of the Nicobar touches the parallel of 6° 45' N. India commands a total geographical area of 32,87,263 sq.km, which is roughly 0.57 per cent of the area of the whole earth and 2.4 per cent of the total area of the land hemisphere. According to the census of India 2011 the total population of the country is 1,21,01,93,422 with a sex ratio of 940 females per thousand males (Census, 2011). India has a lot of potential in the sense of tourism and it can offer a lot to its peoples and also to the peoples throughout the globe. The Country is endowed with Mighty Himalayas in the North to the sunny and beautiful beaches in the South; from exquisite natural and cultural beauty in the East to the marvelous beauty of the West. Colorful festivals and exotic food in India and vicinity have attracted people from time immemorial.

## OBJECTIVES

The main objectives of the research paper are as follows:

1. To study and analyze the temporal trends of foreign tourist arrivals in India.
2. To compare the world and Indian tourism receipts, its trends and growth patterns.
3. To calculate the co-relation among international tourist arrivals in the world and India and received receipts from them, evaluate the impacts and predict future requirements of optimum and sustainable tourism activities in India.

## METHODS

The data used in the present study are secondary in nature and collected from different sources. Various informative resources such as Books, Reports, Articles, and Research papers etc. have been concerned. Comparative analysis of total tourist arrivals in the world and India has done. Co-relation, Percentage Growth, Percentage Share, and Compound Annual Growth Rate (CAGR) has been calculated to analyze the data and draw the results.

## RESULTS, EXPLANATIONS AND EVALUATIONS

Table 1. shows the trends of foreign tourist arrivals in India for the year 2000 to 2014. The analysis of the data of foreign tourist arrivals in the study span i.e., for the last 15 years from 2000 to 2014; it is clear that foreign tourist arrivals are showing the increasing trends for 2.65 million in the year 2000 to 7.68 million in the year 2014. The year 2001, 2002 and 2009 are showing the negative growth trends whereas, all the remaining years viz. the year from 2003 to 2008, 2010 to 2014 are showing the positive growth trends of foreign tourist arrivals in India. More particularly from the year 2003 to 2007 and the year 2010 and 2014 have shown double digit growth (Table 1. & Fig.

2). The reason behind this tremendous growth mainly links with the flourishing tourism industry in India, tourism plans and policy implementations by the government, rapidly growing Indian economy, availability of easily accessible and affordable tour, travel and accommodation facilities, and heavy investments in tourism and related activities to enhance the quality of tourism activities and services. The year 2008 witnessed a sudden drop in the foreign tourist arrivals in India whereas, the year 2009 showed negative growth from its previous year these trends are the result of worldwide recession. In the year the global drop of tourist was - 3.71 per cent, whereas in India drop was only - 2.18 per cent, it shows that Indian tourism industry was affected by the global recession but not as the conditions were severe in the overall world tourism industry.

There is a high degree of positive co-relation (.995) between the world and Indian foreign tourist arrivals, which shows that Indian tourism industry is directly influenced by world tourism trends. But in the year 2002 world tourist arrivals increased positively with 2.9 percent of growth rate of its previous year 2001, while the Indian tourist arrivals decreased by - 6.03 per cent from 2.54 million to 2.38 million in the year 2001 to 2002, respectively.

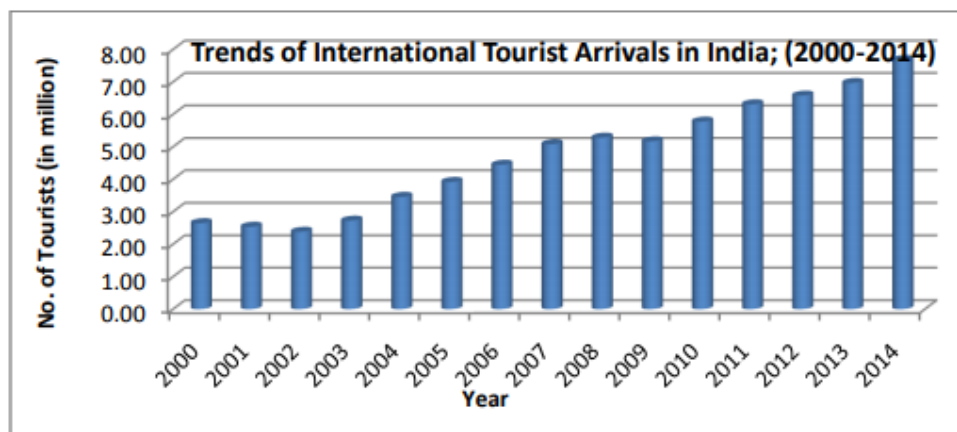
**Table 1: International Tourist Arrivals and Growth Trends in India and World; (2000-2014)**

Year	Foreign Tourists Arrivals in India (in million)	International Tourist Arrivals in World (in million)	Percentage Share of India	World of Growth (in %)	Growth in India (in %)
2000	2.65	683.3	0.39	7.80	6.70
2001	2.54	683.4	0.37	0.01	-4.23
2002	2.38	703.2	0.34	2.90	-6.03
2003	2.73	691.0	0.39	-1.73	14.34
2004	3.46	762.0	0.45	10.27	26.82
2005	3.92	798.0	0.49	4.72	13.34
2006	4.45	846.0	0.53	6.02	13.49
2007	5.08	894.0	0.57	5.67	14.26
2008	5.28	917.0	0.58	2.57	3.96
2009	5.17	883.0	0.59	-3.71	-2.18
2010	5.78	948.0	0.61	7.36	11.77
2011	6.31	994.0	0.63	4.85	9.24
2012	6.58	1039.0	0.63	4.53	4.26
2013	6.97	1087.0	0.64	4.62	5.93
2014	7.68	1133.0*	0.68	4.23	10.21
<b>CAGR</b>	<b>7.90%</b>	<b>3.68%</b>			

**Source:** Indian Tourism Statistics, 2014 & Calculated by the Author, \* Provisional

**Note:** Data may slightly differ due to rounding off.

Percentage share of foreign tourist arrivals in India are increasing continuously, but the growth is steady. It increased from 0.39 per cent in 2000 to 0.68 per cent in the year 2014 during the study span. But the year 2001 and 2002 are exception, in which percentage share of foreign tourist arrivals in India decreased from its previous years (Table 1. & Fig. 3).



**Fig. 2: Trends of Foreign Tourist Arrivals in India; (2000-2014)**

Table 2. shows the month-wise foreign tourist arrivals in India for the year 2012, 2013 and 2014. The calculated average of month-wise foreign tourist arrivals depict that the average highest foreign tourist arrivals are in the month of December, ranks 1st; January is on 2nd and February is in 3rd position. So it can be predicted that foreign tourists mostly, prefer winter to visit India; as the maximum tourist come to India from cold weather countries, so they prefer to come in the winter months to abstain from the hot sticky summers in India during the rest of the year. Another reason is that in most of the European and American countries severe cold climatic conditions prevails in these months, so; they prefer to dedicate this time to tourism activities.



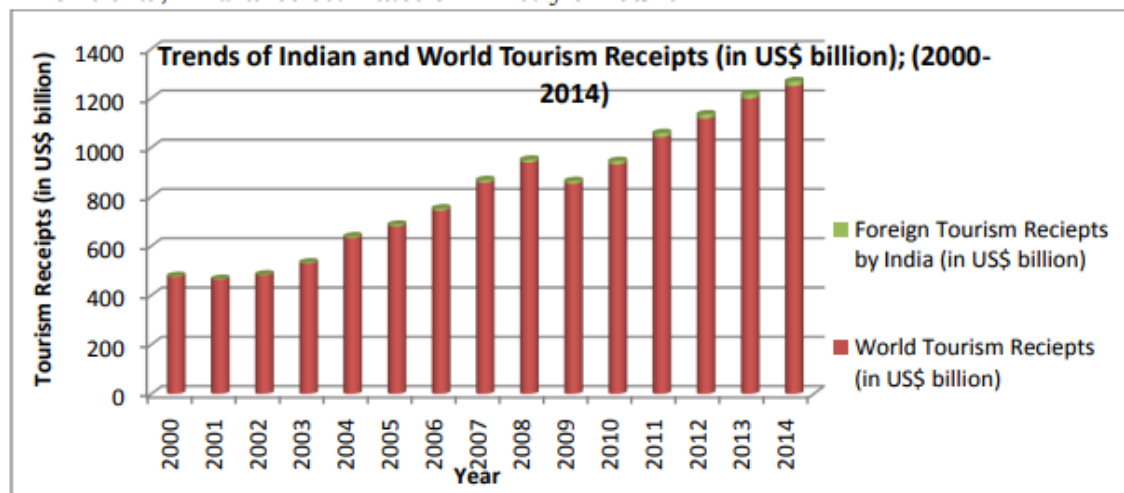
**Fig. 3: Trends of Foreign Tourist Arrivals in India against World; (2000-2014)**

**Table 3: Indian and World Tourism Receipts (in US\$ billion); (2000-2014)**

Year	World Tourism Receipts (in US\$ billion)	Foreign Tourism Receipts by India (in US\$ billion)	Percentage Share of India
2000	475.3	3.46	0.73
2001	463.8	3.20	0.69
2002	481.9	3.10	0.64
2003	529.3	4.46	0.84
2004	633.2	6.17	0.97
2005	679.6	7.49	1.10
2006	744.0	8.63	1.16
2007	857.0	10.73	1.25
2008	939.0	11.83	1.26
2009	853.0	11.13	1.30
2010	931.0	14.19#	1.52
2011	1042.0	16.56#	1.59
2012	1117.0	17.74#	1.59
2013	1198.0	18.44#	1.54
2014	1249.0*	20.24#	1.62
<b>CAGR</b>	<b>7.14%</b>	<b>13.45%</b>	

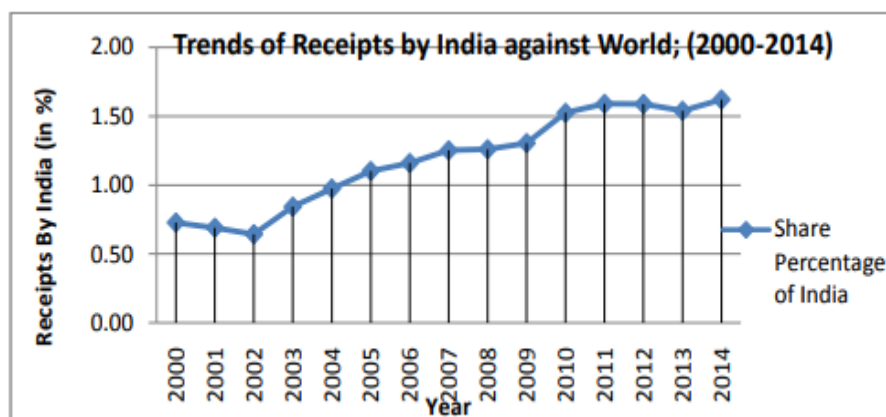
**Source:** Indian Tourism Statistics, 2014, UNWTO World Tourism Barometer, October, 2015& Calculated by the Author

\* Provisional, # Advance estimates of Ministry of Tourism



**Fig. 4: Trends of Indian and World Tourism Receipts (in US\$ billion); (2000-2014)**

From table 3, it is clear that foreign tourism receipts by India are also increased continuously from the year 2003 to 2014. The only exceptions are the year 2001 and 2002 in which decline has been recorded from its previous years. The total receipts increased by 5.8 times from 3.46 US\$ to 20.24 US\$ in the year 2000 to 2014 respectively (Table 3. & Fig. 5). Foreign tourist arrivals are affecting Indian economy positively in terms of money and foreign exchange. The percentage share of Indian foreign receipts of tourism is increasing continuously from 0.73 per cent (year 2000) to 1.62 per cent in the year 2014 with only exceptions of year 2001 and 2002. The cause behind this increase in foreign receipts is mainly due to increased number of foreign tourist arrivals in India. The co-relation (.994) between both them shows a high degree of positive co-relation between them. The other factors which influence heavy foreign receipts are availability of world class amenities, good economic status of tourists, will to spend money, and also the nature and purpose of tourism. In recent, availability of cheap and advanced medical facilities in India has opened new vistas of medical tourism.



**Fig. 5: Trends of Receipts by India against World; (2000-2014)**

## CONCLUSION

The study reveals the trends of foreign tourist arrivals and the fee receipts/foreign exchange received by these tourists in India from the year 2000 to 2014 and also the relation between both them. The CAGR for tourist arrivals in India is 7.90 per cent as compared to world of only 3.68 per cent from 2000 to 2014. While, the CAGR of received receipts of India increased by 13.45 per cent annually, much higher than the world of only 7.14 per cent. It shows that country is receiving a good quantity of foreign tourist every year and also earning good amount of foreign exchange in the result. At the same time increasing tourism activities are resulting in overuse and degradation of the environment and resources of the country. Destruction of heritage sites, deterioration of natural settings and biodiversity, socioeconomic, and developmental imbalances and related crimes are more prevalent, which in turn may lead to turn down in the growth of tourism, and loss of tourism value and receipts. All these must be checked

and plans and policies must be implemented according to the international norms with a conservative approach towards physio-cultural environment and tourism sites. Green tourism must be facilitated in the country. Low levels of energy consumption, reduced use of Green House Gases, proper waste management, water management, controlled use of fossil fuels, conservation of biodiversity and cultural heritage are requirements of the present for future sustainable tourism. There must be some awareness programs for tourists the about the importance and uniqueness of heritage sites and environmental values. All these can make India a much better destination for tourism and the benefits of flourishing Indian tourismindustry may be cultivated in full with the upkeep of heritage sites and ecology.

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## Integrity Centered Leadership for Global Sustained Innovation

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### **Abstract:**

*Successful leaders are often studied for their business acumen and strategic thinking. Little attention is given to two essential aspects of their effectiveness, their developmental journeys and future aspirations. Awareness that someone has arrived at the peak of their life should be an invitation to conquer more peaks rather than allowing their lofty human journey to stall at the current altitude. This paper explores developmental trajectories of global business leaders, asking questions such as how did they conquer this peak, what roads did they take, what innovations and spontaneous extraordinary solutions did they apply? Anecdotes from around the world hint at powerful stories, each unique yet sharing a common feature, principle-centered leadership. Clarity of thought will be shown as the most effective tool that provides them with confidence, then courage, to keep climbing while visualizing that a next higher peak is attainable and right around the corner. Their relentless passion, purpose, planning, and persistence lead to sustained innovation through leadership that transforms into Integrity Centered Leadership for themselves, their followers, and the world.*

**Keywords:** *mindfulness, awareness, integrity, focus, determination, empowerment*

**Main Conference Topic:** *Economy, Entrepreneurship and Globalization*

Why:

*"He who has a 'Why' to live for, can bear almost any 'How.' - Nietzsche.*

The purpose of this paper is to raise awareness about integrity, innovation, and sustainable leadership. Centuries have gone by researching leadership and innovation, and yet very little attention or focus has been given to integrity as one of the most salient attributes and values of leadership. Everyone believes that Integrity is the truest form of leadership, but behaving and leading with utmost Integrity is rarely found in most societies and communities. This paper brings additional insights into what Integrity Centered Leadership is and why it is essential to catalyze and sustain innovation.

Integrity Centered Leadership is operationalized in this paper as *Leaders who are the same entities in front of an open door addressing thousands of people, and remain and retain that same level of Truthfulness and mindfulness when they are behind closed doors, when no one is watching.*

Who:

If the population at large doesn't 'Walk the Talk,' then leaders have not lived up to their duty. Leaders with diminished integrity deteriorate faster than lightning. Societies that don't care to elevate and enhance this topic of Integrity will produce chaos, such as that we are witnessing in present day. Further, without integrity, chaos will become endless and immeasurable with no reversal or recourse.

How:

At each interaction and in every decision, organizations must be cognizant of steps taken in 'the dark alleys of absence of integrity.' The world has shown and proven time and time again that deceit gets away and gains ground, but at what cost? Alas! Intuition, insights, foresight, and judgement portray that gains through deceit are merely temporary, and never sustainable.

Judgement:

Those who lack integrity in their narrow pursuit of victory risk much. Standing tall with Integrity Centered Leadership as their 'Rock of Gibraltar' can serve as a life preserver for those lost in the games of deceit. Integrity Centered Leadership can assist confused and distracted leaders to navigate more effectively in uncertain conditions. Integrity today protects future generations by diffusing ambiguity and producing clarity for sustainable action.

Destination:

What must happen for this road to become 'The Highway of Choice?' Integrity Centered Leadership must take on a focused, determined mindset and drive organizations and people toward scalable, global, ethical, and strategic outcomes. This style of leadership is reflexive and process driven, marked by consistent humility, empathy, and empowerment of others. It seeks to learn continuously, be inclusive, embrace cultural competency, partner with diverse stakeholders and give them the credit. This is because Integrity Centered Leadership is a journey that is almost never embarked on in isolation or a silo.

Mindfulness brings global mind shift:

Everyone has a powerful story. In fact, everyone is a powerful story. A fundamental question we must answer is how to turn those powerful stories into memorable catalysts, not only for the current time, but to endure on a sustainable and strategic level for the long term.

What does it take to build sustained and innovative global leadership? Not once will it be claimed that it is easy to do. However, the key to Integrity Centered Leadership for Sustained Innovation is fidelity: *Focused Integrity with Determination to Empower Legacy in Intuition, Trust & Yearning.....for learning.* -Ben Pandya.

Mindfulness is a continuous and conscious journey in meditation. This entails being aware and staying in the moment. Intentional acts of mindfulness and increasing frequency of repetition transform this into a habit of a powerful and a confident journey. It is this mindfulness that invites thoughts of success, such as believing that each day will turn out to be either fantastic or better than fantastic. No one, in this case, would dare shape this leader's days to be even mediocre.

Clarity of thought and determined focus on personal goals tend to provide infinite courage to be confident. They also invite 'students of life' to stay and cherish the moment in which they are currently placed. There are 1440 minutes (24 Hours) of mindfulness opportunities available to each one of us every day. Mindfulness arises from a cultivated state of introspection.

Take this journey to a tropical country, where a nine-year-old boy, living in a well to do family was celebrating a birthday offering to the statue of a saint who had passed decades ago. Once the worship rituals concluded, everyone left to enjoy dinner that was being served downstairs in the dining room. He was the last one to leave, and spontaneously thought to leave the lights and the cooler fan on. Why? So, the Statue of the saint could enjoy the offering in a cooler and well-lit room. This room was his temple. The boy believed the saint was there in 'Spirit,' and thus in reality. The whole reason for the worship was to ensure that the offering was served to the saint on his birthday. That level of mindfulness and awareness never left the boy even when he grew up to be one of the most successful leaders in corporate America.

That young boy designated himself a CLO, Continuous Learning Organization. He continued to learn and develop from every source possible. This continuous learning became an essential step on his road to mastery. He started to understand that all leaders must find and forge their path to blossom. The fundamental tenet of Integrity Centered Leadership is that mastery in any field is not about reaching the peak, but about the learning, introspecting, and navigating towards continuous personal growth and development.

Recent studies offer compelling evidence that mindfulness increases concentration for students from early stages in life. It provides them with happier and more fulfilled and positive outlook in life. This, in turn, provides sustaining energy that has the potential to become contagious. Mindfulness does not have to be named as such. It can occur anywhere there is an intent to visualize every object and space as significant and purposeful in its own right.

Why, then, has leadership been so short term, short lived and less innovative in last few decades? How can leadership become globally sustainable?

Leadership and success can be defined in more ways than our individual thoughts. As infinite as minds and our mental aptitude and capabilities are, our imagination is even more limitless. Whatever the definition of leadership and success, both of these journeys begin with 'Awareness.' Awareness is the first step in any journey. That awareness arises and is uncovered because of introspective Mindfulness.

There are enormous numbers of articles, concepts, phenomena, strategies, and literature that cover leadership and innovation dating back to the early days of human evolution. Almost all these definitions have been dynamic, elevating and enhancing implementation of leadership in personal lives and, perhaps more importantly, in corporate lives. Although there may be numerous ways a person can take to rise and grow as a leader, what are considered to be best practices in leadership development may not be available for all to take. Therefore, developing an individual roadmap and path that is both accessible based on one's circumstances, and personally meaningful and motivating based on one's values, can be an effective alternative.

"A small step for a man; a giant leap for a mankind."-Neil Armstrong, Astronaut, 1969. Everyone has a spark in them to contribute greatly to society and to sustainability with a global reach. The unanswered question for most people is, what contribution do they aspire to make? What age is most appropriate to ignite that spark and begin the journey for the road ahead? What are key triggers to light the spark in each individual? The answers vary for each of us seeking those answers. There are an infinite number of leaders that remain unknown entities. Those who end up being the harbingers of the future using the fulcrum of leadership do so by surfacing and sharing their exemplary and powerful stories.

These stories can come in many forms. For instance, someone who lost their father at nine years old and found the world calling them to help other people overcome debilitating ailments in Calcutta, later to be described as, 'When they bury her, we will have lost something that can not be replaced.' Another example is someone who, at age 12, jumped from a window and fought a life threatening pneumonia and having part of a lung excised, yet through those obstacles gained inspiration from a priest to stand tall against racism and become an instrument of God.

Mother Theresa and Dr. Martin Luther King, we salute you. They ignited their passion in the moment. Additional stories of sustained leadership originate from the foundation of humble beginnings and blooming awareness, such as Steve Jobs, who found his biological parents when he was twenty-seven years old. Buddha reversed that trend and learned the meaning of life for sustained fulfilment by renouncing the royal kingdom and the wealth and seeing the poverty stricken population.



Leadership for innovation can also take the form of teamwork. For example, a leader like Armstrong became the first man on the moon, in partnership with the passionate and energetic John F. Kennedy who resolved to send the first man on the moon by the end of the decade and fulfilled that mission, despite not being an astronaut or an engineer himself. JFK uncovered all the resources he would need to accomplish this lofty goal and by building relationships across a variety of spheres while staying focused on the collective American Mission of staying ahead in the global space programs.

We cherish the legacy some leaders live and leave for a sustained period. Leaders like Gandhi, Bill Gates, Stephen King, Steve Jobs or Amitabh Bachchan open a significant chapter in leadership. That chapter ought to be entitled: *Mistakes unfold the loftiest potential*. There are examples of innovative products that were first announced as mistakes...They are Penicillin, Pacemakers, Slinky, Fireworks or Post-it-notes (aka, the glue that did not stick).

In many of these accomplishments, we remember only the larger than life people, forgetting the thousands of others who contributed to that success without mention. Leadership at any level is noteworthy and must be recognized even for the smallest yet significant role others may have played. History speaks of memorable monuments around the world, such as those that gained the status as the 'Seven manmade wonders of the world.' Few ask about the 'Question behind the Passion, Purpose, and Persistence' of those who played and continued to play a significant role in making all this possible.

IQ...EQ...SQ...PQ...CQ-Culture Quotient and Immersion:

Historically, the level of one's leadership or management capabilities has sometimes been measured by the level of one's IQ (Intelligence Quotient). It was only when Daniel Goleman established that regardless of the level of IQ, if the person has high level of EQ (Emotional Quotient or Emotional Intelligence), that person has a greater likelihood of being a leader for a sustained time span. Similarly, SQ (Spiritual Quotient) is another essential component for widespread leadership influence (Zohar & Marshall, 2000).

However, to engage innovative leadership at a global level, there are two other attributes required. These are PQ- Passion Quotient® and CQ (Culture Quotient). More than fifty years of research, surveys, interviews, and interactions and observational environmental approach have proven accurately that irrespective of the level of IQ or EQ or SQ, if the individual possesses a high level of PQ, their leadership focuses more on innovation and sustainability than otherwise. This approach invariably spreads globally one step at a time, one community at a time to influence and impact one purpose at a time.

From Argentina to Zimbabwe...People are people anywhere searching for Leadership

Whether looking for leaders in the slums of Sao Paolo or the riches of Beverly Hills, poverty- stricken Zimbabwe or luxurious London, people are searching for the same ignition and inspiration for life. Leadership is not a Zero-sum game. However, innovation and leadership falling into a complacency spiral can be a major distraction and obstacle to the spirit of innovation and globalization. The distraction is the population's cultural clash, or the need-based methodologies to obtain respective results. Bypassing community norms or bending rules to ignore ethical action and decision making takes away from leadership sustainability and stifles the ability to enhance it further.

A larger segment of the population may take the unethical approach to business, education, and living. They are satisfied with surviving even though it may come at the expense of ethics and integrity. Integrity is the greatest asset anyone can possess and accumulate over their entire life span. An age-old challenge that has been all pervading throughout human evolution and society is how individuals should define integrity, honesty, and ethics. Many are unwilling to wrestle with such important and weighty questions. Therefore, complacency injects in that promotes tolerance of the status quo that does not disrupt their mundane routine.

Everyone wants disruptive innovation, but no one wants to be disrupted. Therefore, few are eager or dare to take an innovative approach. This makes it a tough task to name a leader who personifies Integrity Centered Leadership for sustained innovation. Why are leaders not prepared to 'Think outside the box?' They are too comfortable in their comfort zone and not willing to venture outside their comfort zone. Those who will retain their Legacy for a sustained era, are the ones willing to become uncomfortable, to think outside the norm...out of the societal norm and the box.

Therefore, refuse to lower your essential integrity and ethical standards to accommodate those who refuse to raise their myopic vision and values.

Out of the Box and On Your Feet

Leaders who direct others even with an approved plan tend to have lesser impact and influence, as compared to those leaders who align with others, learn of their respective motivations, inspiration, goals, and ask pertinent, empowering, and timely questions. These creative leaders invariably obtain a more trusted following and lead others with a greater ease and sustained results. Leaders who serve others sustain a following. The foundation is grounded in the following attributes:

- |   |                                   |
|---|-----------------------------------|
| ○ Leadership became a lifestyle for them      | It is an investment in others     |
| ○ Leadership remained consistent in integrity | It stayed true & trustworthy      |
| ○ Caring, empathetic & empowering             | Ethical, Wholesome & Aligned      |
| ○ Dynamic, Altering & Effective               | Genuine, Influencing & Developing |
| ○ Engaging & Interactive                      | Servitude & Global                |

Having mutually beneficial aspirations, and aligning these with pragmatic skills, provide tools for the future and a strategic innovative roadmap for sustained leadership.

When a sixteen-year-old was invited by the Executives at World Bank and IMF to help them because of his confidence, energy, and steadfastness, that invitation brought a lifelong aspiration to help others anytime, anywhere, and in any way that he could. He didn't let that fire extinguish, and continues to help everyone anywhere in the world whether in their respective work or to help them live more fulfilled lives.

*Top 10 Tips for Innovation and Implementation*

- ❖ Be Passionate about your Goals
- ❖ Focus on one person and one community at a time
- ❖ Treat others as they wish to be treated
- ❖ What are your proactive long-term initiatives?

- ❖ Inspect what you expect
- ❖ Effective communication builds trust, and trust encourages effective communication
- ❖ Win & get to the top, but don't leave injured ones on the way there.
- ❖ The rule of 3 gives you 3 times the power & information
- ❖ Passion, Purpose, Planning, Persistence.... lead to sustained leadership
- ❖ Watch your thoughts, they shape your destiny...!!!

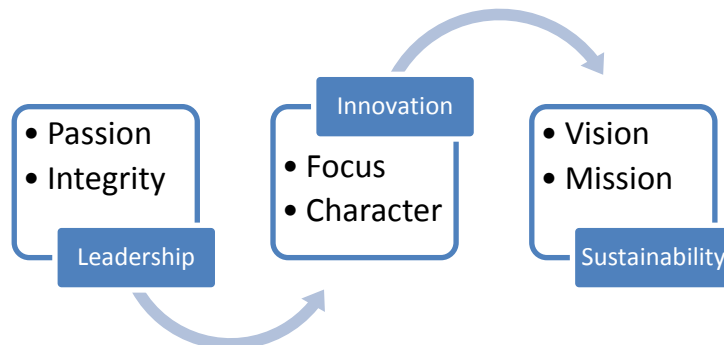
### Trust, Integrity, Empowerment

When a President of the most affluent nation greets and salutes janitorial staff and others with no hesitation at all, that gesture defines and personifies the level of humility. A President who leads many millions gains an unprecedented level of trust and empowerment because of such small actions that consistently speak volumes about his integrity.

We have come across leaders, or we have certainly heard of them, and how they treat their teammates. For example, humble leaders will ensure that even their chauffeurs have had their meals before the leader has his meals.

Building a foundation of trust and integrity are extraordinarily valuable assets. Investing in these values will never cause your downfall. Rather, it will always readily provide the greatest ROI and prove those who possess these values to be the wealthiest individuals in the world.

Smallest steps and minor details from this entry-level employee built a level of trust with the CFO that the employee was recognized by the CFO at an annual meeting as the most diligent and honest employee, simply because he would submit his railway tickets with the expense reports. That behavior continued to display later in life when the other CFO announced that she would question the CEO expense reports without receipts, but would not even doubt this employee's expense reports without receipts. What a compliment to honesty, trust, and integrity. Integrity is exemplified in our thoughts and actions when these are based on values rather than our personal gain.



### Mindset that could bring mind shift

Gandhi was the quintessential leader who pursued his passion and purpose with a truly innovative approach never before tried: non-violence. Gandhi lit the path that others could walk on for their respective ideals. Gandhi's famous words still echo in the historic archives along with those of Nelson Mandela and MLK:

- *I wanted to avoid violence, I want to avoid violence. Nonviolence is the first article of my faith. It is also the last article of my creed.* – Gandhi.
- *I have cherished the ideal of a democratic and free society in which all persons will live together in harmony and with equal opportunities. It is an ideal for which I hope to live for and to see realized. But, if it needs be, it is an ideal for which I am prepared to die.* -Nelson Mandela.
- *I have a dream.* -Martin Luther King.

The singular mindset of these and others have influenced and impacted global outcomes and a collective mind shift. Yes, shift happens. Why is it becoming drastically rare to find and uncover such entities who embrace an innovative approach toward their mission, passion, purpose? Reflections from around the world provide key evidence to answer

this question. Our societal approach has become short-term focused for personal gains at the higher levels. Most of today's leaders do not lead to serve, but rather employ WIIFT leadership- What's In It For Them?

The myopic perspective that leads to conflict in mundane religious bias., cultural inhibitions, growth limitations.

Integrity is such a rare asset and, yes, it is highly personal. Integrity is instilled in everyone based on the phenomenon that humans are products of the past. What this statement negates is that humans are the only ones who 'Have the freedom of choice.' Viktor Frankl provided evidence about how people behave differently under the same circumstances based on the external stimulus and the need of the moment. If the human mind is cultivated to exercise the 'Freedom of Choice,' the outcomes become responses and not reactions. These responses almost always turn out to be more rational, strategic, educated, and mutually beneficial. Such responses, therefore, invite others to also fly high towards innovation, have a clear long-term vision utilizing the rear-view mirror only to check that milestones that have been achieved. Such a process-driven approach rooted in mission facilitates overcoming any obstacles, as long as the yearning for learning has been established while letting past unnecessary knowledge go without regret. Answers to any integrity-related questions are limited in scope due to individual knowledge, experiences and memories. The curious mind, instead, unfolds limitless possibilities and potential of creating moments and turning them into magical moments. 'Anyone can survive and be good. Integrity Centered Leadership makes them rare, indispensable, and helps them thrive.'

Innovation ought to be on a continuum, and not just a random event. The spark of innovative passion and personal energy is beckoning those who are willing to take that opportunity up by asking pertinent, empowering, and felicitous questions. At the same time, they must relentlessly ensure an inclusive environment and interactions that foster cohesive collaboration and make sustainability and the related growth a clear competitive advantage. Leaders create sustainability when they focus on community, cohesiveness, and care by building camaraderie that empowers everyone they influence, impacting and developing others to become greater leaders with enhanced and elevated capacity for innovation.

## POLAR

When the organization does not meet or exceed results, managers at any level are quick to indicate that the teams or certain groups are not accountable and therefore the organization did not meet the expectations of internal and external stakeholders. This has become a universally accepted phenomenon. However, only a rare management style has taken a different and a unique approach.

When was the last time a manager sought to uncover the reasons for not meeting the goals by asking the pertinent questions? Why? Why not? Leadership at a sustained level with an inclusive approach tends to find the underlying reasons such as, (lack of) individual passion. These leaders know and have taken a detour from the normal road more traveled. They have dared to take the road less traveled, even though it may initially seem risky.

They know intrinsically that once they uncover the individual passion and present the finding to all individuals in the team, they will become aware of their respective Passion. Passion will invariably instill a fuller sense of Ownership. Ownership, in turn, will bring out the Leadership in everyone. If these three attributes, Passion, Ownership, Leadership, are already present, Accountability will not be left far behind. And if all four elements are combined, can Results be in isolation? POLAR, therefore, is an innovative approach to leadership coupled with Integrity and innovation, so that no organization or team will leave any stone unturned to not only achieve their goals, but to also to exceed them at all times.

The POLAR model lives and stands in parallel with the research on Mission. A fierce sense of Mission leads to making the impossible, possible. If there is a mission statement and full-fledged buy-in for this mission, there are no obstacles or objections that will ever stand in the way to meeting or exceeding the set milestones, measures, and goals, both short-term and long-term.

Aside from creating a model of POLAR methodology to generate Integrity Centered Leadership for Sustained Innovation, once the leaders have reached their peak, they must be even more conscious not to fall prey to complacency. They must plan for other peaks. Passion will always provide Purpose, whether the current one or the next larger one. Passion and Purpose together will always invite diligent Planning, and eventually dynamic Planning will demand the level of Persistence ensuring much coveted success, achieved only by a few.

This POLAR model of leadership is feasible only when the leaders have

Relationships

Integrity/Intuition/Innovation

Character	Experience/Expertise
Knowledge	Ability/Capability
Empathy/Empowerment	Care/Learning

*"Training is for the select few; Learning is for the eager few. Leadership is for the rare few, and the rare few are the*

*Passionate few."* -Ben Pandya. Be Passionate, be rare, be eager, be a student of life. You will soon be the envy of others, because of your Integrity, Leadership and Innovation.



*"No man and no destiny can be compared with any other man or any other destiny."* -Viktor Frankl.

The steps described above to develop intentional conscious and unparalleled leadership will lay the path for anyone who chooses to march towards their lofty destination.

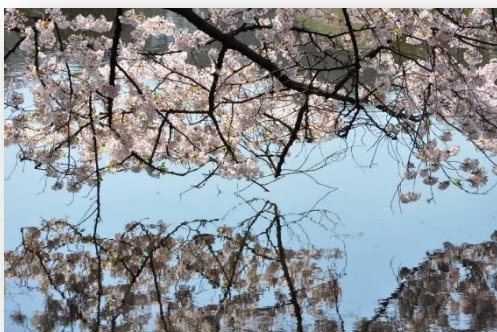
Mindfulness and awareness are the first steps to begin the journey. As the saying goes, if you don't know where you are headed, you're already there. Self-awareness is the spark that lights up the energized purposeful next steps. Self-awareness gives rise to empowerment, and hence leads to innovation in small steps. Innovation does not necessarily have to be always something drastic; it could be even a small tweak, a new approach, a novel methodology, a different process leading to more efficient and effective outcomes. If the status quo and the comfort zone are so acceptable, there is all likelihood that passion will be a dimly lit energy and will seek no action or decision to alter that condition.

If Integrity Centered Leadership was easy, the challenges of the world would not bring the daily news that upsets and unsettles. The most noble and sustained decision any leader will take will ultimately have its foundation in integrity. If that is true, why do people shun integrity and take decisions that are driven by greed, corruption, instant gratification, selfish gains, and money hoarding? Are these decisions driven by fear, environment, personal insecurities or some other unknown factors that play a part in those decisions? There may not be a definitive answer to this question, but Integrity Centered Leadership is found in a very meager percent of the population.

Integrity Centered Leadership is developed with a purposeful plan and the process of mindfulness and self-awareness, Passion and Integrity, Innovation and Empowerment, Focus and Determination that ultimately lead to Destiny and Legacy.

Quite simply put:

- Watch your thoughts, they become your words.
- Watch your words, they trigger your actions.
- Watch your actions, they form your habits.
- Watch your habits, they shape your character.
- Watch your character, it is your Destiny.



An even more simple way to utilize these ideas as a GPS or a lighthouse is: Watch your thoughts, they create your destiny.

"One of the highest peaks leaders ought to conquer in global sustainability is to elevate and enhance their awareness about how spirituality instills Integrity, Innovation, clarity of thoughts and empathetic empowerment to all in a borderless community and expands and eliminates the limits of the

scope of a manmade phenomenon of key popular doctrines.”

-Ben Pandya

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## Festivals as a medium of cultural preservation: a study on Ladakh festivals and how its spirituality contributing in sustaining its authenticity

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### Abstract:

*Festivals as a new wave of alternative tourism that not only provides both tangible and intangible “profitable activities” in the community but also contributes to sustainable development (Volal, Woo, Cetinel, and Uysal, 2012). Observing Ladakh, India as one of the most culturally unpolluted geographical areas in India, the study envisaging the impact of festivals and its spirituality on maintaining cultural sustainability in that region. The study is looking into the Naropa (Hemis) and Ladakh festivals.*

### Introduction

Festivals (2016) promoting a plethora of events ‘to preserve, develop and make popular the folklore of the different nations’, and companies offering tourists opportunity to engage in art and dance (<http://folklore-festivals.com>). In a relatively earlier study Kirshenblatt-Gimblett (1995) elucidates how destination culture and festivals open up the concept of immaterial heritage, where at festivals, ‘Performers are carriers, transmitters and bearers of traditions, terms which connote a passive medium, conduit, or vessel, without volition, intention or subjectivity’ (Kirshenblatt-Gimblett, 2004, p. 58). Similarly, Stoeltje (1992) finds that they deliver a medium for the articulation and expression of a collective appreciation of heritage and congenial rituals.

Festivals may offer an occasion to confront the concepts of escape, imaginative freedom and personality (Evrett, Parakoottathil, 2016). Inglis (2000) suggests that escape through self-improvement is a consequence of prolonged touristic engagement at extended cultural events which play a pivotal role compared to more brief and temporary spatial (physical) escapes, thus directly improving the overall mind, body and spirit. In Turner’s (1969) seminal writing on ritual and *communitas*, there is a useful theorization for festivals, where performance encourages activity in liminal spaces, fostering instances that traverse past and present, continuity and change. Through the lens of a costumed event that blurs the boundaries of the historic and folklore, and fact and fiction, we can explore what is happening in an event setting. Festival tourism may bring us closer to who we really are offering a vehicle to both traverse and occupy liminal spaces between our lives and our imagination (Evrett, Parakoottathil, 2016). Festivals and special events have increased in number and size, with various purposes including enhancing domestic culture and history, providing domestic recreation opportunities and contributing to the domestic economy by stimulating domestic tourism businesses (Getz, 2008; Long & Perdue, 1990).

Moreover, the desire to reemerge and desire to be in a “world which is up-side down” (Bakhtin, 1929) is intrinsic to certain ritualistic cultural and folk narratives. It enhances the growth of folklore touristic visitations and cultural event development (Järv, 2010; Kaasik, 2008).

Van der Veer (1996:269) mentions

*“Religion makes itself appear as a habit of the heart, the hard core of a community’s identity, as a thing that cannot change and is nonnegotiable”*

Human culture generally can be defined as socially conveyed and the communication and sharing of information in the forms of beliefs and values. Ritual is an anthropological favorite, and if defined as an organized and generally repetitive set of symbolic acts designed to communicate meaning, rituals are important and very common forms of expressive culture cross culturally (Bandyopadhyay, Morais, Chick, 2008). Thus spiritually based celebrations can sustain for long until and unless their deep heartened beliefs of their rituals and culture are diminished. This paper is showing some light to the other area constituting areas as well.

The study comprises of three cultural /spiritual festivals of Ladakh, which is a land where topography resembles to Tibet and there is a major disputed border area with India and China. Many festivals are taking place in this region based of Buddhist spirituality and other cultural tradition of Ladakhi people

**Naropa Festival** (2016): This Festival is called “Kumbh of Himalayas”, held once in 12 years, hosted by the Hemis Monastery. The 2016 Naropa festival was the fourth Naropa festival which even celebrates the 1000<sup>th</sup> anniversary of

the arrival of Buddhist yogi Naropa to the region. It had registered a massive arrival of guests from India and all around the world. A new Buddhist stupa was built prior to the festival and also the ceremonial unfurling of a huge silk tapestry of Tibet's patron saint Padmasambhava. The brocade, known in Tibetan as a *thangka*, was last exhibited in 2004.

**Ladakh Festival:** The Jammu and Kashmir Tourism Department along with the local communities organizes the seven-day Ladakh festival in Leh. The objective of the festival is to promote tourism and the rich culture of Leh-Ladakh. The festival is all about the traditional culture, music, dance, sports, and handicraft. The state of Jammu and Kashmir generates most of its revenue from tourism and therefore, this festival plays a major role in promoting tourism and providing a platform for cultural exchange. Usually the festival is held during September of every year.

Ladakh's cultural and heritage influence is mostly related to Tibet, which are observed in Ladakh festival, Cham dance, Thangka, the painting of silk or a cotton appliqué primarily denotes a Buddhist deity or a scene or a Mandala, a Polo Championship is held during the festival and polo is a very popular sports in Ladakh, and traditional Tibetan music, which comprised of chants in different languages and of sacred texts, those are the main cultural attractions of the festival.

## Methodology

This sub-study is taken from a broader study of the author on social anthropology of Tibetan settlements in India in line with tourism. Given the limited published work drawing on empirical data on tourist engagement with folklore or ritualistic festivals on tourism context, it was deemed that a case study employing qualitative methods was appropriate to generate deeper insights and explore new themes (Denzin & Lincoln, 2011; Yin, 2013). The study was designed around the five-day Naropa Festival and Ladakh festival combined held at Ladakh in Kashmir. The intention was to prompt reflection and capture the impressions of participants and the spirituality of the place, wider exploration of understanding and reflections were needed. In order to meet such objectives in-depth interviewing and observation techniques (Babbie, 2007; Sarantakos, 2005) are used in this study.

The main focus was on the tourists visiting Ladakh region especially for the festivals. The other observation technique was used for understanding the "aura" (Benjamin, 1969) of the place and people by observing their life using their mode of transport to travel and interacting with them. The in-depth interviews were oriented to visitors mainly from the western world. The questions were framed in such a way to know the authenticity outlooks from a cultural festival, how far the festivals satisfied their expectations, the influence of people in the region so forth.

'How does this festival and landscape match your own expectations and images of the landscape and setting for a Buddhist Festival?', 'What is your take on the region and people, in comparisons with other parts of India?' 'How do you feel when you saw festival and participated in it?'

Interviews offer an effective method of generating detailed information from active participants and not just observers (Lofland, Snow, Anderson, & Lofland, 2006). A range of questions allowed participants to respond with descriptive answers that could encompass several dimensions of the event and its various aspects; exposing the interview participant's feelings and observations of their experiences (Patton, 2002). As Babbie (2007) has espoused, an interview allows for a more viable, iterative and continuous data generation vehicle.

A convenience sampling strategy was adopted which involved approaching people around the site to see if they were willing to be interviewed. This approach was pragmatic and sought to ensure an appropriate research population was interviewed in a purposive way to ensure a mix of respondents was secured (i.e. gender, age, costume, nationality). The interviews were conducted during performance breaks to ensure a wide range of participants were included. Most interviews lasted between half an hour and an hour in duration (see Table 1 for list of interviewees and characteristics). This sample is a small selection through a process of data saturation. The concept of data saturation was introduced by Glaser and Strauss (1967) and describes when no new additional data are found during collection that further develops a conceptual category, (see also Guest, Bunce, & Johnson, 2006). Participants were given pseudonyms and these are noted in brackets where quotes are used in the findings.

*Table.1 List of interviewees at the festivals*

Ref. No	Pseudonym	Age	M/F	Nationality
1	Clemen Desmir	35	M	France
2	Tess	28	F	Canada

3	Taxi Driver	46	M	India, Ladakh
4	Lekshmi	37	F	India, Ladakh
5	Gessert (German cyclist)	40	F	Germany
6	Katrina	64	F	Australia
7	Adriana (with her sister)	42	F	Poland

The interviews were taken down with the consent of each participant, the interview was conducted in a conflicted area that no one wanted to be get recorded.

A dual methodological approach was designed involving the in-depth interviews with participant observation. Specific attention was placed on recording the mannerisms and interactions of visitors with a view to understanding their levels of engagement at the festival. Observations were noted down and photos and videos were taken as a way of preserving the atmosphere and feeling of the place after the event (Silverman, 2013). This Study has taken 7 in-depth interviews from tourists and used focus study of the people of the region. The themes emerged were represented with the help of Nvivo software.

### Finding and Conclusion

Based on the observations, the festival was found to be a vibrant, authentic, colorful and aesthetically rich space. Numerous themes emerged by bringing together these recollections and the coded data from interviews. However, three recurrent themes emerged which generated more coding than any other area, these were (i) based on the recurrent coding the word “jule”, the theme registered as the “jule” impact and saying “No” to nothing, (ii) camaraderie, used by the personal observation and focus study on the locals and festival attendees and (iii) Authenticity, symbols and aesthetics of experiences, this theme mainly emerged by the repeated coded words like archery, beauty, dressings, originality.

### The “Jule” impact and saying “No” to nothing

The “jule” is the very versatile word used to greet the each other in Ladakh, stands for hello, thank you, good bye. The Ladakhis (people of Ladakh) greet you with this word with a warm smile and the visitors to that region also reciprocating with it has been observed during many times during the travel in the region. Many interview participants repeatedly mentioned it as well.

*I came for a few days but ended up staying here for 20 days,*

Clemen Desmir, a tourist from France was really enthusiastic when he was mentioning about the people of Ladakh and he continues

*I was travelling from south to here by road, I would say the Ladakhis are best welcoming people I have seen in India*

The festival premises were filled with “jule”, and another observation was the openness of the religious people and monasteries. There were no apparent restrictions to any place in the Hemis monastery near to where the Naropa festival was held. Taking photos and access of deities’ temples, stupas, monks and other sacred areas. Furthermore, the festival authorities included popular culture celebrations along with the festival feeding the needs of new generation. The festival showcased very famous mainstream artists of India (News18, 2016). Acceptation of popular culture to the religious festivals may draw criticism and when it was mentioned to a Monk he responded as

*We are Buddhist and we say no to anything, we have to accept the needs of our youth as well. They normally have to travel very far like Delhi or such places to see these starts but now they are getting it here in this hills right in front of their eyes*



Figure 1: Naropa festival, the unveiling of Tangha. Photo by author

### Camaraderie

The researcher travelled through the transportation used by the festival goers. The feeling of camaraderie was observed while travelling on a bus to festival. The whole village united as a family and the sharing of eatables, helping each other while bus passing the difficult terrains and the endless talking with each other.

Tess, from Canada also loves the people in Ladakh and from one of the people she met was just came for Naropa and got to know about the festival. Tess says;

*The people had lot of exclamations to convey as they all were very happy. A great energy has been felt in that place*

The other feeling of camaraderie observed while travelling through the shared taxis, through the journey from tishkey monastery to festival place met few lady travelers. Lekshmi shared some information about the place and they were in a cordial chat with the fellow passengers about food and cloths as far as the researcher understood from the gestures. Watching the author's parched lips they asked the driver to stop and brought some local lip balms.

It was surprising to see a lady from Australia who was attending the Naropa festival for the third time as it is commenced once in 12 years. She had a take on people contradicting with Tibet

*People who make the difference,*

Contemplating on Tibet and its spiritual practices Katrina reflects;

*The Ladakhis' vibrance probably the main reason that I never had any intention or motivation to go to Tibet*

When the interviewer stressed to ask her why she is not interested in going to Tibet, she reciprocated in a different way,

*As everyone says it's not the repressive Chinese rule or difficulty to get into that place or the freedom of monks to perform rituals. I cannot draw a clear picture about the reason; maybe the Tibetans in India can offer more to the Buddhist tradition because of the openness and their vibrancy, hence the real reason is unknown*

### Authenticity, symbols and ascetics of experiences

*There is not much change in the place and the people, I prefer Ladakh because I get authentic and pure from this landscape and people. This is only one place similar to Tibet as Tibet is too prone to modernity, thanks to their authorities.*

Adriana, the Polish lady who came here to introduce Ladakh and spirituality to her sister and she observes the authenticity of the place in consonance with her previous visits. She shared some insight on symbols in another way and also the ethnic traditions or borders.

One of the key points generated was from the conversation with Tess, who herself is in a sociological field of study and shared some keen observations during the entire interview. She liked cultural festival as a medium to get to know about the local culture very well even the subtle variations from village to village

*I think this festival showcases the regional variations of culture as the participants are from different villages showing their talents based on culture. As a visitor I get more access to culture rather than waiting for the programs held in their community centers or visiting each village and finding out their culture. In a cultural festival you get to know a lot. The festival's location really matters and if there is a strong spiritual base it can reflect in their culture as well.*

She adds about the importance of festival location its aesthetics and spiritual connection. Another interesting take was from a German cyclist on symbols in Ladakh, Turtuk Villages particularly. She finds the symbolism of the culture and social anthropology not only on their attire or their faces it but in the architecture as well.

*If you talk about them the symbol I saw I can't forget in my whole life as there is a mosque or prayer hall with Jewish, Muslim and Buddhist prayer spaces. For me that is the symbol considering the current world happenings*

She was mentioning the spiritual inclusiveness and secularism of the area through the mosque where Jewish, Muslim and Buddhist religious practitioners are using. She continues;

*The culture is distinguished with the dressing style as the 'Balti' wearing typical Muslim attires and Ladakhis differ (Balti is the Islamic culture seen in Turtuk Village). In Ladakh you can see a lot of Tibetan type of geography as well.*



Figure 3. Ladakhi costumes in Naropa festival. Photo by author

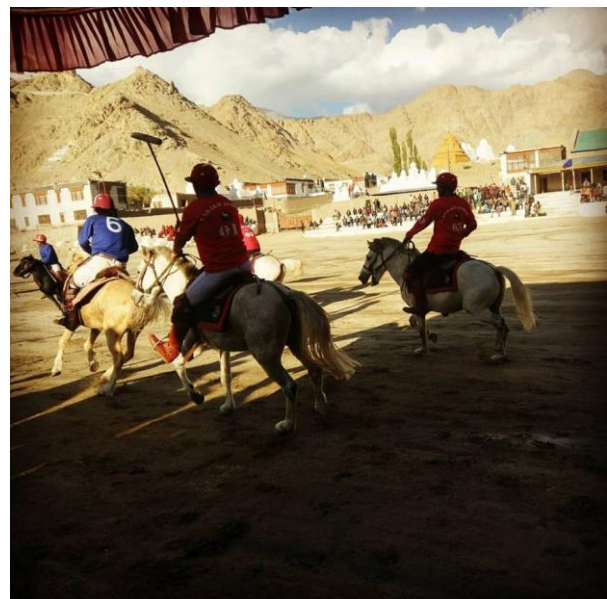


Figure 4. Polo game in Leh as a part of Ladakh festival. Photo by author

Polo and archery is considered as the most popular sporting events in Ladakhi region which has its roots in Tibet. Horse race and arrow shooting are popular sports on the vast expanse of grassland in Tibet, which have a history of more than 500 years in the regular festival ceremony, starting from Gyantse in back Tibetan area (Tibetguru, 2017).

Polo was the sporting attraction during the Ladakh festival as the uniqueness of the place and people gives it a different experience. Ladakh is a festival favorite location for Buddhist celebrations as many festivals are held in this

region including the “Kalachakra”, which was held in 2014. Most of the festivals sporting events are inevitable inclusion hinting the physical recreation of the place and its celebration.

## Conclusion

To conclude, drawing from the first theme about the people and their hospitality, the word “jule” itself has turned into a destination image. Destination image has been defined by World Tourism Organization 1979, (p.5) as *“the ideal conceptions held individually or collectively about a destination.”* Moreover, Echtner and Richie (1991) for instance, define the term as *“impressions of a place”* or the *“perceptions of an area”*.

In addition to, Wang (1999) has highlighted how intense sociality in the company of others enhanced a sense of inter-personal security through sharing and communicating the same experience as others. Here the emotions of a community are shared. The participation in ritualistic celebrations was one of the key observational points of understanding camaraderie. Adhikary (2009) was adopting the Sadharanikaran Model of Communication, which is used to explain the systematic representation of communication process where parties interact in a system for the attainment of commonness or oneness. Thus, the issues which have a direct control on their lives, get stronger in their thought process since they are living that moment.

Religious underpinning of the festivals can be helpful for the festivals to sustain their tradition and culture. Rituals are important and very common forms of expressive culture cross culturally (Bandyopadhyay, Morais, Chick, 2008).

In line with Getz (1991, 1997) one considers festivals as a new wave of alternative tourism that not only provide both tangible and intangible “profitable activities” in the community, but also contribute to sustainable development. Thus, the festivals with intangible linkage of ritualistic base, which underpin the identity or habit of the heart, can possibly sustain for generations without aesthetical and cultural pollution to the people and place

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## Training, Skill Development and Employment Opportunities in Tourism and Travel Sector

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### Abstract

*The Travel, Tourism and Hospitality Industry is very much dynamic and burgeoning work sphere with booming scope for the use of creativity and orientation on a global level. More than in any other country, the Indian Tourism Sector is a potentially large employment generator. T and T Sector in India includes employees such as tour operators, travel agents, transport, adventure and domestic tour operators in travel trade, besides those employed in hospitality sector. Despite the fact that Indian Tourism Sector is targeted to grow at an annual rate of 12% (during 2011-2016), training and skill development infrastructure are not adequately available.*

*The current scenario indicates a short fall of 0.5 million employees in hospitality sector, (expected to rise by 1.1 million by 2022). The fore casted requirement for restaurants is around 2.2 million, for hotels, 4.1 million and for travel trade segment 0.3 million employees and an incremental requirement of 2.7 million employees for the tourism sector. MOT of India reports that only 50% of employees in the key functional domains are well-trained and 35% for restaurants etc.*

*Formally trained managerial staff accounts for only 16% of the entire hospitality sector and 21% of the total Travel and Trade Sector workforce. Expected to be the second largest employer in the world, India's T and T sector will be employing around 40.037 million persons by 2019. Sensing the importance of these sectors, the Government of India has heralded positive initiatives to churn out well-trained personnel to meet the ever growing demands of Travel, Tourism and Hospitality Sector.*

**Keywords:** *Hospitality Industry - The Accommodation Sector, Global Level - The International Level, Infrastructure - The Set of Systems within an Organization, Skill Development - Developing the required ability to perform a task, MOT - Ministry of Tourism, T and T Sector - Travel and Tourism Sector*

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

The Indian tourism and hospitality industry has emerged as one of the key drivers of growth among the services sector in India. The second-largest sub-segment of the services sector comprising trade, repair services, hotels and restaurants contributed nearly US\$ 295.7 billion or 19.2 per cent to the Gross Domestic Product (GDP) in 2015-16, while growing at 8.9 per cent year-on-year. Tourism in India has significant potential considering the rich cultural and historical heritage, variety in ecology, terrains and places of natural beauty spread across the country.

Tourism is also a potentially large employment generator besides being a significant source of foreign exchange for the country. The industry is expected to generate 13.45 million jobs across sub-segments such as Restaurants (10.49 million jobs), Hotels (2.3 million jobs) and Travel Agents/Tour Operators (0.66 million). The Ministry of Tourism plans to help the industry meet the increasing demand of skilled and trained manpower by providing hospitality education to students as well as certifying and upgrading skills of existing service providers. India has moved up 13 positions to 52nd rank from 65th in Tourism & Travel competitive index@. Tourism Australia expects Indian tourist's arrivals in Australia to increase 12 per cent year-on-year to reach 245,000 visitors during FY 2015-16, thus making India the eighth largest source market for tourism in Australia.

### Market Size

India's rising middle class with increasing disposable incomes has continued to support the growth of domestic and outbound tourism. Total outbound trips increased by 8.7 per cent to 19.9 million in 2015. Inbound tourist volume grew at a Compound Annual Growth Rate (CAGR) of 6.8 per cent during 2010-15.

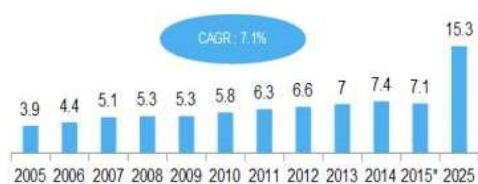


Figure 7 Foreign Tourist Arrival in India (Mill.)(1)

India are expected to double by 2016 due to the increasing penetration of the internet and smart phones. Travel and tourism sector in India includes employees such as inbound tour operators, travel agents, tourist transport operators, adventure tour operators and domestic tour operators in the travel trade segment and those employed in hotels and restaurants in various functions of front office, F&B and housekeeping among others.

While the tourism sector in India is targeted to grow at an annual rate of 12% during 2011-2016, adequate training and skill development infrastructure and hence availability of trained manpower has not kept pace with growth. This has led to an existing as well as forecasted shortfall of trained manpower in various segments of tourism sector in India.

The hospitality sector alone witnessed a shortfall of 0.5 million employees during 2011-2012 which is expected to rise to 0.8 million by 2017 and 1.1 million by 2022 as per the target growth levels.

There exists a forecasted requirement of around 2.8 million employees for restaurants, 4.1 million employees for hotels and 0.3 million employees for the travel trade segment by 2022 resulting in an incremental requirement of a total of 2.7 million employees for the tourism sector as compared to 2012 employment figures. An assessment of the training infrastructure estimates a total of 337 training institutes in the Hospitality sector and 101 travel and tour institutes offering courses related to ticketing and tourism as in March 2010 which appears to be extremely low. A study by the Ministry of Tourism indicates that only 50% of the employees in the key functional domains of hotels are fully trained with this statistics reducing to 35% for restaurants and other eating outlets.

This necessitates the immediate need for formal training especially for the hospitality sector employees. In addition, proper selection of hotel management students, increased focus on grooming and communication skills, on the job training, courses in foreign languages and standardization and monitoring of curricula in private institutions may be required. Several skill development areas have been identified for employees engaged in the tourism sector in India. Formally trained managerial staff accounts for only 16% of the total hospitality sector and 21% of the total travel and trade sector workforce.

Efforts are thus required for enhancing the skill sets of non-managerial staff in the sector. With 20 % of the travel and trade sector employees comprised of casual workers, development of basic skill set is important. These include health and personal hygiene, cleanliness, basic service techniques, cooking techniques, garbage disposal, etiquette and basic manners, basic nutrition values, basic tourism awareness, first aid, client handling and behavioral skills etc. (1).

The number of Foreign Tourist Arrivals (FTAs) has grown at a CAGR of 3.7 per cent to 5.29 lakh year-on-year in May 2016. Foreign Exchange Earnings (FEEs) during the month of May 2016 grew at a rate of 8.2 per cent year-on-year to Rs 10,285 crore (US\$ 1.52 billion). The number of tourists arriving on e-Tourist Visa

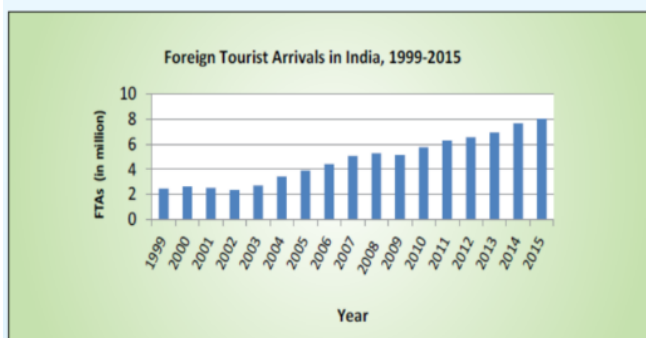
during June 2016 reached a total of 36,982 tourists registering a year-on-year growth of 137.7 per cent. Online hotel bookings in

Year	FTAs in India # (in million)	Percentage (%) change over the previous year
1999	2.48	5.2
2000	2.65	6.7
2001	2.54	-4.2
2002	2.38	-6.0
2003	2.73	14.3
2004	3.46	26.8
2005	3.92	13.3
2006	4.45	13.5
2007	5.08	14.3
2008	5.28	4.0
2009	5.17	-2.2
2010	5.78	11.8
2011	6.28	8.6
2012	6.58	4.3
2013	6.97	5.9
2014	7.68	10.2
2015	8.03	4.5
2016 (P) (Jan-June)	4.19	8.9@

(P): Provisional, @ Growth rate over Jan-June, 2015, #: Excludes Nationals of the country residing abroad.

Source: (i) Bureau of Immigration, Govt. of India, for 1999-2015

(ii) Ministry of Tourism, Govt. of India, for Jan-June, 2016



## Why Travel Tourism and Hospitality

The travel, tourism and hospitality industry today is a very dynamic and booming work sphere with great scope for the use of creativity, imagination and orientation on a global level. The tourism industry in India is one of the largest and most profitable industries in the country and contributes substantially to the foreign exchange earned. Available

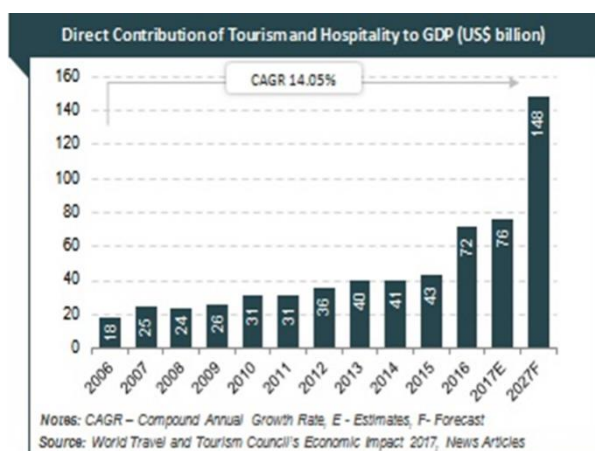


Figure 8 Contribution of Tourism und Hospitality to GDP

The travel and tourism industry holds tremendous potential for India's economy. It can provide impetus to other industries and create millions of new jobs. The vast travel and tourism industry includes Government Tourism Departments, Immigration and

statistics indicate that Foreign Tourist Arrivals to India have been constantly increasing since 1997 onwards to 2013, and they spent approximately around 18.44 Billion dollars (2), thus making India one of the global and most visited tourist destinations. The increase in tourism in India has created many jobs in a variety of related sectors, both directly and indirectly. An approximate 20 million people now work in India's tourism industry. Indian Tourism is thriving, owing to a huge surge in both business and leisure travel by foreign and domestic tourists and is expected to generate approximately US\$ 275.5 billion by 2018.

A report published by the Travel and Tourism Council (WTTC) says that by the year 2020 tourism in India could add another Rs. 8, 50,000 crores to the GDP. India has still not realized its full potential from tourism.

Table 2 WTTC Forecasts

WTTC forecasts of Indian Tourism Sector to grow at Annual Average growth rate of 7% over the next ten years:	
•	Tourism in India accounts for 9.6 % of the GDP and is the 3rd largest foreign exchange earner for the country
•	The tourism and hospitality sector's direct contribution to GDP in 2016, was US\$ 71.53 billion
•	During 2006–17E, direct contribution of tourism and hospitality to GDP is expected to register a CAGR of 14.05 %
•	The direct contribution of travel and tourism to GDP is expected to reach US\$ 147.96 billion by 2027

Year	International Tourist Arrivals (in million)		FTAs in India* (in million)		Percentage (%) share and rank of India in World		Percentage (%) share and rank of India in Asia and the Pacific	
	World	Asia and the Pacific			% Share	Rank	% Share	Rank
1999	633.8	97.6	2.48	0.39	46 <sup>th</sup>	2.54	-	-
2000	683.3	109.3	2.65	0.39	50 <sup>th</sup>	2.42	11 <sup>th</sup>	11 <sup>th</sup>
2001	683.4	114.5	2.54	0.37	51 <sup>st</sup>	2.22	12 <sup>th</sup>	12 <sup>th</sup>
2002	703.2	123.4	2.38	0.34	54 <sup>th</sup>	1.93	12 <sup>th</sup>	12 <sup>th</sup>
2003	691.0	111.9	2.73	0.39	51 <sup>st</sup>	2.44	11 <sup>th</sup>	11 <sup>th</sup>
2004	762.0	143.4	3.46	0.45	44 <sup>th</sup>	2.41	11 <sup>th</sup>	11 <sup>th</sup>
2005	803.4	154.6	3.92	0.49	43 <sup>rd</sup>	2.53	11 <sup>th</sup>	11 <sup>th</sup>
2006	846.0	166.0	4.45	0.53	44 <sup>th</sup>	2.68	11 <sup>th</sup>	11 <sup>th</sup>
2007	894.0	182.0	5.08	0.57	41 <sup>st</sup>	2.79	11 <sup>th</sup>	11 <sup>th</sup>
2008	917.0	184.1	5.28	0.58	41 <sup>st</sup>	2.87	11 <sup>th</sup>	11 <sup>th</sup>
2009	883.0	181.1	5.17	0.59	41 <sup>st</sup>	2.85	11 <sup>th</sup>	11 <sup>th</sup>
2010	948.0	204.9	5.78	0.61	42 <sup>nd</sup>	2.82	11 <sup>th</sup>	11 <sup>th</sup>
2011	994.0	218.5	6.31	0.63	38 <sup>th</sup>	2.89	9 <sup>th</sup>	9 <sup>th</sup>
2012	1039.0	233.6	6.58	0.63	41 <sup>st</sup>	2.82	11 <sup>th</sup>	11 <sup>th</sup>
2013	1087.0	249.7	6.97	0.64	41 <sup>st</sup>	2.79	11 <sup>th</sup>	11 <sup>th</sup>
2014	1134.0	264.3	7.68	0.68	41 <sup>st</sup>	2.91	12 <sup>th</sup>	12 <sup>th</sup>
2015 <sup>(i)</sup>	1184.0	278.6	8.03	0.68	40 <sup>th</sup>	2.88	11 <sup>th</sup>	11 <sup>th</sup>

F: Provisional, \* Excludes Nationals of the country residing abroad

Source: (i) UNWTO Tourism Market Trends 2007 Edition, for the years upto 2005.

(ii) UNWTO Barometer June 2010 for 2006 and January 2011 for 2007

(iii) UNWTO Tourism Highlights 2011 Edition for 2008 and 2012 Edition for 2009.

(iv) UNWTO Barometer April 2014 for 2010, 2011, 2012

(v) UNWTO Barometer August 2015 for 2013

(vi) UNWTO Barometer May 2016 for 2014 & 2015

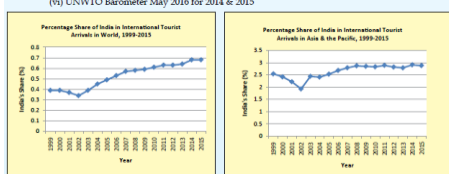


Table 3 Share of India in International Tourist Arrivals in World and Asia & the Pacific Region 1999-2015 (4)

Customs Services, Travel Agencies, Airlines, Tour Operators, Hotels etc. and many associated service industries such as Airline Catering or Laundry Services, Guides, Interpreters, Tourism Promotion and Sales etc.

India is a vast country with diverse cultures and traditions. India offers a great attraction for those who crave to know about the splendor and magnificence of one of the oldest civilizations of the world and its scenic beauty. With the increasing globalization and opening up of the Indian economy to the world, travel and tourism in India is getting a great impetus. Technology, coupled with the growth of tourism globally, has had a large impact on transforming these jobs significantly.

This forecasts a bright future for all those who choose to make a career in the fields of Travel & Tourism and Hospitality (1). It is noticed that "Tourism has now become a significant industry in India, contributing around 5.9 per cent of the Gross Domestic Product (GDP) and providing employment to about 41.8 million people" (3).

Year	International Tourism Receipts (in US \$ billion)		FEEs in India (in US \$ million)	Percentage (%) share and rank of India in World		Percentage (%) share and rank of India in Asia and the Pacific	
	World	Asia and the Pacific		% Share	Rank	% Share	Rank
1999	458.2	79.1	3009	0.66	35 <sup>th</sup>	3.80	-
2000	475.3	85.3	3460	0.73	36 <sup>th</sup>	4.06	10 <sup>th</sup>
2001	463.8	88.1	3198	0.69	36 <sup>th</sup>	3.63	12 <sup>th</sup>
2002	481.9	96.5	3103	0.64	37 <sup>th</sup>	3.22	13 <sup>th</sup>
2003	529.3	93.7	4463	0.84	37 <sup>th</sup>	4.76	9 <sup>th</sup>
2004	633.2	124.1	6170	0.97	26 <sup>th</sup>	4.97	8 <sup>th</sup>
2005	679.6	135.0	7493	1.10	22 <sup>nd</sup>	5.55	7 <sup>th</sup>
2006	744.0	156.9	8634	1.16	22 <sup>nd</sup>	5.50	7 <sup>th</sup>
2007	857.0	187.0	10729	1.25	22 <sup>nd</sup>	5.74	6 <sup>th</sup>
2008	939.0	208.6	11832	1.26	22 <sup>nd</sup>	5.67	6 <sup>th</sup>
2009	853.0	204.2	11136	1.31	20 <sup>th</sup>	5.45	7 <sup>th</sup>
2010	931.0	255.3	14193	1.52	17 <sup>th</sup>	5.56	7 <sup>th</sup>
2011	1042.0	289.4	16564	1.59	18 <sup>th</sup>	5.72	8 <sup>th</sup>
2012	1117.0	329.4	17737	1.59	16 <sup>th</sup>	5.38	7 <sup>th</sup>
2013	1198.0	360.2	18445	1.54	16 <sup>th</sup>	5.12	8 <sup>th</sup>
2014	1295.0	420.1	20236	1.56	15 <sup>th</sup>	4.82	7 <sup>th</sup>
2015(P)	1232.0	418.9	21071	1.71	14 <sup>th</sup>	5.03	7 <sup>th</sup>

P : Provisional

Source :- (i) UNWTO Tourism Market Trends 2007 Edition, for the years upto 2005

(ii) UNWTO Barometer June 2009 for 2006 & 2007

(iii) UNWTO Tourism Highlights 2011 Edition for 2008 and 2012 Edition for 2009.

(iv) UNWTO Barometer April 2014 for 2010, 2011 & 2012

(v) UNWTO Barometer August 2015 for 2013

(vi) UNWTO Barometer May 2016 for 2014 & 2015

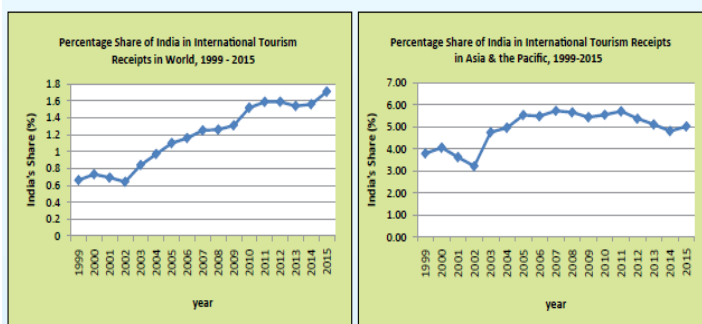


Table 4Share of India in International Tourist Receipts in World and Asia & the Pacific region 1999-2015

## Government Initiatives

The Indian government has realized the country's potential in the tourism industry and has taken several steps to make India a global tourism hub. Some of the major initiatives taken by the Government of India to give a boost to the tourism and hospitality sector of India are as follows:

- The Ministry of Tourism plans to revise its guidelines to exempt home stays from service tax or commercial levies and make their licensing process online, which is expected to encourage people to offer home stays to tourists.
- ITC Ltd has renewed its 40-year partnership with Starwood Hotels & Resorts to operate 11 luxury hotels in India, and three more luxury hotels in Hyderabad, Ahmedabad and Kolkata which will be completed in the next four years, thus increasing the total number of hotels to 15.
- The e-Tourist Visa (e-TV) scheme has been extended to 37 more countries thereby taking the total count of countries under the scheme to 150 countries.
- The Union Cabinet has approved the signing of Memorandum of Understanding between the Ministry of Tourism of India and the Ministry of Trade Industry and Tourism of Colombia in order to boost cooperation in the field of tourism between the two countries.

Tourism Satellite Accounting research, released by WTTC and Oxford Economics in March 2009, says: "The demand for travel and tourism in India is expected to grow by 8.2 per cent between 2010 and 2019 and will place India at the third position in the world". India's travel and tourism sector is expected to be the second largest employer in the world, employing 40,037,000 persons by 2019." (3). Another study reiterates: "According to World Travel & Tourism Council (WTTC), the growth in hospitality industry is pegged at 15% every year with 1,50,000 hotel rooms over the next couple of years, two-thirds of which would be rooms meant for budget hotels."

As for Tourism, Travel and Tourism competitiveness report 2009 by the World Economic Forum, India was ranked 11th in Asia Pacific region and 62<sup>nd</sup> overall, moving up three places on the list of world's attractive destinations" (3). Available statistics for the year 2013 – 2014 indicates that there have been positive changes, with 1087 million tourist arrivals and annual growth rate is pegged at 5%, where as in terms of international Tourism receipts the annual growth rate is 7.5% (1). Although research in India in both sectors is sadly limited, we cannot fail to deduce that tourism and hospitality combined are poised for an unlimited growth and hospitality industry contributes tremendously for the growth of tourism, without which, survival of the latter could be in jeopardy.

- The Central Government has given its approval for signing of a Memorandum of Understanding (MoU) between India and Cambodia for cooperation in the field of tourism with a view to promote bilateral tourism between the two countries.
- Ministry of Tourism has sanctioned Rs 844.96 crore (US\$ 125.26 million) to States and Union Territories for developing tourism destinations and circuits during FY 2014-15, which includes projects relating to Product/Infrastructure Development for Destinations and Circuits (PIDDC), Human Resource Development (HRD), Fairs and Festivals & Rural Tourism.
- The Heritage City Development and Augmentation Yojana (HRIDAY) action plans for eight mission cities including Varanasi, Mathura, Ajmer, Dwaraka, Badami, Vellankini, Warangal and Amaravati that have been approved by HRIDAY National Empowered Committee for a total cost of Rs 431 crore (US\$ 63.89 million).
- Government of India plans to cover 150 countries under e-visa scheme by the end of the year besides opening an airport in the NCR region in order to ease the pressure on Delhi airport.
- Under 'Project Mausam' the Government of India has proposed to establish cross cultural linkages and to revive historic maritime cultural and economic ties with 39 Indian Ocean countries.

### Road Ahead

India's travel and tourism industry has huge growth potential. The medical tourism market in India is projected to reach US\$ 3.9 billion in size having grown at a CAGR of 27 per cent over the last three years. Also, inflow of medical tourists is expected to cross 320 million by 2015 compared with 85 million in 2012. The tourism industry is also looking forward to the expansion of E-visa scheme which is expected to double the tourist inflow to India. Rating agency ICRA Ltd estimates the revenue growth of Indian hotel industry strengthening to 9-11 per cent in 2015-16. India is projected to be the fastest growing nation in the wellness tourism sector in the next five years, clocking over 20 per cent gains annually through 2017.

This paper hopes to further promote these informations and chalk out potential strengths in this region. Yet, Indian scene of tourism and hospitality is slightly different from the rest of the world. India is the country that gave the status of divinity to hospitality since the beginning of Indian civilization and this is one of the rules that defied regions, classes and religions. All religions, irrespective of their contradicting thoughts and rules, accepted hospitality as one of the highest principles of life. India has come a long way as one of the most hospitable regions, where even a sworn enemy could be treated well, as long as he came as a guest. Indian culture and hospitality cannot be separated and it has been so since time immemorial. In ancient India, not providing food and shelter to a needy was considered as a sin from which, the denying individual could never resurface.

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Source : <https://www.ibef.org/industry/indian-tourism-and-hospitality-industry-analysis-presentation>

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## **A study on the effectiveness of ASAP as a skill development scheme for tourism in Kerala**

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### **Abstract**

*The growth of tourism education had been driven not only by the demand from students and the industry, but also supported by public sector funding which recognised that a professional, well trained work force delivers a competitive advantage and productivity. Additional Skill Acquisition Programme (ASAP) is one of the premier skill development initiatives of the country which is designed for students to acquire skills along with their regular studies in order to increase their employability. ASAP provides certificate programmes for higher secondary and degree students in Kerala in various fields. The study was carried out to analyse the effectiveness of ASAP as a skill development programme towards the fulfilment of requirement of tourism in Kerala. The paper starts with introduction. The first section of this paper reviews related literature, the second section discusses the methodology used and this is followed by objectives, hypothesis. This paper also presents the results of the study and discusses the findings in relation to the aim of the study.*

**Keywords:** tourism, education, skill, development, ASAP, Kerala

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### **Introduction**

The effectiveness of every organized programme such as the skills acquisition programme is largely dependent on the perception of the target recipients of the programme. Solicited and unsolicited participation of members of the target community for every Skills Acquisition Programme can be garnered when the target group has a positive perception of the programme. Skills acquisition programmes are primarily aimed at reducing the unemployment rate among youths (Uranta et.al., 2017). Skills acquisition is the process of facilitating the development of an inexperienced person into an expert. It is the ability to bring about some end result with maximum outlay of energy or time (Albert, 2013). Uranta defines that skills acquisition training programme is an adult education programme which is designed to impart various skills on the participants, and meet immediate needs such as jobs, self-reliance and curb restiveness among youths (Uranta, 2016).

ASAP is one of the premier skill development initiatives of the country which is designed for students to acquire skills along with their regular studies in order to increase their employability. This paper examines the relevance of ASAP as a platform for students to acquire knowledge and interest about tourism as a career choice. The study was conducted among 140 students who have enrolled for two certificate programmes i.e., Travel Consultant and Meeting, Conference and Event Planner. The students who are selected for the study were in the final stages of completion of course. Self-made questionnaire is used as the tool for data collection. It covers the perception of students on the effectiveness of syllabus, teaching and training methods. The data was analysed using non parametric test of chi square test and the results indicate significant positive impact with respect to course structure and syllabus of the certificate programme. The analysis also indicated that the participation in the course helped the students to realise about the scope of tourism as a career option.

### **Review of Literature**

#### **Tourism Education in Higher Secondary Schools**

According to WTTC (2017), Travel & Tourism is a key sector for economic development and job creation throughout the world. In 2016, Travel & Tourism directly contributed US\$2.3 trillion and 109 million jobs worldwide and indirectly it contributed US\$7.6 trillion to the global economy and 292 million jobs. This is expected to rise by 1.9% in 2017 to 297,896,000 jobs and rise by 2.5% pa to 381,700,000 jobs in 2027 (11.1% of total). According to the study conducted by Ministry of Tourism as given below

Table 1 Expected Total Employees in March 2022

Function Domain	Travel Agency	Tour Operator	Adventure Tour Operator	Tourist Transport Operator
Administration/ Operations	6962	5187	441	5488
Ticketing	10872	9970	---	8122
Foreign Exchange	1491	3161	---	219
Tours	9635	13779	441	7024
Sales&Marketing	3526	4782	295	1317
Accounts	4854	3890	147	12951
Facilitation	1781	1378	---	1317
Total	39122	42149	1325	36437

(Source: <http://tourism.gov.in/sites/default/files/Other/MPS%20Final%20Report%20Jan%202012.pdf>)

According to the study conducted by Ministry of Tourism, the details of the calculation for obtaining the demand – supply gap, as per the normal trend, are given in Table 2.

Table 2 Requirement Supply Gap in Tourism Sector

Segment	2011- 2012 (In Lakhs)	2016-2017	2021-22
<b>Total Employment</b>	42.44	54.69	76.06
<b>Total Annual Demand</b>	5.65	7.10	9.56
<b>Supply from Govt Institutes</b>	0.34	0.62	0.78
<b>Supply from private institutes</b>	0.38	0.42	0.50
<b>Total Supply</b>	0.72	1.04	1.28
<b>Demand – Supply Gap</b>	5.13	6.35	8.64

(Source: <http://tourism.gov.in/sites/default/files/Other/MPS%20Final%20Report%20Jan%202012.pdf>)

From Table 1, it is clear that the demand for skilled manpower is very high and supply is very low. Here we can understand that the Travel & Tourism industry is facing a crisis due to the lack of qualified and trained professionals and the country's economic growth depends on this industry. Travel and Tourism course in Vocational Higher Secondary School (VHSE) is a blessing to Kerala-God's Own Country to provide manpower to the Tourism sector. The course encourages learners to develop practical and technical skills relevant to the industry, enabling them to deal with a range of complex situations and problems with confidence. The course is also designed to help to meet the need for skilled and knowledgeable individuals with right attitudes and aptitudes in the rapidly diversifying industry. In Kerala, presently there are 389 vocational higher secondary schools. Out of this, 27 VHSEs are offering travel and tourism course including 10 schools are under government and remaining 17 schools are aided. Every year 675 students opt for Travel and Tourism course at VHSE ([www.scert.kerala.gov.in](http://www.scert.kerala.gov.in)). ASAP has been conceived as an effective remedy for this situation. The whole idea is that the students can be given skill training in various crucial sectors including tourism in addition to their regular academic programme. For the convenience of students, these skill trainings will be conducted before and after school/college schedule as well as during holidays/vacations. Thus the successful completion of their regular academic programs they will also get additional skill certifications.

This will ensure them job opportunities immediately on completion of each stage of their academic program. Thereafter they can go for full time job or can opt part-time job and continue higher studies. Travel consultant and Meeting, Conference and Event Planer are the two major courses in Tourism and Hospitality Sector under ASAP. ASAP is providing Travel Consultant courses in twentyfive centres and Meeting, Conference and Event Planer course is in thirteen centres in Kerala. This is beneficial to many students from government and aided schools/colleges. According to the statistics 2016-2017, there are 635 and 401 students from higher secondary/ Colleges selected Travel consultant course and Meeting, Conference and Event Planner respectively.

### Additional Skill Acquisition Programme (ASAP)

Higher Education, General Education and Local Self Government Departments of Kerala State Government in India have jointly launched an ASAP as part of State Skill Development Programme to strengthen the employability of students passing out of Higher Secondary Schools (+2) as well as Arts and Science Colleges in the state. It aims at creating employment opportunities for the unemployed youth, enhancement of skill sets of the labour force, emphasizing industry linkage and enhancing employability of students by introducing additional skill acquisition programmes in their career. ASAP primarily caters to the sectors that have a substantial skill gap which include Tourism and Hospitality sector. Since inception in 2012, ASAP has trained over one lakh students in various skill sectors. Intended for Higher Secondary and Arts & Science College students, ASAP could ensure its presence in 1052 institutions across Kerala. Communicative English and basics of IT, which are fused with skill curriculum in the ASAP course design make students more appropriate industry-ready personnel ([www.asapkerala.gov.in](http://www.asapkerala.gov.in))

The ASAP Program will have three levels. The first level to be implemented for the first year students of Undergraduate courses, which is compulsory for all opting for the Program, will be of 300 to 350 hrs duration. The ASAP level 1 programme, which commenced during November 2012, is a combination of three courses, namely, Communication Skills in English, Basic IT and an Elective Domain Specific Skill Course. The second level will be of 300-500 hrs duration. It will be an intermediate module in the selected area of specialisation and will be implemented in the second year. The third level will be of 300-500 hrs duration and will be an advanced module in the selected area of specialisation and will be implemented in the third year. The second and third levels are optional. Students who finish all 3 levels in line with the requirements of the Universities in Kerala will be able to earn a dual degree. This will significantly improve their chances of getting a good job after graduation. The three-type certification model is given below (Source: [http://asapkerala.gov.in/old/media/downloads/SSDP\\_PPR.pdf](http://asapkerala.gov.in/old/media/downloads/SSDP_PPR.pdf) accessed on October 2017).



In the University Integrated Model, students will get the opportunity to attend three modules of ASAP, one in each year, with vacation apprenticeship in the first and second years and a course end apprenticeship at the end of the third year. For Undergraduate students, two kinds of ASAP courses, viz. Independent and University Integrated, will be instituted. For Higher Secondary students, a dual skill model will be instituted. In the Independent Model, students will get the opportunity to attend two modules of ASAP in the selected skill areas, with examination and certification in each year and also with apprenticeship and final certification at the end of the year.

### Curriculum of Tourism Certificate Course

The final curriculum of ASAP is designed, finalised and evolved with the active involvement and coordination of several stakeholders such as the ASAP Design Unit; State Core Committee consisting of National experts, experts from University, experts from Industry & Government Nominees; and Academic Council of Universities. The course design is in alignment with the National Vocational Education Qualification Framework (NVEQF)(SSD project, 2012). The syllabus is structured in such a way that students attain required skills after completing tourism course from ASAP. Travel consultant and Meeting, Conference and Event Planer are the two major courses in Tourism and Hospitality Sector Under ASAP. Duration of both courses is 300 hr, courses are offering 150 hrs for institution based training which include both theory and practical sections and 150 hrs for industry based training (internship). The travel consultant is responsible for preparing and organising holiday tours packages for inbound, outbound and domestic travel. It has 71 hrs for theory section and 79 hours for practical sections. There will be 4 Internal Assessments and the External Assessment will be conducted by Assessment Agency (assigned by Sector Skill Council). The Certificate will be awarded by Tourism and Hospitality Skill Council. There are eleven Module/Unit in their syllabus and they have a fixed time for each section to complete. Students can acquire knowledge about following relevant topics like types and forms of tourism, different tourism destinations of India, national and international tourism organizations, planning travel itinerary, arranging tour packages, communication at work place etc. On completion of the course, this knowledge and practical exposure will help them to guide a tourist, to prepare tour packages, and they shall be proficient on appreciating customer requirements, identifying travel destination options for customers, preparing appropriate itinerary, coordinating with different segment wings, monitoring tour activities and ensuring customer satisfaction.

The Meeting, Conference and Event Planer course shall equip the successful trainees with requisite skills and knowledge to plan, coordinate and manage events and meetings. It has 66 hrs for theory section and 84 hrs for practical section. There are nine Module/Unit in their syllabus and they have a fixed format and timing for the completion of each section. On successful completion of the course, students will be capable with interacting with customers to understand customer requirements, planning and coordinating with different departments and service providers for arrangements, monitoring the key activities and ensuring customer satisfaction. ASAP Tourism programs are designed to support and to increase confidence in working with information and ideas - their own and those of others and help students to be innovative and equipped for challenges in the field of tourism.

### Research Methodology

The study was carried out in Kerala. For the purpose of this study, ASAP centres were randomly selected which are providing travel consultant and Meeting, Conference and Event planner courses throughout Kerala. Convenience sampling method was used to select the ASAP centres in the areas and a structured questionnaire was administered to 140 respondents in the study area from the total of 1036.

### Method of Data Collection and Analysis

Data collection was done with the aid of a well-structured Questionnaire, Interview and reviews of relevant Literature were used. Collected data and information are combined, analyzed and interpreted using necessary statistical and mathematical tools. Descriptive statistics were mainly frequency count, percentages, mean and appropriate measure of central tendencies, and tables. Chi square test was conducted using SPSS and the results were tabulated in Table.

### Objectives

- To study the effectiveness of ASAP as a skill development program in Tourism courses
- To study the impact of course in student's perception about tourism sector.
- To examine the curriculum of Tourism certificate courses offered under ASAP
- To offer suggestions based on findings of the study.

### Hypothesis of the study

- Ho: ASAP motivates to consider tourism as a higher option.
- Ho: The Course helped to realise the potential of tourism as a career.

- Ho: The Course helped to gain the knowledge regarding tourism
- Ho: Students are interested to pursue tourism course
- Ho: Practical training is more important than theoretical inputs
- Ho: Students are satisfied with the Practicals and education in tourism course.
- Ho: There is a well-structured Course to achieve learning outcomes
- Ho: There is a need for field visit to assess the career opportunity.
- Ho: There is a need for more practical training modules in the syllabus
- Ho: There is a lack of awareness about the Scope of tourism as a career
- Ho: Tourism sector has job opportunities in India as well as abroad
- Ho: The method of teaching encouraged participation
- Ho: The method of assessment is reasonable and timely

## Findings

Table 3. Gender of respondents

Variables		Frequency of Students	Percent
	Male	32	22.9
	Female	108	77.1
	Total	140	100.0

Table 3 shows that majority (77.15%) of students are female while 22.9% are males. This implies that more female participated/enrolled in ASAP than their male counterpart for tourism courses.

Table 4. Age group of respondents

Variables		Frequency of Students	Percent
	18 years or below	123	87.9
	18-22 years	17	12.1
	Total	140	100.0

Table 4 shows that a higher percentage (87.9%) of students was in the age group of 18 years or below while 12.1% of the students were 18-22 years.

Table 5. Education of respondents

Variables		Frequency of Students	Percent
	Plus two	121	86.4
	Degree	19	13.6
	Total	140	100.0

Table 5 shows that the majority (86.4) of responders are plus two based students while 13.6% students are from Degree. This implies that ASAP course is more benefited to plus two students than Degree.

Table 6. Tourism Courses of respondents

Variables	Frequency of Students	Percent
Travel Consultant	71	50.7
Meeting, Conference and Event Planer	69	49.3
Total	140	100.0

The table shows that 50.7% of students selected travel consultant course while 49.3% of students are interested in Meeting, Conference and Event Planer course.

Table 7. Respondents (N=140) categorized each issue on a five point Likert's scale from 1 (strongly disagree) to 5 (strongly agree)

	Questionnaire Statement	Mean	Std. Deviation
1	ASAP motivates to consider tourism as a higher option.	2.95	.249
2	The Course helped to realise the potential of tourism as a career.	2.91	.337
3	The Course helped to gain the knowledge regarding tourism	2.94	.274
4	The course increased my interest in the subject	2.84	.426
5	Practical training is more important than theoretical inputs.	2.87	.376
6	Practicals within the course gives me more exposure towards the industry.	2.82	.453
7	The Course was well structured to achieve the learning outcomes (there was a good balance of lectures, Assesments, practical etc.)	2.84	.484
8	The field visit gave the students an opportunity to assess the career options.	2.79	.569
9	Prefer to include more practical training modules in the syllabus	2.78	.510
10	In general, students are not aware about the scope of tourism as a career	2.84	.426
11	Tourism sector has job opportunities in India as well as abroad	2.95	.277
12	The learning and teaching methods of Tourism Course encouraged participation.	2.86	.458
13	The method of assessment are reasonable and timely	2.78	.537

Questionnaire Statement	Hypothesis for testing how well population proportions fits the population proportions specified in the null hypothesis	X <sup>2</sup> Calculated	Decision
ASAP motivates to consider tourism as a higher option.	Ho: D= -45.7, N=-41.7, A=87.3 H <sub>1</sub> : Ho is false	245.329 <sup>a</sup> , Df =2 AS=.000	Accept Null Hypothesis that 87.3% agreed
The Course helped to realise the potential of tourism as a career.	Ho: D=-44.7, N=-37.7, A=82.3 H <sub>1</sub> : Ho is false	218.414 <sup>a</sup> , Df =2 AS=.000	Accept Null Hypothesis that 82.3% agreed
The Course helped to gain the knowledge	Ho: D=-45.7, N=-39.7, A=85.3	234.443 <sup>a</sup> , Df=2,	Accept Null Hypothesis

regarding tourism	H <sub>1</sub> : Ho is false	AS=.000	that 85.3% agreed
The course increased my interest in the subject	Ho: D=-43.7, N=-29.7, A=73.3 H <sub>1</sub> : Ho is false	174.957 <sup>a</sup> , Df =2 AS= .000	Accept Null Hypothesis that 73.3% agreed
Practical training is more important than theoretical inputs.	Ho: D=-44.7, N=-32.7, A=77.3 H <sub>1</sub> : Ho is false	193.771 <sup>a</sup> , Df =2 AS=.000	Accept Null Hypothesis that 77.3% agreed
Practicals within the course gives me more exposure towards the industry.	Ho: D=-42.7, N=-29.7, A=72.3 H <sub>1</sub> : Ho is false	169.986 <sup>a</sup> , Df=2 AS=.000	Accept Null Hypothesis that 72.3% agreed
The Course was well structured to achieve the learning outcomes	Ho: D=-39.7, N=-38.7, A=78.3 H <sub>1</sub> : Ho is false	197.243 <sup>a</sup> , Df =2 AS =.000	Accept Null Hypothesis that 78.3% agreed
The field visit gave the students an opportunity to assess the career options.	Ho: D=-35.7, N=-39.7, A=75.3 H <sub>1</sub> : Ho is false	182.586 <sup>a</sup> , Df=2 AS= .000	Accept Null Hypothesis that 75.3% agreed
Prefer to include more practical training modules in the syllabus	Ho: D=-40.7, N=-27.7, A=68.3 H <sub>1</sub> : Ho is false	151.900 <sup>a</sup> , Df =2 AS =.000	Accept Null Hypothesis that 68.3% agreed
In general, students are not aware about the scope of tourism as a career	Ho: D=-43.7, N=-29.7, A=73.3 H <sub>1</sub> : Ho is false	174.957 <sup>a</sup> , Df =2 AS = .000	Accept Null Hypothesis that 73.3% agreed
Tourism sector has job opportunities in India as well as abroad	Ho: D= -44.7, N= -43.7, A=88.3 H <sub>1</sub> : Ho is false	250.814 <sup>a</sup> , Df = 2 AS = .000	Accept Null Hypothesis that 88.3% agreed
The learning and teaching methods of Tourism Course encouraged participation.	Ho: D= -40.7, N= -35.7, A=76.3 H <sub>1</sub> : Ho is false	187.557 <sup>a</sup> , Df =2 AS =.000	Accept Null Hypothesis that 76.3% agreed
The method of assessment are reasonable and timely	Ho: D= -38.7, N= -31.7, A=70.3 H <sub>1</sub> : Ho is false	159.529 <sup>a</sup> , Df =2 AS = .000	Accept Null Hypothesis that 70.3% agreed

Legend: D=Disagree; N= Neutral; A= Agree

\* Five point scale is clubbed to a three point scale for improving frequency beyond 5; p<0.05

Table 5. Results of the Hypothesis Testing

Hypothesis	Result
ASAP motivates to consider tourism as a higher option.	87.3 % agreed
The Course helped to realise the potential of tourism as a career.	82.3% agreed
The Course helped to gain the knowledge regarding tourism	85.3% agreed
Students are interested to pursue tourism course	73.3% agreed
Practical training is more important than theoretical inputs	77.3% agreed
Students are satisfied with the Practicals and education in tourism course.	72.3% agreed
There is a well structured Course to achieve learning outcomes.	78.3% agreed
There is a need for field visit to assess the career opportunity	75.3% agreed

There is a need for more practical training modules in the syllabus	68.3% agreed
There is a lack of awareness about the Scope of tourism as a career	73.3% agreed
Tourism sector has job opportunities in India as well as abroad	88.3% agreed
The method of teaching encouraged participation	76.3% agreed
The method of assessment are reasonable and timely	70.3% agreed

It is well understood, as 87.3% of students agreed that ASAP motivates the students to consider tourism as a higher option and 82.3% of students agreed that The ASAP course helped to realise the potential of tourism as a career and 85.3% agreed that this course helped to gain the knowledge regarding tourism. 73.3% agreed that the course increased their interest in the subject. 77.3% of respondents agreed that practical training is more important than theoretical inputs and 72.3% agreed that Practicals within the course gives them more exposure towards the industry. 78.3% agreed that the ASAP Courses were well-structured to achieve the learning outcomes and 75.3% of students have agreed that the field visit gave them an opportunity to assess the career options. 68.3% agreed that there is a need to include more practical training modules in the syllabus. 73.3% of students agreed that they were not aware about the scope of tourism as a career. 88.3% agreed that Tourism sector has job opportunities in India as well as abroad. 76.3% agreed that the learning and teaching methods of Tourism Course encouraged participation and 70.3% agreed that the methods of assessment are reasonable and timely.

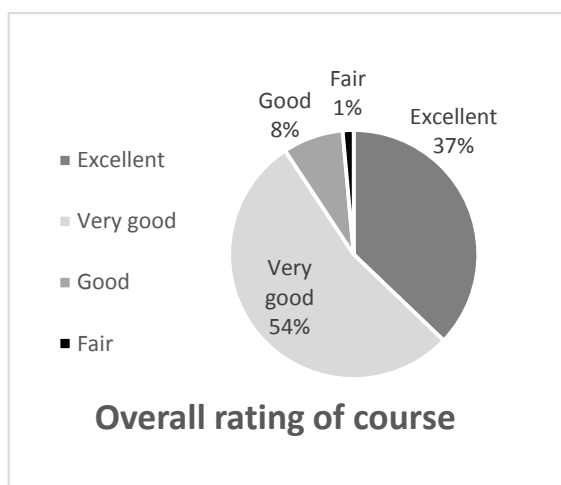
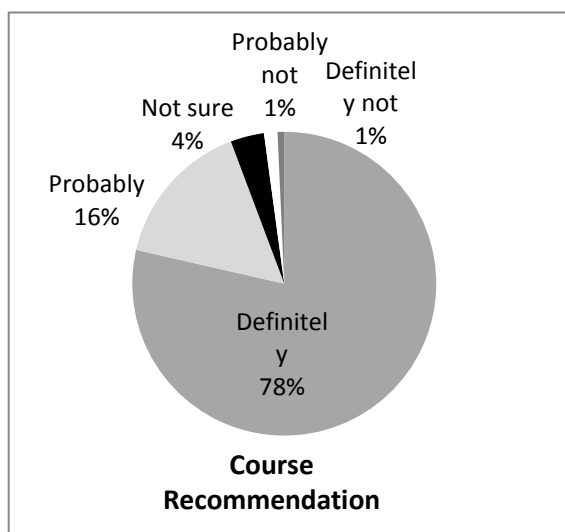


Figure 1. Overall rating of the course

The figure indicates that 54% of students have rated the overall course is very good. 37% of students said that the course is excellent. 8% of the students have a good opinion on the overall course. 1% does have the opinion that the course is fair.



Among 140 respondents 78% of respondents said, that they would definitely recommend this course to other students. 16% of the respondents answered to the question, that they probably would reco-mmend this to the other students. 4% of the respondents are not sure about this. 1% of the respondents have said, that they would not definitely recommend this course to others.

Figure 2. Would you recommend this course to other students?

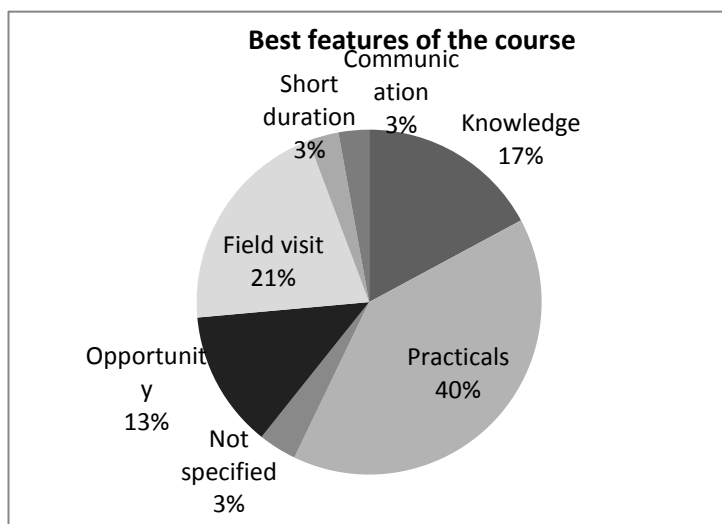


Figure 3. Best Features of the course

As per the above Figure 40% of the students say that the best feature of the course is the practicals. 21% of the students said that the best feature of this course is field visit. 17% of the students said that this course provides very informative and knowledgeable information on tourism. 13% of students viewed that the best feature of this course is opportunity, as the Tourism course provides various career opportunities. 3% of students not specified any answers for this. 3% of students said, that this course helped to increase their communicative skill. 3% of students answered that the best features of this course is short duration. This is a short period course.

### Suggestions

The study reflects the following suggestions based on respondent experience

- The course should provide more practical work and field visit to complement theory.
- The Government should provide more awareness classes regarding the opportunities of ASAP and Tourism courses. It will encourage more participation.
- The Public and the private sector should combine together and ensure Additional Skills Acquisition Programme is effective. This could be done by effective administration, direction, monitoring and using modern equipment for learning.
- Opening an enough number of ASAP centres for providing tourism courses will benefit the students immensely.
- Creating awareness among higher secondary students regarding the benefit of tourism and opportunities through programs on education.

### Conclusion

It is needed to equip youths and students with employment skills and knowledge to meet the increasing industry demands. Tourism is one of the growing industry. The study evaluated the effectiveness of ASAP as a skill development scheme for tourism industry in Kerala. The tourism courses offered by the ASAP in Kerala is a right step in making students understand about the rich cultural heritage of our country and to mould them as professionals in the field of travel and tourism. The students has strongly agreed that ASAP motivates them to achieve their best by providing specialised skill programmes in line with industry demands and also encourage them to consider tourism as a higher option. The study found that additional skill development programme has positive effect on the fulfilment of requirement of tourism in Kerala.

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## A Study of Socio-Economic Condition of Tourism Entrepreneurship in Sivagangai District

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### Abstract:

Tourism is travel for recreational, leisure, family, business and other purpose, usually of a limited duration. Tourism is commonly associated with trans-national travel, but may also refer to organization defines tourists as people "travelling to and staying in place outside their usual environment for not more than one consecutive year for leisure, business and other purposes." Tourism has become a popular global leisure activity. Tourism can be domestic or international, tourism has both incoming and outgoing implications on a country's balance payments. Today, tourism is a major source of income for many countries and affects the country of the source and host countries, in some cases it is of vital importance. Globally and domestically, tourism is an important economic activity today, as it directly generates service, product, foreign currency, employment and investment. In countries where tourism has become a flourishing service industry, it has a far – reaching economic and social impact on national development. International tourism also has complex linkage to other industries and to government development strategies and plans, which means that it affects the structure and diversity of other economic activities at national and regional levels. The business generated by tourists is crucial to many hotels, restaurants, travel services and entertainment facilities, but it does not account for all business of this sector.

**Keywords:** tourism, Sivagangai, socio economic condition, entrepreneurship.

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

The Sivagangai district is an administrative district of Tamilnadu in southern India. The city of Sivaganga is the district headquarters. Sivagangai lies between 09 deg 31' -10 deg 25' N latitude and 78 deg 08' -79 deg 01' E longitude. The terrain is mostly plain with a maximum elevation of 170 MSL and a minimum of 20MSL. Pamba, Manimuthar, Kottakariyar and other rivers flow through this district and they are seasonal in nature. The district is bounded on the north by Tiruchy and Pudukkottai district.

The concept of new tourism includes ideas and practices related to responsible, green, alternative and sustainable tourism. Globalization has transmitted these ideas and practices worldwide, thus making the tourism industry more diversified and putting pressure on developing countries to create targeted, niche markets. Competition has become stronger and is based increasingly on diversification, market segmentation and diagonal integration, which involves the merge and conglomeration of related business activities. An important source of tourism revenue is now based on identifying, developing and promoting niche markets. Market segmentation is the form of ecotourism, cultural tourism, cruise tourism and adventure tourism becoming more evident and successful.

## HISTORY OF SIVAGANGAI DISTRICT:

The Sivagangai district was a part of the old Ramanathapuram District. The old Ramanathapuram District played a dominant role in the history of South India. In the early centuries, the Ramanathapuram district formed part of Pandian Kingdom till the end of the 15<sup>th</sup> century. After the fall of Nayak, two of the Palayakarars viz Sethupathy of Ramanathapuram and Raja of Sivaganga became prominent rulers of this part. Towards the middle of the 18<sup>th</sup> century the Europeans, the French and the British entered into this part. The Sethupathy of Ramanathapuram lost this personal freedom and the British took control of the administration of Ramanathapuram in 1795. It was converted into a Zamindari in 1803 and Mangaleswari Natchiar became the first Zamindar. During this period, the Raja of Sivagangai also revolted against the British. The famous Marudhu Brothers, Periya Marudhu and China Marudhu assisted the Raja of Sivagangai in the revolts. After the death of the Raja of Sivagangai (Muthu Vaduganadhar), the queen passed on the sovereignty to the Marudhu Brothers, who ruled Sivagangai peacefully and devoted on payment of regular revenue to the East India Company in 1801. The Marudhu brothers were known for their efficient administration. They worked for the welfare of the people and made Sivagangai seem as a fertile land. They constructed many temples, ooranis and tanks.

The Marudhu Brothers of Sivaganga revolted against the British in collaboration with Kattabomman of Panchalankurichi. However, the two brothers were captured by the British and were hanged in Kalayarkovil on 1.10.1801. The British installed Gowri Vallabh Periya Uday as Zamindar of Sivagangai. Finally in 1975, a British collector was appointed to administer the territory of Ramanathapuram district by carving out portions from Madurai and Tirunelveli district and Madurai as the Head Quarters of this District till 1985, when it was trifurcated. Perhaps, the Old Ramanathapuram district was the biggest district in Tamilnadu. The Pasumpon Muthuramalingam district came into existence 1985; in consequence of the trifurcation of the composite Ramanathapuram district. In September 1997, the Government changed the name to Sivaganga district.

## Tourism in Chettinad Region

Chettinad is the homeland of the Nattukottai Chettiars (Nagarathar), a prosperous banking and business community. It is well known for its Chettinad Cuisine which is very hot and spicy. In fact, Chettinad has one of the South Indian Cuisines with large number of specialty restaurants. A typical Meal with have meat, a large number of courses, and is served on banana leaf. Also, the old Chettiar mansions are rich in heritage, art and architecture. For example, Kanadukathan has one beautiful palatial house. The affluence of chettiars is shown off in their palatial houses. Carved teak wood doors and frames, marble floors, granite pillars, Belgian mirrors and Italian tiles are the norm.

## Other Tourism Potentials

Vettangudi Bird sanctuary, which is located near to Trirupatthur attracts a number of migratory birds such as White Os, Asian Open Bill Stork and Night Heron as well as some endangered species including the Painted Stork, Gray Heron, Darter Little Cormorant, Little Egret, Intermediate Egret, Cattle Egret, Common Real, Spotbill, Pintall and Flamingos. The best season to visit is from November to February. Anjanamaar panch Shaheedh Waliyullah, Raxiyullah ta'ala anhu dargan, pallichadai, Ariyakudi in the South Trirupathi is a 400 year old temple just 3 km away from Karaikudi. Pillayarpaty Vinayagar Temple, Pillayarpaty around 15 km away from Karaikudi. Kovilur Temple, Karaikudi, Kandathevi Temple, Idaikattur Church, Kollangudi Vettudaiyar Kaaliyamma Temple, Kaleeswarar Temple, Nagarasivan Temple, Kundragudi Temple, Kollakalaiaamma temple and Kallal Somasundaram soundara Nayagi Temple and its its Masimaham festival mostly in the month of February every year. Panchabhutheswaram, known Vedhiyanendal Vilakku, is 5 km away from Manamadurai. It is on the way to Paramakudi via Elaiyangudi. The route in which Lord Rama went to Sri Lanka to comfort Ravana. More importantly, this place known for its hard cut-rock (granite) temple dedicated to Shri Maha Panchamukha Prathyangira Devi. It also Houses the big deity of the god. There are two or more sannidhies for Lakshmi Ganapathi and Sornagarshna Bhairavar. It has come in a total area of about 5.5 acres (22,000 m<sup>2</sup>). Soon within the temple premises, ten more sannadhis are going to come for Dasamaha Vidya, Madapuram Badrakali Amman temple Madapuram, Thayamangalam Muthu Mariyamman Temple, Thirumalai Thirumal Kovil. In Sivagangai District Tourist at Operator provide best service in cat renbal. The travel has grown manifold with a fleet of more than 200 Vehicles in various categories, tourist guides are also available at a reasonable cost. Sivagangai also provides outstanding shopping opportunities to the visitors, who can get a variety of handicrafts. Curio items, works of art and handmade mattresses, designed and sculpted statues of gods and goddesses are sold in front of the Shrines and Marketplaces.

### Tourism Development

Tourism is in many ways an activity that is emblematic of the 21st century in India, the planning commission's sub group on "Targeting ten million employment opportunities over the tenth plan period" has earmarked tourism as one of the major sector. This is primarily because of the ability to maximize the productivity of India's natural, human, cultural and technical recourse. Reinforcing the importance of tourism in India, vision 2020 states the triple contribution of income generation, employment opportunities and foreign exchange earnings in this sector

It envisages:

- Total number of persons employed in the tourism sector will be 50 million persons, i.e one in every eight employed.
- Contribution of tourism to gross domestic product (GDP) is expected to be 7 per cent by the year 2020, as against the present 4 per cent.
- Number of international visitors in India is expected to be 40 million by 2020 as against 2.2 million at present.

Tourism as an industry is yet to achieve a higher profile in the public consciousness of the Sivagangai district. Destinations and tourism-related businesses around the district need a profound shift in consumer confidences and travel behavior. Keeping in view the existing opportunities, the district administration has to take necessary steps to reap the emerging benefits of tourism.

### The Endogenous Tourism Project Promotion through Entrepreneurship

The Sivaganga district administration is instrumental for the entrepreneurship in industry supported by the Government of India and United Nations Development Programme (UNDP). This district is acclaimed as one of the two districts in Tamilnadu and 31 districts in India which got this unique opportunity. Comprises five specific objectives, which are as follows;

- Capacity building at local level
- Experimenting and evolving local specific model of community tourism
- Build strong community private partnership
- Supporting promising and innovative rural tourism initiatives
- Providing valuable inputs to national & state tourism policies

Endogenous tourism project entrepreneurs focus on regeneration of art forms of Chettinadu that spreads in Sakkotai, Kallal and Thirupathur blocks of Sivaganga district. The various art forms include wood carving, stone carving, brass metal works, chettinadu cuisine, kandangi saree weaving, silver, gold and diamond jewelry, egg plastering and Kottan making. The capacity of the artisans in the above art forms will be enhanced through promoting community managed sustainable institutions like community collages for tourism development, tourism marketing centers and tourism information centers

People institutions comprise eight hundred artisans of various trades. These permanent institutions will impart need-based skill building to the community mainly to promote tourism linked livelihood activities. For instance, this skill building activity in turn with the demand on the development of tourism will generate following employment opportunities.

- Tourist guides [ Temple, rural tourism, mansions, art forms]
- Tour operators
- Local transport operators
- Home stay operators [direct, indirect]
- Event management operators
- Traditional food experts
- Artisans & craftsmen [New, young & master craftsmen]
- Traditional crafts shop operators [direct & indirect]

- Folk artisans

*Age-wise classification:*

AGE	TRANSPORT	FOOD & ACCOMMODATION	HANDI CRAFTS	TOTAL
Less than 25	16	08	10	34
26-35	48	20	30	98
36-45	26	26	40	92
46 & above	10	46	20	76
Total	100	100	100	300

Age is an important factor, which has a bearing on the active participation in innovative activities and the risk-bearing ability. Usually, the young people have more risk-bearing capability and better exposure to the economy. The young persons are generally more energetic, change prone, progressive and innovative than the aged. The age of the members are classified as less than 25 years, 26-35 years, 36-45 years and 46 and above. Table 1 presents the distribution of the sample Tourism entrepreneur respondents according to their age.

It has been observed that out of 100 respondents engaged in transport, 16 of them fall in the age group of less than 25 years, about of them fall in the age group of 26-35 years, 26 of them and 10 of them fall in the age group of 36-45 years and 46 and above respectively.

It has been observed that out of 100 respondents engaged in Food & Accommodation, 08 % of them fall in the age group of less than 25 years, 20 % of them fall in the age group of 26-35 years, 26 % of them and 46 % of them fall in the age group of 36-45 years and 46 and above respectively.

Further, it has been observed that out of 100 respondents engaged in Handicrafts, 10 % of them fall in the age group of less than 25 years, 30 % of them fall in the age group of 26-35 years, 40 % of them and 20 % of them fall in the age group of 36-45 years and 46 and above respectively.

### Education

EDUCATION	TRANSPORT	FOOD & ACCOMMODATION	HANDI CRAFTS	TOTAL
Illiterate	06 %	15 %	25 %	46
High School & Higher Secondary School	70 %	50 %	35 %	155
U.G	18 %	25 %	30 %	73
P.G	06 %	10 %	10 %	26
Total	100 %	100 %	100 %	300

Education brings better awareness about the environment and the facilities in the total area. The level of education motivates the psychological upliftment of persons and widens social awareness. It also plays an important role in understanding the financial and technical aspects of the area. In the present study, the level of education is classified into illiterate, up to high school, higher secondary school, graduate and Post-graduate. Table 3 shows the educational status of the respondents in various sectors.

According to table in the Transport sector out of 100 respondents 6 % are illiterate, 70 % come under high school level and higher secondary education, 18 % of the respondents are undergraduate, and 06 % of the respondents are post-graduate level. As far as Food and accommodation is concerned, out of 100 respondents 15 % are illiterate, 50 % come under high school level and higher secondary level, 25 % are graduates and 10 % are post-graduates.

Further, it is inferred from the handicrafts that out of 110 respondents 25 % are illiterate, 35 % come under high school level and higher secondary, 30 % of them are graduates and 10 % of them are found with post graduation.

### **Annual income**

INCOME	TRANSPORT	FOOD & ACCOMMODATION	HANDI CRAFTS	TOTAL
12000-25000	25 %	15 %	30 %	70
25000-40000	45 %	20 %	30 %	95
40000-60000	20 %	25 %	25 %	70
60000 & above	10 %	40 %	15 %	65
Total	100 %	100 %	100 %	300

The income of the respondents shows the personal income from all sources per year. The annual income of the respondents before availing credit has been classified into four groups (below Rs.12000-25000, Rs.12001-Rs.25001-40000, Rs 40001 - Rs.60000, and above Rs.60001) and it has been shown in the table on annual income above.

The table clearly shows that out of 100 respondents in transport 25 % belong to below Rs.12000-25000 level of income, 45 % of them belong to the range of Rs.25001 to Rs. 40000, 20 % of them belong to the range of Rs.40001 to Rs.60000 and 10 % of them belong to Rs. 60001 and above level of income.

Out of 100 respondents in Food and Accommodation 15 % respondents belong to Rs.12000 -25000 level of annual income 25 % of the respondents come under the range of Rs.25001 to Rs.40000, 25 % respondents come under the range of Rs.40001 to Rs.60000, and 40 % respondents belong to Rs.60001 and above.

### **Suggestion**

It is necessary to lay rail lines between madurai and the chettinad region head quater is known as Karaikudi.

### **CONCLUSION**

In conclusion the Entrepreneurship doing well in different parts of the district in implementing the tourism potentials.

## Ecotourism: A trending Concept for Sustainability

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### Abstract

Tourism is bigger now than ever before. International tourist arrivals quadrupled and then doubled again between decades. The most remote places, from the Amazon rainforest to ice-bound Antarctic, have become respectable leisure destinations. No corner of the Earth remains untouched, and many countries rely on tourism for their income. Tourism in India is economically important and is growing rapidly. Tourism generated 14.02 lakh crore (US\$220 billion) or 9.6% of the nation's GDP in 2016 and supported 40.343 million jobs, 9.3% of its total employment. The sector is predicted to grow at an annual rate of 6.8% to 28.49 lakh crore (US\$440 billion) by 2027 (10% of GDP). This unparalleled growth has prompted concerns about its impact on fragile ecosystems and traditional communities and led to the appearance of ecotourism. Ecotourism is a sub-component of the field of sustainable tourism. Ecotourism, as an alternative tourism, involves visiting natural areas in order to learn, to study, or to carry out activities environmentally friendly, that is, a tourism based on the nature experience, which enables the economic and social development of local communities. This paper focuses on various aspects of ecotourism like different types of tourism, advantages and disadvantages, need for ecotourism in sustainability of tourism industry and some of the ecotourism spots in India for a better understanding on this topic.

**Keywords:** ecotourism, mass tourism, sustainability, stakeholders and ecotourists

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

As the largest business sector in the world economy the Travel & Tourism industry is responsible for over 230 million jobs and over 10% of the gross domestic product worldwide. International tourism in developing countries is increasing by 9.5% a year compared to 4.6% worldwide. Any tourist destination can be harmed by increased levels of tourism. If areas are damaged or destroyed, they might not be available to future generations. Saving the environment around you and preserving the natural luxuries and forest life, that's what eco-tourism is all about. Eco-tourism is considered the fastest growing market in the tourism industry, according to the World Tourism Organization with an annual growth rate of 5% worldwide and representing 6% of the world gross domestic product, 11.4% of all consumer spending - not a market to be taken lightly. Eco-tourism is consecrated for preserving and sustaining the diversity of the world's natural and cultural environments. It accommodates and entertains visitors in a way that is minimally intrusive or destructive to the environment and sustains & supports the native cultures in the locations it is operating in. Ecotourism encourages visitors to a country to leave a small carbon footprint, to the benefit of local communities and environments. It has become an increasingly popular option for many people.

Even though ecotourism lacks a concrete definition, there are many well recognized definitions that have formed a clear picture of its core principles. According to Ceballos Lascurain (1987) (Joshi, 2011) Ecotourism is defined as, "Travelling to relatively undisturbed natural areas with specific objective of studying, admiring and enjoying scenery and its wild animals and plants as well as existing".

### TYPOLOGY OF TOURISM:

- Adventure tourism.
- Geo tourism.
- Mass tourism.
- Ecotourism.

- Nature based tourism.
- Pro- poor tourism.
- Medical tourism.
- Responsible tourism.

#### PROBLEMS FACED BY TOURISM INDUSTRY IN INDIA:

- **Business Hurdles**

Government regulations in India frustrate tourists and tour operators alike, with ever-shifting visa rules that can leave visitors in the lurch and create inconsistent enforcement. Tourist facilities have a lack of skilled workers to fill all the positions to cater to international visitors. Service, luxury and transportation taxes are high, and hit visitors in the pocketbook when planning a trip to India.

- **Attacks on Women**

India tour operators reported a 25 percent drop in business over the first quarter of 2013 after the high-profile slaying of a 23-year-old woman who was gang raped riding a bus in Delhi the previous December. With the case inspiring other victims of sex crimes to bring their stories into the light, the Associated Chambers of Commerce and Industry of India said female tourism dropped by 35 percent that same quarter.

- **Security Concerns** - India is in a constant state of tension with its fellow nuclear neighbor, Pakistan, and the U.S. government has long warned travelers to avoid the restive border and disputed Kashmir. The threat of terrorism to tourists hit closer to home in the 2008 Mumbai attacks, when gunmen fired on a train station platform, cafes and luxury hotels; the victims included 28 foreigners from 10 countries.

- **Concerns About Industry Growth** - Despite the influx of overseas cash that tourism brings to a country, one challenge for the tourism industry in India comes from within. Concerns about the potentially negative impact of tourism here include economic boons for some areas but not others and resulting migration of workers, underemployment caused by seasonal work, inflation as tourists drive up prices and preferences given to tourists for supplies such as water rations. There are also concerns about the environmental impact of tourism on an already crowded country and the potential wearing down of cultural monuments from overuse.

#### Scope And Need For Ecotourism In India

It is tragic that since last few decades, the mad quest for the material end and economic progress in India and abroad has become identical with the exploitation of nature in all its appearances. Today, the entire world is facing a deep crisis and is in the danger of being doomed. The rich forest areas and biological diversities have been relentlessly divested to erect concrete walls. The continuous denuding of forest reserves has led to Global Warming and Greenhouse Effects. Fortunately, this has led to some realization, and now the world has awakened for new beginnings about human responsibility towards nature.

With advances in transportation and information technology, even the most remote places on Earth are within reach of the traveler. In fact, tourism is now the world's largest industry, with nature tourism the fastest growing segment. People want to experience nature and the world, but should try to do so in a way that doesn't impact the natural environment. In response to this increasing appreciation of nature experiences, a new travel ethic has arisen called ecotourism.

India, the land of varied geography offers several tourist destinations that not just de-stress but also rejuvenate. There are several ways to enjoy Mother Nature in most pristine way. The India topography boasts an abundant source of flora & fauna. India has numerous rare and endangered species in its surroundings. Currently, there are about 80 national parks and 441 sanctuaries in India, which works for the protection and conservation of wildlife resource in India. The immense and diverse geographical setting of the country nestles numerous of naturally affluent locations that can better be called as Eco wonders of India. Abundant of Eco locations like beaches,

backwaters, waterfalls, lakes, deserts, caves, hills villages and tribes has become a attracted destinations for Tourists Which Has Increased The Scope Of Ecotourism In India.

### **Principles Of Ecotourism**

Ecotourism is about *uniting conservation, communities, and sustainable travel*. This means that those who implement, participate in and market ecotourism activities should adopt the following ecotourism principles:

- Minimize physical, social, behavioral, and psychological impacts.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Generate financial benefits for both local people and private industry.
- Deliver memorable interpretative experiences to visitors that help raise sensitivity to host countries' political, environmental, and social climates.
- Design, construct and operate low-impact facilities.
- Recognize the rights and spiritual beliefs of the Indigenous People in the community and work in partnership with them to create empowerment.

### **ISSUES ADDRESSED BY ECOTOURISM**

Eco tourism addresses the economic issues, social issues and environmental issues and in turn benefits them. It is discussed in brief as follows,

#### ***Environmental issues***

By encouraging travelers to behave in an environmentally responsible way, ecotourism operators offer relevant information and advice on how travelers can minimize their impact on the ecosystem as well as how they can contribute to the protection of fragile ecosystems by offering travelers the opportunity to participate in conservation or preservation projects. An important element of this type of project is education. The goal is that through participation, eco travelers will return home with increased awareness and concern for environmental issues and therefore continue to behave in an environmentally conscious way.

#### ***Social issues***

Involving the local community in aspects of planning, decision-making and management of ecotourism encourages the empowerment of individuals by educating travelers through leaflets, interpretation and advice from tour operators or guides about the culture, customs and etiquette of locals. This prevents conflict or offence between local and traveler interactions that may be caused through misunderstanding or ignorance.

#### ***Economic issues***

Employing local people whenever possible and paying fair wages prevents exploitation and benefits the local economy by preventing leakages of the revenue acquired through tourism. Many eco tour operators are involved in working on initiatives and projects with the local community such as training and education programs.

### **ADVANTAGES OF ECOTOURISM:**

- Ecotourism is an opportunity to preserve ecosystems and biodiversity. It is also a chance to generate revenue to support research efforts.
- Ecotourism also helps to protect threatened wildlife and ensure that robust animal populations remain that way.

- Ecotourism presents an environment friendly and potentially more sustainable alternative to extractive activities such as farming, logging, mining or harvesting of wildlife.
- Ecotourism provides chance for local people to escape from a cycle of poverty and by sharing their knowledge of the local terrain and ecology with visitors to develop a stronger sense of community pride and a broader, more global, perspective that recognizes the significance of biodiversity to all people.
- Business initiated through ecotourism ventures can become self-sufficient within a short span of time and can enhance the long-term economic prospects of a community.
- Foreign visitors are benefitted as ecotourism provides an educational glimpse of a world on their own often a world of striking natural beauty and rich cultural heritage. A more subtle benefit is the opportunity to engage in an international dialogue with people from different background. This cross- cultural exchange can form a healthy bridge between developed and developing nations of the world.
- Ecotourism can create jobs in remote areas that have benefitted less from economic development programs that have more populous areas.
- Protected areas and nature conservation usually provide many benefits to society, including preservation of biodiversity and maintenance of watersheds.
- The benefits of ecotourism for indigenous communities include preservation of its culture and tradition, conservation of the natural environment and maintenance of social, cultural and religious values. In remote areas with limited development ecotourism ventures can improve the quality of life, self-esteem and well-being of local and indigenous communities.

#### **DISADVANTAGES OF ECOTOURISM**

- Conversion of undeveloped land into profitable space for tourism. National parks and wilderness areas may be compromised by an influx of tourists.
- Ecotourism may cause displacement of some local residents.
- The industry of ecotourism attracts upper-class, urban tourists who may not be culturally sensitive and may alienate the local residents.
- Mismanagement and intrinsic problems of cost-benefit
- Ecotourism if not monitored properly it can be as damaging as mass tourism.

#### **STAKEHOLDERS OF ECOTOURISM**

- National government
- Ecotourism industry
  - Travel agents
  - Outbound tour operators
  - Inbound tour operators
  - Ecolodges
- Non-governmental organizations.
- Communities.
- Development agencies.

#### **RELATIONSHIP BETWEEN ECOTOURISM AND SUSTAINABLE TOURISM:**

Sustainable tourism is a kind of approach of tourism meant to make the development of tourism ecologically supportable in the long term. The very importance of sustainable tourism lies in its motives to conserve the

resources and increase the value of local culture and tradition. Sustainable tourism is a responsible tourism intending to generate employment and income along with alleviating any deeper impact on environment and local culture.

Ecotourism basically deals with nature based tourism, and is aimed “to conserve the environment and improves the well-being of local people”. On the other hand, sustainable tourism includes all segments of tourism, and has same function to perform as of ecotourism to conserve the resources and increase the local cultural and traditional value. Though the goals of ecotourism and sustainable tourism are much similar, but the latter is broader and conceals within itself very many aspects and categories of tourism.

### Comparison of Mass Tourism and Eco Tourism

Characteristics of mass tourism.	Characteristics of ecotourism
Large groups of visitors	Small groups of visitors
Urban	Rural
Touristic general marketing activities	Eco-marketing activities
Average prices for purposes of market penetration	High price with purpose of filtering the market
Impact on natural environment	Little impact on the natural environment
Advanced control options	Limited possibilities of control
Management based on macroeconomic principles	Management based on local economic principles
Anonymous relationship between visitors and local community	Personalized relationships between visitors and local community
General development goals	Local development objectives
Behavior-oriented leisure activities/entertainment, opponents to education and training actions	Loyalty in the process of training and education for appropriate conduct for the natural environment
Intensive development of tourism facilities	Reduced development of tourism facilities

### Steps to Successful Ecotourism

- The first step in successful ecotourism planning is to define the protected areas based on ecological, scientific, economic, aesthetic, and recreational values.
- Once the area has a protected status, develop management zones. The most sensitive areas should have no development while less sensitive areas may be zoned for research, minimal tourism, and or higher impact tourism.
- The third step is the establishment of a “Management Authority” that includes local people. Once the protected area is identified and zoned, this Management Authority should develop a long-term management plan that addresses regulation of the protected area.
- Develop design guidelines that are essential to ensure that tourism development is compatible with protecting the resource and maintaining scenic beauty.
- The final step is the successful marketing through research and participation in the international ecotourism community.

**Places for Ecotourism In India**

India is a land with huge diversity of dry deserts, snow-clad mountains, rainforests, national parks, caves, backwaters, and the grasslands which are perfect for ecotourism in India. A few best places are listed below,

- Valparai, Tamilnadu
- Chatru and Chandratal Lake, Himachal Pradesh
- Gulmarg, J&K
- The Seven Sister States
- Kokrebellur near Mysore
- The Crocodile Park, Pondicherry
- Spiti-Valley, Himalayas
- Bisle Rainforest, Western Ghats
- Tea gardens of Assam and Darjeeling
- Thenmala, Kerala
- Coorg, Karnataka
- Ajanta & Ellora caves

**Guidelines for Ecotourists**

- Protect the environment.
- Don't interfere with wildlife.
- Protect resources.
- Support local communities.
- Eat local food and drink.
- Respect local customs and traditions.
- Reduce, reuse and recycle.
- Put waste where it belongs.
- Be a good example for others.

**Conclusion**

Ecotourism has proven itself to be an important tool for conservation, and in certain cases it has improved the quality of life of local people, who continue to demand it as a sustainable development option. But its records have been far from uniform throughout the world. Evaluating ecotourism as a global sustainable development tool is difficult task. It has been frequently mislabeled and in ways that do not meet the standards. In order to become a successful sustainable development tool, ecotourism requires a thorough investigation into the planning of ecotourism destinations and their long term management and adequate government funds must be made available for this. Clearly no destination will prosper in a long run especially an eco-destination so it has to be managed properly to protect its integrity. It is time for the government to initiate better policies that reinvest the revenues generated by tourism into proper tourism planning and management.

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## Study on the Sustainable Prospects of Kochi as a Destination

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### Abstract

*Kerala- God's Own Country, has emerged as one of the prime tourism destination on the national and international map and is considered as the tourism trendsetter in the Country. The availability of plenty of natural resources, skilled manpower, supportive entrepreneurial community, strong local Self-Govts, Civil Society Organizations, multitude of micro enterprises, streams of professionals and academicians, responsible media and responsive tourism industry, provide the state an ideal setting to implement and practice Sustainable Tourism Models in State. Kochi formerly known as Cochin, is a city in the Indian state of Kerala. Kochi or Cochin is popularly known as the Queen of Arabian Sea, which flaunts one of the finest natural harbors of the world.*

*People's Own Tourism' is meant for the sustainable development of tourist destinations in Kerala with the support of the local people. The project will take tourism to the common man and ensure that the benefits of tourism reach the local people. Sustainable tourism should make optimal use of environmental resources, respect Socio-cultural authenticity of host Communities, ensure viable, long term economic operations.*

*The sustainable development approach implies that the natural, cultural and other resources of tourism are conserved for continuous use in the future, while still bringing benefit to the present society. The concept of sustainable development has received much emphasis internationally since the early 1980s, although tourism plans prepared even before that period often were concerned with conservation of tourism resources. The key elements for tourism sustainability are preserving the current resource base for future generations, maintaining the productivity of the resource base, maintaining bio-diversity and avoiding irreversible environmental changes, ensuring equity within and between generations, maintaining and protecting the heritage of (Culture and History) the area or the region. The purpose of study is to highlight the sustainable prospects utilized by Kochi as a Tourist Destination.*

**Keywords:** sustainable tourism, environmental resources, socio- cultural, economic operations, environmental changes, bio-diversity.

**Main Conference Topic:** Sustainability, Environment and Risk Management

### INTRODUCTION

Tourism has become one of the major sectors of our economy as it makes a major contribution to our Gross National Domestic Product. It has been two decades since the notion of sustainable development entered the lexicon of International Jargon, inspiring countless international meetings and even some action.

Sustainable tourism is connected with sustainable development. Sustainable development is a development which is sufficient to today's needs and doesn't jeopardize the next generations to live the same or better life as us. The sustainable development approach to planning tourism is acutely important because most tourism development depends on attraction and activities related to the natural environment, historic heritage, and cultural patterns of areas. If these areas are degraded or destroyed, then the tourism areas cannot attract tourists and tourism will not be successful. Tourists seek destinations that have a high level of environmental quality.

key elements for tourism sustainability:

- preserving the current resource base for future generations
- maintaining the productivity of the resource base
- maintaining bio-diversity and avoiding irreversible environmental changes,
- ensuring equity within and between generations
- maintaining and protecting the heritage of (culture and history) the area or the region.

A new sustainability paradigm would challenge both the viability and desirability of conventional values, economic structures and social arrangements. It would offer a positive vision of a civilized form of globalization for the whole human family. This will only happen only if the key sectors of world society come to understand the nature and the

gravity of the challenge, and seize the opportunity to revise their agendas. Four major agents of change, acting synergistically, drive a new sustainable paradigm, are global actors- intergovernmental organizations, transnational corporations and civil society acting through non- governmental organizations, and spiritual communities, the fourth is less tangible.

The Sustainable Development Goals, set up by United Nations are as follows:-

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Affordable and clean energy
6. Decent work and economic growth
7. Industry, innovation and infrastructure
8. Reduced inequalities
9. Sustainable cities and communities
10. Responsible consumption and production
11. Climate action
12. Life below water
13. Life on land
14. Peace, justice and strong institutions
15. Partnership for the goals

### **About the Study Site**

Kerala has emerged as one of the prime tourism destination on the national and international map and is considered as the tourism trendsetter in the Country. The availability of plenty of natural resources, skilled manpower, supportive entrepreneurial community, strong local Self-Govts, Civil Society Organizations, multitude of micro enterprises, streams of professionals and academicians, responsible media and responsive tourism industry, provide the state an ideal setting to implement and practice Sustainable tourism Models in State.

Kochi formerly known as Cochin, is a city in the Indian state of Kerala. Kochi or Cochin is popularly known as the Queen of Arabian Sea, which flaunts one of the finest natural harbors of the world. People's Own Tourism' is meant for the sustainable development of tourist destinations in Kerala with the support of the local people. The project will take tourism to the common man and ensure that the benefits of tourism reach the local people.

### **Study Objectives**

- To study on the sustainable aspects of Kochi as a Destination.
- To evaluate the application of sustainable practices of various tourism sectors
- To suggest measures for sustainable practices

### **REVIEW OF LITERATURE**

Since the 1980s, sustainability as a term has been used more in the sense of human sustainability on Planet Earth and this leads us to the concept of sustainable development which is defined by the Brundtland Commission of the United Nations (March 20, 1987) as follows, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

According to UNEP (United Nations Environment Program), sustainability in tourism, “refers to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance amongst these three dimensions to guarantee its long term sustainability.” In short Sustainable tourism and Responsive tourism aims at environmental integrity, social justice and maximization of local economic benefits.

According to Thomas Jefferson Sustainability Council, Sustainability maybe described as our responsibility to proceed in a way that will sustain life, that will allow our children, grandchildren and great – grandchildren to live comfortably in a friendly, clean, and healthy world that people:

- Take responsibility for life in all its forms as well as respect human work and aspirations.
- Respect individual rights and community responsibilities.
- Recognize social, environmental, economic, and political systems to be inter-dependent.
- Weigh costs and benefits of decisions fully.
- Acknowledge that resources are finite and that there are limits to growth.
- Assume control of their destinies.
- Recognize that our ability to see the needs of the future is limited.

## METHODOLOGY

Data for the proposed study have been collected from the primary and secondary sources. The primary data have been collected through personal interview with officials of various segments of tourism industry. Secondary Data was collected from websites, published articles and books.

### Kochi and its Sustainability Aspect

The study was undertaken to study sustainability of Kochi as a destination.

The area of Kochi is around 94.88km<sup>2</sup> and the population is around 2,117,990 making it the largest urban agglomeration in Kerala. It consists of 9 Municipalities, 14 Panchayaths and parts of 4 Panchayaths. Kochi was the princely state under the kingdom of Kochi which came into existence in 1102, after the fall of Kulasekhara empire. The princely state had the Kochi mainland as its capital.

It is a major coastal city which acts as a gateway to goods in India, helping in the development of the city. Over the years the city has witnessed rapid commercialization, and has grown into the commercial capital of Kerala. Kochi as a tourist destination provides ample opportunities for the tourist. The destination is a beautiful blend of history, culture, nature, beliefs and practices etc. Therefore, it makes it utmost important to handle the problems that arise which make the pristine destination less popular. The main areas to concentrate are:

### Pollution

Pollution is the introduction of contaminants into the natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants. Pollution is often classed as point source or nonpoint source pollution.

Due to a large shift from rural to urban areas, and due to the influence of a large variety of opportunities the destination has attracted many people from other districts to settle down here leading to overcrowding and breaking the carrying capacity of the place. The following table shows the pollution level at Kochi

Pollution in Kochi, India		
Air Pollution	66.49	High
Drinking Water Pollution and Inaccessibility	47.09	Moderate

Dissatisfaction with Garbage Disposal	73.81	High
Dirty and Untidy	60.37	High
Noise and Light Pollution	53.66	Moderate
Water Pollution	65.85	High
Dissatisfaction to Spend Time in the City	61.67	High
Dissatisfaction with Green and Parks in the City	45.73	Moderate

### Safety and security

According to Merriam-Webster, the primary definition of safety is "the condition of being free from harm or risk," which is essentially the same as the primary definition of security, which is "the quality or state of being free from danger." Kerala is considered the most hospitable state in India. The people welcome the guest as family and make them experience the true tradition of the land. The destination has to look out for provisions to make a safe environment to move on at any time of the day. Tourists should be able to move round freely without any disturbances. The state also experiences frequent strikes and lockout which should be controlled for the development of the Tourism Industry.

### Transportation

The place has a very good connectivity and can be reached out by any modes of transportation. It has beautiful canals and inland waterways, as well as road and rail networks which keeps the destination connected. Road, Rail, Air and water Connectivity gives the tourist an experience to enjoy each and every mode.

### Local Participation

By involving the locals in various areas of tourism like tourist police, Guide, Vendors etc more employment opportunities can be generated. It helps to increase their living standards and keeps them busy to think fruitfully.

### Sign posting

The destination should increase the number of sign boards so that it would be easier for the tourist to find out how to move about in a destination.

### Waste disposal

Waste management or waste disposal are all the activities and actions required to manage waste from its inception to its final disposal. This includes amongst other things collection, transport, treatment and disposal of waste together with monitoring and regulation. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling. Provisions should be made to keep bins at all tourist regions to reduce the waste accumulating around the destination. Groups has to be formed for its timely disposal and maintenance. E-toilets have been set up many places but its maintenance is in a standstill in certain areas.

### Feeding the poor

Kochi has seen an increase in a lot of migrant people who have come up for survival.

Initiatives can be framed out with the help of different NGOs, Government bodies, Hotel, restaurant and bakery association to bring out methods of how to utilize the extra foods coming out in different segments and utilize to feed the hunger.

## Go green

All undertaking should be encouraged to adopt green practices, certain hotels and restaurants started adopting green lifestyle in their business. They can be encouraged to grow their vegetables, construct water treatment plans, encourage the importance of using solar plants etc.. Establishments part of the tourism industry should be encouraged to minimize the use of plastics and other degradable components that harm the nature.

## Environmental practices

Provisions should be made to keep the city clean and hygienic. Routine clean up drive should be undertaken. The young generation should be motivated to utilize environmental practices, avoid wastages, and also teach on the importance of protecting the nature.

## Educate

Locals, tourist and all stakeholders should be educated to properly maintain and utilize the resources in a fruitful manner.

## Declining of water Quality

The major problems associated with water quality is the availability of bacteria, due to the disposal of household and industrial waste into the water body. Steps should be taken to preserve and protect the rich water resources available.

## Adopt alternative practices

Encourage more practices to encourage tourist-host interaction by encouraging recognized home stays, farm tourism, cultivation tourism etc which can link the environment and the attractions together. Back to nature programs can be develop where the tourist can enjoy things in the pristine form and no harm takes place to the environment.

## CONCLUSION

The rationale of sustainable tourism development usually rests on the assurance of renewable economic, social and cultural benefits. Clearly sustainable tourism implies an approach to development aimed at balancing social and economic objectives with environmentally sound management. Sustainable tourism should therefore:

- Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- Respect socio-cultural authenticity of host communities, conserve their built & living cultural heritage & traditional values, and contribute to inter-cultural understanding and tolerance.
- Ensure viable, long term economic operations, providing socio-economic benefits to all stakeholders.
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## Valuation of Prospects for Sustainable Development of Border Regions and Foresight Risks of Interaction between countries

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### Abstract

*In modern conditions of activation of the processes of integration and globalization, the issues of transboundary interaction of regions are of great interest. The processes of transboundary interaction are changing at different stages of historical development. They depend on a number of factors, including not only economic but also political and intercultural. The evaluation of the prospects for sustainable development and the formation of long-term strategies for interaction between the border regions are the most important tasks in the current geopolitical conditions. In this, foresight-projecting as an effective technological management tool can become the main tool for minimizing the risks of interaction between countries. In this regard, it becomes urgent to scientifically substantiate the assessment of challenges, threats and prospects for sustainable development, the design of future scenarios and the risks of interaction between countries sharing a common border.*

**Keywords:** sustainable development, risks, regions, cross-border cooperation, foresight projecting, phases of cycles

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

In modern conditions of activation of the processes of integration and globalization, the issues of cross-border interaction of regions are of great interest. The processes of cross-border interaction are changing at different stages of historical development. They depend on a number of factors, including not only economic, but political and intercultural.

The assessment of the prospects for sustainable development and the formation of long-term strategies for interaction between the borders regions are the most important tasks in the current geopolitical conditions.

The forecasting of sociocultural phenomena and processes occurring in the cross-border regions of neighboring countries activates the search for a new tool that meets their multidimensionality. One of such innovative tools is foresight, used in Russia and other countries in management practice to minimize the risks of interaction between neighboring regions.

Foresight is the most effective technology for working with the future. Forsythe technology reduces uncertainty and allows you to create a targeted image of the future. However, the logic of foresight design, adapted to the conditions of cross-border interaction, is not formed. Prioritization of the objectives, justification of the choice of forecasting and planning methods, development of schemes for interaction between stakeholders in the process of implementing projects with various intercultural interactions and many other problems remain unresolved. The application of foresight design allows solving a number of problems of regional development especially in the context of cross-border interaction. In the current economic conditions, characterized by the intensification of the processes of integration and globalization, the issues of cross-border interaction of the regions are of great interest and require proactive government regulation.

### Purpose

The aim of the article is to systematize the approaches, tools and methods of foresight of cross-border interaction, to identify the main constraints, challenges and threats to Russia's sustainable development when interacting with China and Ukraine in the current political realities of the "eastward" reorientation.

### Analysis of research and publications

Foresight-design issues are considered by many foreign and domestic authors, which is explained by the integration in it of various areas of science and practice.

The term "foresight" in the socio-economic lexicon came about thanks to the famous science fiction writer Herbert Wales's (Wells, 1932).

The essence and purpose of foresight for the sustainable social and economic development of society is most accurately represented in the definition of Ben Martin, which characterizes him as an assessment of the long-term prospects of science, technology, economics and society in order to determine the strategic directions of research and new technologies that bring maximum socio-economic effects (Martin, 1995).

The international experience of using foresight methodology is described in detail by the German economists Zweck A., Braun A., Rijkers-Defrasne S., the research was based on the materials of the 9th Berlin Symposium on Foresight and Technological Planning (Zweck, Braun & Rijkers-Defrasne, 2014).

Japan, China, Korea, USA, Brazil, France, Great Britain, the EU have accumulated significant experience in the development and implementation of Foresight projects, which has both universal features and national specifics.

Professor of Entrepreneurship and Strategic Foresight at the University of Lincoln (UK) Ted Fuller describes the evolution and the emerging foresight methodology (methodological trends) (Fuller, 2015). A significant contribution to the development of this topic was made by such foreign authors as Fischhoff B., Green, K., Johnston, R., Georghiou, L., Goodwin, P., Keenan, M., Harper, J. C. The official development of foresight in our country begins with the creation in 2006 of the International Scientific and Educational Foresight Center of the Higher School of Economics. The Forsythe Center successfully develops and implements projects, develops a methodology and promotes the active introduction of foresight into the practice of foresight and management.

The national foresight paradigm is formed thanks to the work of Russian scientists: A.V. Sokolov, O.I. Karasev, S.N. Kukushkina, M.P. Kirpichnikov, S.A. Shashnov, V.A. Rud, A.B. Dub, J.M. Gochberg, V.O. Vishnevsky et al. Foresight-designing of social and economic development of the country in the regional context for the purposes of state regional policy includes the development of forecasts of two types: federal and regional forecasts, which are of an official nature, since their development is carried out in accordance with the Federal Law on June 28, 2014 No. 172-FZ "On Strategic Planning in the Russian Federation". According to it, the above-mentioned official forecasts are developed annually on behalf of the Government of the Russian Federation and in accordance with the procedure for developing the forecast of the social and economic development of the Russian Federation and its subjects agreed upon with it, and also based on the scenarios of the socio-economic development of the country approved by the Government of the Russian Federation for the forecast period.

The question of foresight-designing of transboundary interaction at this stage has been studied very modestly, among the list of available works, the scientific works of N.Y. Kalyuzhnova and T. N. Kuchinskaya. In the field of transboundary interaction, the following authors are distinguished: B. Balash, L. Walras, A. Lesh, J. Tinbergen, A.B. Volynchuk, T.I. Gerasimenko, K.V. Lecontseva, K.W. Lekontsev, K.I. Berezovsky, LA Bezrukov et al.

Prospects for the development of Foresight based on the synthesis of forecasting methods and strategic planning have not been studied enough. For example, the results of comprehensive forecast-analytical and strategic studies conducted by us (Vertakova & Grechenyuk, 2017), (Vertakova, Polozhentseva & Klevtsova, 2016) can become the basis of technology for the development of regional foresight.

## Research Methodology

The study is based on a systematic approach to assessing the sustainable development of border regions.

Prospects of cross-border cooperation between Russia and other countries can be predicted on the basis of foresight using a wide variety of quantitative and qualitative methods.

The methodological basis of the foresight design used in the study forms a variety of special qualitative and quantitative methods (interviews, SWOT analysis, morphological analysis, scenario approach, etc.), as well as synthetic methods: expert methods, road map, focus group formation, etc.

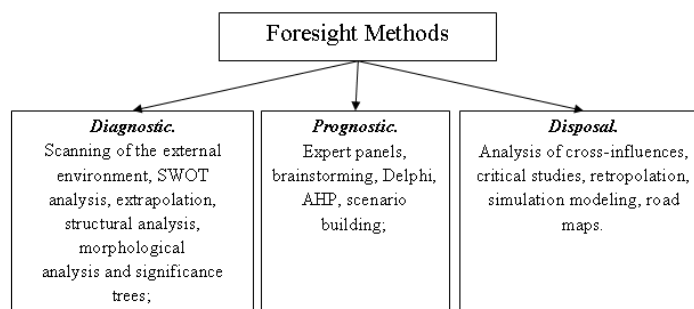


Figure 1: Foresight design methodology, Source: Compiled by the author on the materials (Krymova, 2009)

At the regional level, foresight design is a technological management tool. The methodological basis of foresight design forms an ever-widening variety of tools, including dozens of special qualitative and quantitative methods (interviews, literature reviews, morphological analysis, matching trees, role games, scenarios, mutual influence analysis, modeling, etc.), and synthetic methods: Delphi, critical technologies, scenario development, technological roadmap, the formation of focus groups and expert panels (Fig. 1).

At the moment in Russia, so far, there is no formed foresight culture. For its formation, it is necessary to create appropriate teaching methods. A feature of the proposed methodology is the combination of a set of foresight methods with an assessment of the economic development phases of border regions on the structural elasticity of output.

## Results

Foresight is a systematic, collaborative process of building the image of the future in the medium and long term, aimed at improving the quality of decisions currently made and coordinating joint actions. Foresight proceeds from the premise that the onset of a "desirable" version of the future depends to a large extent on the actions taken by the public administration today. Therefore, a correctly organized foresight process necessarily contains elements of active influence on the future. In Table 1 systematized the main approaches to the definition of the concept of "Foresight".

Based on the above definitions, Foresight's goal is to identify a possible future, to form a desirable vision of the future and to build strategies for achieving it. Foresight is a process of cooperation between representatives of government authorities, the scientific community, business, as well as civil society, whose goal is to find a consensus, based on experts developed alternatives to the development of society. The implementation of the Foresight project can take place at several levels: corporate, regional, national, international.

In modern practice, it is customary to distinguish the following foresight components:

- Analysis of trends and events for risks;
- Projection (blitz-design);
- Indicative analysis of projects;
- Drawing up the Road Map;
- Development of future scenarios
- Formulation of the technical assignment for the implementation and work with the road map
- Packing foresight results and making recommendations.

*Table 1: Approaches of authors to the concept of "Foresight"*

Author	Definition
FOREN Guide	Foresight is a systematic, collaborative process of building the image of the future in the medium and long term, aimed at improving the quality of decisions currently made and coordinating joint actions.
Asia-Pacific Economic Cooperation - Center for Technology Foresight	Foresight is a systematic attempt to look into the future of science, technology, society and the economy to ensure the prosperity of society, the economy and the environment.
Technology and Innovation Foresight for Bulgaria and Romania - ForeTech	Foresight is a natural human activity that has been performed before. Now it is formalized in the framework of a special methodology and is used to determine the long-term consequences of decision-making in science and technology.
UNIDO	Foresight is a system of methods for expert evaluation of strategic directions of socio-economic and innovative development, identifying technological breakthroughs that can affect the economy and society in the medium and long term.

Ben Martin (University of Sussex)	Foresight is a systematic attempt to assess the long-term prospects of science, technology, economics and society to determine the strategic directions of research and new technologies that can bring the greatest socio-economic benefits.
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At the first stage, a list of challenges and threats to Russia's sustainable development in the field of cross-border cooperation has been structured and systematized.

In these realities, there are four areas of cross-border cooperation with the trend towards cross-border cooperation between Russia:

- European - is carried out through the programs Kolartik, Karelia, Russia-South-East Finland, Russia-Estonia, Russia-Latvia, Russia-Lithuania, Russia-Poland. In addition to the above, the "Baltic Sea Region" and "Northern Periphery and the Arctic" projects are being prepared;
- Asian - the interaction of the Far Eastern and Siberian subjects of the Federation with Asian neighboring countries, mainly with China, focused on intensive integration in the APR. One of the most promising areas (the presence of ice-free ports, free economic zones, the largest transport-logical nodes, natural-economic and recreational resources);
- Post-Soviet borderland - transboundary processes in the territory of the countries of the former USSR, due to the general lack of infrastructure of the border infrastructure. Separately, it is necessary to single out the Caspian region in the composition of Azerbaijan, Iran, Kazakhstan and Turkmenistan, which draws the attention of the world powers since it is of great importance for world energy markets and the status of a transit zone between Europe and Asia;
- The northern direction is active cooperation with neighbors in the Arctic zone, on the basis of which the Northern Forum and the Council of the Barents Euro-Arctic Region were formed - the CBER (Zykov, 2008). The direction of the Council's activities is to promote the sustainable development of the region, bilateral and multilateral cooperation in the fields of economy, trade, science and technology, the environment, infrastructure, education and cultural exchanges, tourism, and projects aimed at improving the situation of the indigenous population of the North.

Based on the analysis of information on Russia's transboundary interaction, we provided relevant information in graphical form in Figure 2.

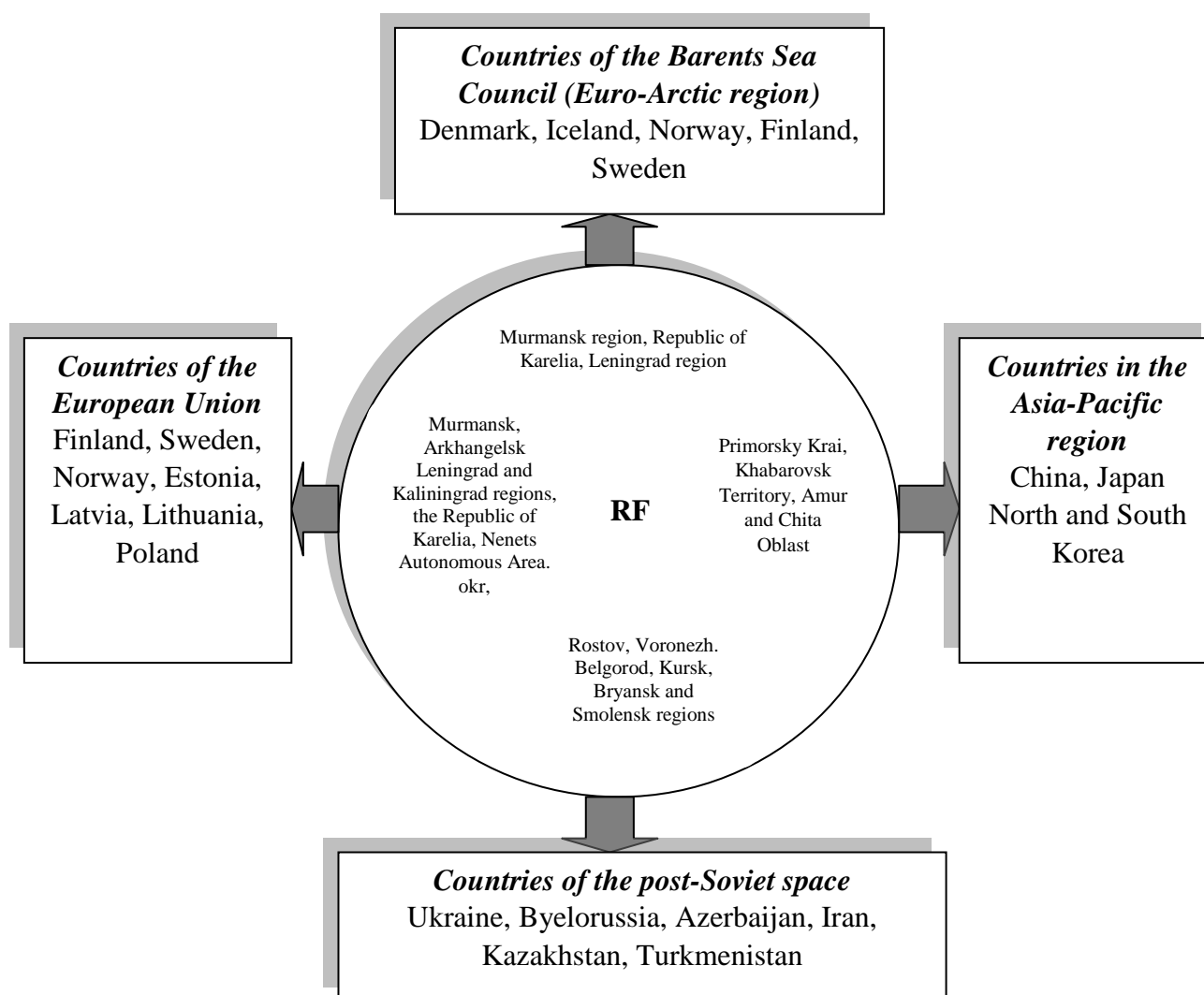


Figure 2: Directions of cross-border cooperation of Russia, Source: developed by the author

There are a number of features of Russian cross-border cooperation of regions in contrast to the European model of cross-border interaction. One of them is the lack of harmonization of institutional economic conditions, such as customs and financial legislation, uneven and asymmetric social and economic development of neighboring regions, high dependence on geopolitical factors, and underdevelopment of institutions regulating the type, processes and models of cross-border integration.

Using the SWOT-analysis matrix, a strategic analysis of the Russian Federation was made, which allows assessing both the internal and external environment. Expertly evaluating each of the tracks and composing paired combinations, identified the main problems and advantages of the country, considered foresight of cross-border interaction (Table 2).

Table 2: Paired combinations of SWOT analysis

	Opportunities	Threats
Strengths	<ol style="list-style-type: none"> <li>1) The large territory of the country and the availability of minerals contribute to an increase in the production of finished products on the territory of the country, which will increase the level of integration with the border states, in particular with China.</li> <li>2) The high level of education of the population can create a positive external effect for improving the quality of education and the development of scientific and technical progress in the border regions (according to the Organization for Economic Cooperation and Development, 54% of Russians aged 25 to 64 have higher education).</li> <li>3) The growth of scientific and technical potential will reduce the instability of the economy.</li> <li>4) The abundance of water resources, the favorable geographical position and the diversity of climatic zones is a factor in the development of the tourist and recreational sector (Russia has an advantageous neighbor position with economically developed countries, access to 3 oceans).</li> <li>5) The own space program and the growth of scientific and technological potential contribute to technological improvement (the Russian space industry is one of the most powerful in the world, especially in manned space exploration and launching into orbit).</li> </ol>	<ol style="list-style-type: none"> <li>1) The large area of the territory promotes high asymmetry in the development of regions and can lead to interethnic and inter-confessional conflicts (more than 190 folks live on the territory of Russia).</li> </ol>
Weaknesses	<ol style="list-style-type: none"> <li>1) The increase in the volume of production in the country of finished products contributes to the optimization of the structure of the branches of the national economy (the Russian economy is developing mainly through extractive industries and mining);</li> <li>2) The development of tourism and recreation will contribute to the development of new territories and the solution of environmental and economic problems (according to the version of The Environmental Performance Index 2016, Russia occupies 32nd place in terms of the level of ecology);</li> <li>3) Technological improvement will help to reduce the high level of depreciation of fixed assets (according to Rosstat, depreciation of fixed assets was 47.7% in 2015).</li> </ol>	<ol style="list-style-type: none"> <li>1) When creating the optimal structure of economic sectors, Russia will contribute to a change in the level of economic stability;</li> <li>2) The development of small and medium-sized businesses in the country will help reduce social tensions (according to Rosstat, the total percentage of the population living on earnings below the subsistence minimum was 15.7% - 22.7 million people).</li> </ol>

### Foresight-design of cross-border cooperation of Russia

Foresight - the design of cross-border cooperation between Russia and two neighbors with different political context of interaction (Ukraine and China) was based on the definition of border regions with a high dynamics of economic development, which in the future could become "developmental nuclei" or "poles of growth".

The study of the nuclei of economic development was carried out by studying the structural shifts according to the method of L. Dedov (Dedov, 1995), adapted to the regional practice (Kharchenko, 2009), (Vertakova, Polozhentseva & Klevtsova, 2017).

In the course of the study, the structural elasticity of the release (E), determined by the ratio of the conservative (inertial) component of the growth rate ( $n_1$ ) to the reconstructive ( $n_2$ ), was calculated. The conservative component of the growth rate  $n_1$  is determined by the formula:

$$n_1 = (Q_1 - Q_0) / Q_0 * 100\%, \quad (1)$$

where  $Q_0$  - V of the region's output in the base year,

$Q_1$  - V of the region's output in the year under review.

The reconstructive component of the growth rate  $n_2$  is determined by the formula:

$$n_2 = (W_1 - W_0) / W_0 * 100\%, \quad (2)$$

where W is defined as: V release of the region / V of all regions.

The main indicator of the region's economic development is GRP, which is the central economic indicator at the regional level used to determine the pace of production development, cyclical fluctuations in business activity.

Table 3 presents the dynamics of the GRP of the border regions of Russia and China, taking into account the price index.

Table 3: GRP by region (taking into account price indices), Source: Rosstat and National Bureau of Statistics of China.

GRP by regions of Russia, billion rubles						
Year	Altai Republic	Transbaikal region	Amur region	Jewish AO	Khabarovsk region	Primorsky Krai
2013	33,31	229,23	210,70	38,43	498,07	577,47
2014	37,66	214,38	242,69	41,99	554,78	650,77
2015	36,52	256,85	297,09	44,14	546,81	713,07
GRP by regions of China, billion yuan						
Year	Provinces Heilongjiang	Author. district Inner Mongolia		Xinjiang Uygur Auth. area		
2013	1445,49	1691,65		844,38		
2014	1588,15	1915,63		1020,09		
2015	1678,67	2063,13		1109,85		

Analysis of Table 3 allows us to trace the dynamics of GRP and determine the largest increase in GRP in 2015 in the Amur Region by 22.4% (54.4 billion). Among China's regions, the largest increase was recorded in the Xinjiang Uygur Autonomous Region in 2014 - 20.8% (175.7 billion yuan).

Table 4 presents the definition of a conservative and reconstructive growth component, structural elasticity.

Table 4: Definition of a conservative and reconstructive growth component, structural elasticity, Source: Rosstat and National Bureau of Statistics of China

Conservative rate of growth rate n1, %						
Year	Altai Republic	Transbaikal region	Amur region	Jewish Autonomous Region	Khabarovsk region	Primorsky Krai
2014	13,05	-6,48	15,18	9,26	11,39	12,69
2015	-3,01	19,81	22,42	5,11	-1,44	9,57
The reconstructive component of the growth rate n2, %						
2014	0,03	-0,15	0,05	0,00	0,01	0,03
2015	-0,11	0,10	0,13	-0,03	-0,09	0,01
Structural elasticity of output (E), %						
2014	4,36	0,44	3,08	-20,15	7,73	4,76
2015	0,28	1,95	1,78	-1,53	0,15	12,44
Conservative rate of growth rate n1, %						
Year	Provinces Heilongjiang		Author. district Inner Mongolia		Xinjiang Uygur Auth. area	
2014	9,87		13,24		20,81	
2015	5,70		7,70		8,80	
The reconstructive component of the growth rate n2, %						
2014	-3,28		-0,35		6,32	
2015	-1,45		0,43		1,46	
Structural elasticity of output (E), %						
2014	-33,23		-2,64		30,37	
2015	-25,44		5,58		16,59	

According to the analysis of structural elasticity, we can speak about the largest indicators in Primorsky Krai, and about a spasmodic growth of the indicator by almost 3 times. All regions, in addition to the Jewish Autonomous Region, are characterized by a positive trend of structural elasticity. However, the Jewish Autonomous Region managed to significantly reduce the negative indicator of structural elasticity, which could return it to sustainable growth. Then the phases of economic development were determined by regions. Analysis of the structural elasticity of Russia's border regions of China indicates the highest rates in the Xinjiang Uyghur province. The final stage in the analysis of the economic development phases of Russia's regions in China is the identification of the phases of economic development for each region.

Table 5: Summary table of phases of economic development

	Altai Republic	Transbaikal region	Amur region	Jewish Autonomous Region	Khabarovsk region	Primorsky Krai
Phase	1→5	5→1	1→1	6→6	1→5	1→1
	Heilongjiang Province		Author. district Inner Mongolia		Xinjiang Uygur Auth. area	
	6→6		6→1		1→1	

Summarizing the assessment of the economic development phases, it should be noted that the direction of the interaction between the Russian Federation and the PRC is promising, since the most dynamically developing (with a characteristic phase transition  $1 \rightarrow 1$ ) among the border regions can be the nuclei of cross-border interaction. These regions include the Amur Region, the Primorsky Territory and the Xinjiang Uygur Autonomous Region, while the Trans-Baikal Territory and the Inner Mongolia Autonomous Region are also moving towards sustainable (complementary) development.

To implement the next stage of formation of the foresight of transboundary cooperation, we used various assessment methods, in which a total of 30 experts took part. The degree of competence of experts was evaluated on the basis of a differential method. The experts were presented the results of the calculations of the economic development phases of the regions of Russia, Ukraine and China, as well as basic information on the prospects of foresight design, based on this information and their own scientific knowledge, experts assessed the scenarios of transboundary interaction using the hierarchy analysis method (AHP).

Experts assessed the likelihood of the following scenarios, both in interaction with China and with Ukraine (Table 6).

Table 6: Scenarios of Russia's interaction

Development scenarios	Relations with China	Relations with Ukraine
Positive scenario (B <sub>1</sub> )	Further support by China to Russia (directly or indirectly) in all international affairs. A possible breakthrough in the economic interaction between the countries is a significant increase in trade turnover, which will be a sign of close cooperation at all levels. However, this is possible only if the government of the Russian Federation takes a number of measures aimed at diversifying the Russian economy, raising the industrial sector and reorienting from a purely energy and raw materials focus to more profitable products from an economic point of view. Such a state will strengthen the position of Russia itself both in the world and in the Russia-China link.	The normalization of relations with the Russian Federation is the return of Ukraine to a multi-vector policy.  This scenario is possible when a geopolitical consensus is reached between Russia and the West, which will recognize the right of the Russian Federation to influence the post-Soviet space, including Ukraine. In this case, the question of the annexation of Crimea by Russia will be closed, and the conflict in the Donbass will be settled through the federalization of the country.
Negative scenario (B <sub>2</sub> )	Despite the rather large number of coincidences in the countries approach to the international system, China has its own interests. Considering the fact that the PRC is increasing its economic, military and political weight on the world stage at an enormous rate, it is possible to regroup the forces and move the PRC to the forefront of world politics as a leader in international relations. In addition, it is likely that Russia will not be useful to	A radical scenario is the resumption of active hostilities in the Donbas.  Under current conditions this scenario may become probable, it will force the government of Ukraine to put aside economic problems and problems with reforms. The intensification of hostilities in a high degree will reduce

	China, and it will spread its influence to nearby territories, affecting the interests of the Russian Federation. With this development of events, confrontation or a local conflict is possible.	the country's socio-economic development.
A realistic scenario (B <sub>3</sub> )	Preservation of the current dynamics of relationships. Gradual increase in trade turnover, including at the expense of Russian exports. China continues to be Russia's largest trading partner. Absence of radical changes both in the structure of foreign trade and in joint programs of political and economic cooperation.	Continuation of confrontation between Russia and Ukraine in the short term. Ukraine's cooperation with the United States and rapprochement with European countries. In the long term, after the official change of Government, the resumption of cross-border cooperation on the basis of "Euroregions".

Based on the scenarios indicated in Table 6, experts assessed the development of relations with Russia, determining the weight of each direction.

To determine the weight of each scenario for the development of cross-border cooperation between Russia and China, the following criteria were introduced:

- Evaluation of economic and trade relations;
- Political interaction;
- Availability of common programs of cooperation;
- Development of customs border infrastructure;
- Bilateral investment in development.

The experts assessed the scenarios for the development of transboundary cooperation based on the selected criteria. Experts attach the greatest weight (0.562) to the positive scenario of cross-border interaction between Russia and China and weight 0, 563 to a realistic scenario in cooperation with Ukraine, thus, the road map must be constructed in these vectors.

One of the most important methods in foresight design of any research object is the method of constructing a "road map". The method of road maps is one of the most common tools for shaping development strategies, which allows you to visualize the optimal ways to achieve the goal.

The construction of road maps reflecting the prospects for cross-border cooperation between Russia and Ukraine and China was made on the basis of analytical calculations of the regions' economic development phases (which allowed determining regions with high dynamics of development), AHP (due to this method development scenarios were defined) and the Delphi method.

The application of the Delphi method was based on an expert survey of 30 experts on foreign trade indicators, which is the main indicator of the prospects for cross-border cooperation between Russia. The experts were provided with data on foreign trade of Russia in the period from 2002 to the first quarter of 2017 (Fig. 2 dynamics of trade with China).

According to the analysis of Fig. 2 we can talk about stable indicators of growth of foreign trade turnover of Russia and China due to both exports and imports. However, it is necessary to note the downturns in export growth (negative growth of -10.9% in 2009, -10.16% in 2013, -20.04% in 2015, and a small decline in 2016 -5.1%) and imports (in 2009 -47.04% and 2015 -35.25%). The largest increase in exports was registered in 2005 (31.02%), imports in 2011 (31.38%).

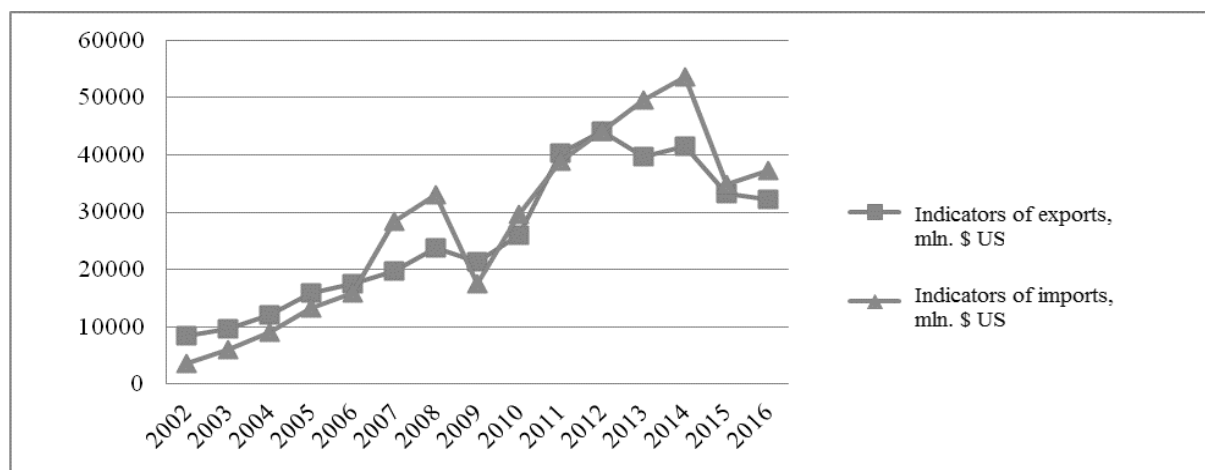


Figure 3: Indicators of foreign trade of Russia with China, Source: Rosstat and National Bureau of Statistics of China

After reviewing data on Russia's foreign trade with Ukraine and China, experts assessed the foreign trade turnover indicators by 2030 (based on the Delphi method) (Table 4). The results of the poll conducted by the Delphi methodology allow us to conclude that experts forecast a significant growth of Russia's foreign trade turnover with Ukraine and China by 2030. According to experts, the export of goods from Russia to Ukraine will increase by \$ 23,506 million or 5.57 times, Russian imports of Ukraine's products will increase by \$ 16,458 million or 5.58 times. The outlook for foreign trade with China also has a positive trend: exports from Russia to China will increase by \$ 22,662 million (or 70.3%), imports - by \$ 20,993 million (or 56.1%).

According to experts, the disruption of ties between Russia and Ukraine is temporary, as the state links socio-cultural and ethnic unity, as well as established foreign economic relations.

Figure 4 shows the "road map" for the interaction between Russia and China. The analysis of Fig. 4 makes it possible to trace the forecasted dynamics of the development of exports and imports of the Russian Federation and the PRC and to determine the time periods for the main measures ensuring transboundary cooperation, among which the following should be singled out:

1. Forum "One belt and one way". The main goals are to stimulate overall development by strengthening international cooperation, linking national strategies.
2. 2017 - the last in the framework of the Years of Exchange between the media of China and Russia.
3. A new model of cooperation: In the near future, the transition in trade and economic cooperation between China and Russia will be implemented from the model with an emphasis on scale and speed to the model with emphasis on quality and efficiency. A special contribution to the implementation of this model of cooperation can make economically promising border regions - the Amur Region and the Primorsky Territory.
4. China-Russia cross-border e-commerce is developing rapidly; it already accounts for more than 50% of the total volume of cross-border electronic commerce in Russia.
5. In May 2014, a contract was signed between Gazprom and the Chinese oil and gas company CNPC for supplying China with an "eastern route" of 38 billion cubic meters of gas annually for 30 years. The construction of the eastern branch of the Sino-Russian gas pipeline is progressing successfully, gas deliveries to China under contract can begin between 2019 and 2021 through the territory of the Amur Region, one of the most dynamically developing region of the border China.
6. The bridge across the Amur region to China will be the first cross-border railway bridge. With the introduction of a fixed bridge, according to forecasts of experts, the cargo turnover will grow 10 times: from the current 300 thousand tons to 3 million tons.
7. Yingkou Port in the Northeast of China and JSCo «Russian Railways» signed an agreement on cooperation, according to which Yingkou will become a shareholder of the TLC "Bely Rast".
8. Two agreements have been signed in the sphere of aircraft construction: one about the creation of a supernova wide-body passenger aircraft within the framework of a joint venture, the second - the creation of a civilian heavy helicopter holding "Helicopters of Russia" and the Chinese Avicopter.

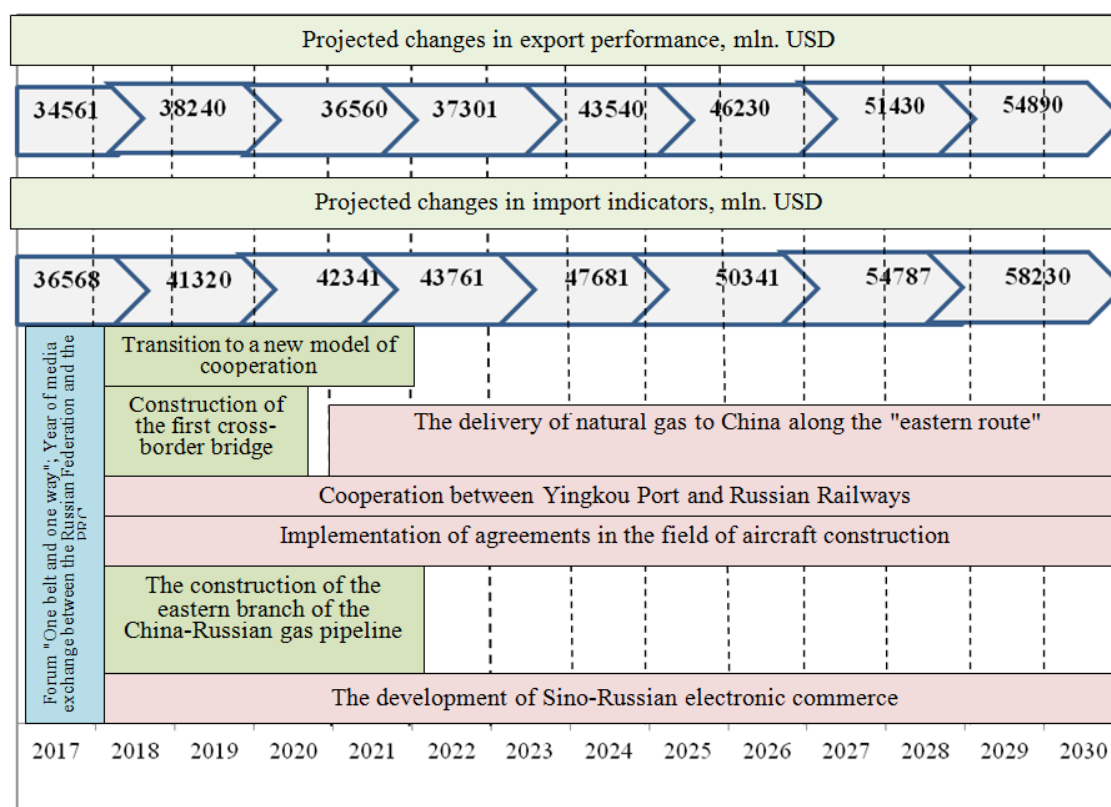


Figure 4: Roadmap for cross-border cooperation between Russia and China

The implementation of activities included in the road map will contribute to the development of the "eastern" direction of Russia's cooperation, which is the most promising in modern conditions.

## Conclusion

The rationale for the scenarios of cooperation between countries with a common border, as well as the quantitative assessment of the prospective directions for conducting and developing economic activity in the border regions, allowed forecasting the dynamics of exports and imports, identifying key measures ensuring sustainable development and risk reduction, building road maps of the prospects for cross-border cooperation between Russia and two neighbors with different political context of interaction (Ukraine and China).

Correlation of the border regions of Russia with the phases of development has been carried out, which has allowed the development of differentiated measures of sustainable development.

As a part of the strategic vector in the regional force, three directions can be chosen:

- the first is to establish a social partnership between government and business;
- the second - to ensure the development of small and medium-sized businesses on the basis of their clustering, in order to increase the share of medium and small enterprises in the gross regional product, to increase employment and tax revenues to the regional budget;
- the third direction is to increase the share of services in the gross regional product through the formation of a regional agglomeration.

However, along with all the advantages of foresight, it is necessary to note its shortcomings:

- First - the complexity of determining the boundaries of foresight;
- Secondly - the problem of realizability;

- Thirdly - the difficulty in the procedure for building development scenarios, because foresight is a mechanism of reflexive management, which includes participants in the process of shaping the desired future.

The study of foresight-design of transboundary interaction allows us to formulate the following conclusions:

- The regions of Russia with the most dynamic development (potential nuclei of cross-border interaction) include the Amur Region, the Primorsky Territory and the Xinjiang Uygur Autonomous Region, while the Trans-Baikal Territory and the Inner Mongolia Autonomous Region are also moving towards sustainable (complementary) development. The border regions of Russia and Ukraine showed relatively small opportunities for the formation of the nuclei of the transboundary region.
- The constructed road maps to a high degree reflect the prospects for Russia's development with the border regions. As a result of the research, it is established that, depending on the geopolitical situation and the level of risk, it is not possible to formulate identical strategies for interaction between regions.
- Prospects of cross-border cooperation between Russia and other countries can be predicted on the basis of foresight using a wide variety of quantitative and qualitative methods. The applied valuation technique is universal for foresight projects.

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### Brief biography of the author

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## Stimulating factors of sustainable consumption in Russia and Finland: preliminary results of empirical research

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### Abstract

*The article is devoted to analysis of the factors that stimulate sustainable food consumption on the example of low sugar products. Research methods include literature overview, desk based research of forums and blogs and in-depth interviews with 40 Russian and Finnish respondents. The axial coding revealed the most important personal and psychosocial drivers for sugar consumption reduction: success, well-being, avoidance of failure, interest and pleasure of healthy way of life, result orientations and self-development; as well as cultural and social driving factors: duties and obligations to relatives, influence of reference groups, standards of consumption, trends, and mass media.*

*The comparative analysis of Russian and Finnish samples showed that Finnish respondents more often showed structural public thinking as opposed to the opinion differentiation of Russian respondents. The author plans to develop the conceptual model of sustainable consumption, it should be tested firstly applying qualitative research methods and then by quantitative research.*

**Keywords:** sustainable consumption, consumer behavior, low sugar products

**Main Conference Topic:** Sustainability, environment and risk management

### Introduction

The term "sustainable consumption" appeared first in the Agenda 21, the main policy output from the UN Earth Summit in 1992. In 2015, sustainable consumption and production became part of the UN sustainable development program including issues of economy, society and environment. It is commonly believed that green (or environment-friendly) products made from biodegradable and recycled materials prevent harmful environmental impacts by optimizing resource use and minimizing waste generation (Diamantopoulos et al., 2003). Also, sustainable food consumption and dietary choices make an important contribution towards meeting current environmental challenges (Grunert et al., 2014). As a result, sustainable consumption and production are becoming an important means by which consumers and organizations realize the concept of sustainable development. This makes the issues of sustainable consumption modeling rather crucial.

Nowadays the consumers' attention is increasingly attracted to the food stuffs supporting healthy lifestyles. One of the aspects of the healthy eating habits is reducing amount of sugar consumed.

The aim of this study is to distinguish the stimulating internal and external factors of sustainable consumption and identify different consumer clusters on the example of low sugar food products. In the frame of this paper we present just the first part of the research.

### Sustainability of food stuffs consumption in Russia: sugar problem

Director of the Department of Public Health and Communications in Russia reports that among the main factors of development of non-communicable diseases are low physical activity and poor nutrition, where a key role is played by the excessive consumption of sugar. [14] Consumption of sweets and confectionery in Russia is at a high level. According to the survey [4], more than half of the respondents (54.6%) eat sweets every day, another third (31.2%) - from 1 to 3 times a week. 22.7% of respondents described themselves as sweet tooth, a further 31.1% of respondents partially relate themselves to this group. Thus, confectionery and other sweet products became an everyday product like milk or bread. It should be mentioned that this data reflects only the consumption of obviously sweet products and does not concern the problem of hidden sugars in different processed food stuffs that consumers are often not aware of.

The desk research showed that the problem of sugar consumption is not as widely discussed in the Russian media and RuNet as in the Western ones: only several blogs, few news media and TV channels have ever covered this problem. The most public discussion in Internet was awoken by two famous foreign movies: That Sugar Film and

Jamie Oliver's Sugar Rush. The documentaries shown mostly assume sugar as sweets and chocolate and don't pay attention to the hidden sugar in daily products.

That led to the situation that the level of awareness about sugar problem is not high among Russians. Those who are interested in reducing sugar consumption often concentrate only on white sugar and sweets neglecting added sugar in daily products. The further problem is the lacking information about the sugar contents on product packaging that prevents counting the exact amounts of sugar consumed.

However, it cannot be expected that the increasing amount of information on sustainable consumption, including promotion of low sugar products, will influence all the consumers in the similar manner forcing them to change their behavior. Factors stimulating sustainable consumption and barriers for it are researched in the following section.

### **Theoretical background and literature overview**

To develop a model of sustainable consumption and to reveal factors stimulating it we started from the analysis of classical models of individual consumer behavior on b2c markets by Blackwell and Engel (1968), Howard and Sheth (1969), and others paying special attention to modern investigations on the role of specific factors in sustainable consumption. Classical models of consumer behavior divide all factors influencing consumers on internal and external ones (Hawkins et al, 1995). External factors are divided by Kotler to cultural and social factors meaning the influence of environment (cultures and subcultures, social stratification, values and traditions) and consumer's entourage (family, friends, reference groups, opinion leaders). Viardot (2004) divides internal factors into personal factors (gender, age, occupation, personal values) and psychosocial ones (motives, perception, knowledge).

#### *Influence of external factors on sustainable consumption*

Some authors pointed out predominant influence of certain factors on consumer purchasing decisions. Duesenberry (1949) focused on the influence of social environment. Solnik and Hemenway (2011) claimed that consumers are more affected by fashion trends and reference groups. Brown, Reingen, and Kernan (1986) emphasized the word-of-mouth effect. Hopper and Nielsen (1991) wrote about the strength of normative influences. Yuldasheva (2006) explored consumer behavior within standards of consumption.

Adoption by community is among the most influencing factors stimulating consumption of green and eco products (Moisander, 2007). This influence might come from family, friends, school and colleagues (Goldstein, Cialdini, and Griskevicius, 2008), different types of opinion leaders (Kavaliauske et al., 2012), family doctors or role models like celebrities (Brace-Govan, 2012). Such tools of marketing communications as green advertising, eco labels, environmentally friendly packages and social actions are also among the important influencing factors (D'Souza, Taghian, and Lamb, 2006; Leonidou and Leonidou, 2010). Promotion of healthy lifestyle by media is also proved to have a positive influence on the choice of eco ingredients (Maynard and Franklin, 2003).

#### *Influence of internal factors on sustainable consumption*

Kavaliauske and Uzdavinyte (2013) revealed that personal factors have the biggest influence on green products purchase compared to social and cultural ones. According to Zografos (2007), gender, age, level of education, and professional activities greatly affect the formation of responsible behavior.

However, the biggest attention in this section should be paid to consumer values of sustainable consumption. Vermeir and Verbeke (2006) proved the effect of the sustainable development values on different population groups. The best classification of sustainable consumption values can be derived from the wellness concept (Kraft and Goodell, 2003). Ardell (1977) was the first to formulate them as health nutrition, physical activity, stress management, personal health responsibility, environmental concern. Personal health responsibility later transformed into the concept of health consciousness (Gould, 1990) including such factors as health motivation and health information seeking and usage. Consumers with high health consciousness and environmental concern usually are willing to choose green and eco products even despite their higher price (Michaelidou and Hassan, 2008; Hughner, 2007; Kavaliauske and Ubartaite, 2014).

Values are transformed into certain sustainable motives, e.g. need for health, disease prevention, body tone, dissatisfaction with the results of the use of traditional medicines (Pogrebova and Yuldasheva, 2015). Among other

important drivers for sustainable consumption balance between different spheres of life and reduction of consumption (Cherrier et al., 2011) should be mentioned.

### *Barriers to sustainable consumption*

To understand sustainable consumer behavior more accurately, we chose the models of adoption of innovations for the further research. Products and services that meet the requirements of sustainable consumption are evolutionary, not the revolutionary innovations as they reflect the following statements formulated by Mohr, Sengupta, and Slater (2010): expansion of an existing product or process, product characteristics are defined, markets are developing in response to consumer requirements.

A review of studies has shown that in the context of adoption of sustainable innovations the most commonly used is the model of Diffusion of Innovations by Rogers (1983) who defined the influence of consumer innovativeness as the ability to innovate faster than other members of the social system. The model of Technology, Organization and Environment (Tornatsky and Fleischer, 1990) pays attention to the government policy towards innovations as well as information infrastructure. Institutional theory (DiMaggio, Powell, 1983) reveals the pressure of the institutional environment. Such factors as pressure from market participants (competitive and partner pressure, the impact of social norms in the industry) should also be considered (Robertson, Gatignon, 1986; Sila, 2013).

Apart all of them stand the theory of reasoned action (Fishbein and Ajzen, 1975), and the theory of planned behavior (Ajzen, 1991) which assert that motivation and intention to consume are the direct factors that influence customers to undertake certain behavior.

Many researches show that when comes to sustainable consumption there is a huge difference between the declared values and actual behavior because of the existence of different types of barriers. Thøgersen (2004) tried to conceptualize them as direction and strength of values and attitudes (where these value orientations are in the personal hierarchy of values), lack of resources (time, money, access, knowledge, skills, etc.), and structural barriers (laws, regulations, subsidies, infrastructure, available technologies, social norms).

Among the most important barriers we can mention that green products are more expensive and sold in smaller quantities than the "usual" ones (Gogia and Sharma, 2012). Limited product availability and lack of infrastructure are also determined as discouraging sustainable consumer behavior (De Pelsmacker and Janssens, 2007). It is proved that for sustainable consumption consumers have to change everyday rhythm of their lives and well-established habits, which is difficult to implement in practice (Jansson, Marell, and Nordlund, 2010; Dolnicar, 2008). Lack of knowledge also might influence consumer intentions negatively (Leiserowitz, 2006). On the other hand consumer skepticism on greenwashing negatively affects the relationship between sustainable purchase intentions and behavior.

Some researches show that sustainable behavior is determined by a more holistic set of factors, which can be interpreted as a way of life (Brunso, Scholderer, and Grunert, 2004). The structure of this concept includes the established traditions of the population and daily habits that may gradually change through the provision of information and development of an attractive proposal for the market (Solovjova and Nesterova, 2015). Thus marketing can play a major role in developing sustainable systems of production and consumption (Belz and Peattie, 2012).

### *The role of low sugar products in the sustainable consumption*

Low sugar products play an important role in a healthy diet and can be undoubtedly considered in the framework of the sustainable consumption concept. However, low sugar products have certain specific features that do not allow transferring all the findings of the previous researches on eco products to this product category. Among the specific features, we should mention the individual character of consequences of excessive sugar consumption (effects mostly for the personal health and not for the environment) and a large role of well-established habits of eating. Thus, research is needed to understand the processes of promoting low sugar products as a part of sustainable consumption and healthy life style.

## **Qualitative research of the consumer attitudes towards low sugar products**

### *Research methodology*

40 in-depth interviews were conducted to study low sugar products consumption. The sample included 20 Russian respondents and 20 Finnish respondents. Judgment sampling was used for this pilot study to investigate the entire

range of views on the problem of sugar consumption. The task was to determine not the frequency of occurrence of different opinion systems (although in rough approximation the specific weights are visible even with a sample of 40 people), but a typological description of these opinion systems and their internal logic. So the socio-demographic characteristics differ a lot (men and women aged 21 to 67, students, managers, general directors and retired). The research was conducted in the period 23 April – 3 June 2017 with the help of students from St.Petersburg State University of Economics (Russia) and Haaga-Helia University of Applied Sciences (Finland). The questions focused on the attitude to sugar and awareness about its contents in the food stuffs as well as consequences of its excessive consumption. The results of the research were analyzed using open, axial and selective coding from the Grounded Theory (Strauss and Corbin, 1990).

### Research results

While researching the respondents' answers, the process of coding was carried out by the most detailed type of analysis - line analysis, which involves a line-by-line study of the transcript, the selection of various answers from it, and their subsequent semantic generalization into larger concepts - open, axial and selective codes.

The interviews revealed a wide range of attitudes to sugar – from «*Every time sugar is a bad thing*» to «*Good and useful, especially for children and the brain, gives energy and allows to deal with stress*».

The comparative analysis of the Russian and Finnish samples showed that the Finnish respondents more often showed structural public thinking as opposed to the opinion differentiation of the Russian respondents. Finns mostly reported that they aspired to follow healthy habits and had already reduced sugar usage or would like to do in the future. However, the associations with sugar named by the Finns had the same wide range as in the Russian sample. Sweeteners and «no added sugar products» seem to be not enough promoted in both countries as not all respondents associate them with a healthier option. Others fear a bad taste and harmful «*chemistry*».

All 20 Russian respondents agree that the problem of excessive sugar use needs to be discussed in media, in social advertising, in hospitals and at schools and are ready to pay a little more for the low sugar products. Also all respondents note the same problems, which can cause excessive sugar consumption: diabetes, overweight, tooth decay, heart problems. The Finnish respondents shared these views, however, showed less willingness to pay a higher price. The differentiation of answers can be caused by different personal characteristics of the respondents (demographics, values, attitudes, and lifestyles), psychosocial traits (motives, perception, emotion, knowledge) as well as cultural and social factors (the availability of healthy life style advertisement and media information and the attitude of reference groups to it, fashion trends, social norms, governmental policies, family traditions etc.). The most important drivers for low sugar consumption choices in the Russian sample were defined using the axial coding (table 1).

Table 1. Axial coding of the answers on sugar consumption reduction (Russian sample)

Open code	Axial code
Lose weight, be fit, care for appearance, be healthy	Success
Family, friends, government policy, mass media, doctors, opinion leaders	Well-being
Trends, fashion, brands, it's popular today	Avoidance of failure
Money, healthy way of life, success, well-being, no health problems	Interest
Interesting to try, interesting to participate, competition	Pleasure
Pleasure to follow trends, like to go to the gym, like the healthy habits	Results
I want to be better, I want to be fit, I want to care for myself	Self-development
I need to care for my relatives, I want my relatives to be healthy	Duties
My child should eat only healthy food	Obligations
	Reference groups
	Cultural Factors

I usually read the scientific news, I saw the advertisement	
All people now do it, to be on trend I have to behave this way	
I don't want to be fat, I don't want to get diabetes and bad tooth	
All my family eat a lot of sweets and I just follow, it's not my choice	
I read a lot of articles in the Internet about problems concerning sugar consumption, sugar influences the taste of products	

The axial coding helped revealing the following personal and psychosocial drivers for sugar consumption reduction: success, well-being, avoidance of failure; interest and pleasure of healthy way of life; result orientations (e.g. lose weight); self-development. It also helped to reveal cultural and social driving factors: duties to relatives; reference groups (family, opinion leaders, doctors); cultural factors (consumption culture, trends, mass media).

### Further outlook: quantitative research

The qualitative research helped to create a conceptual model (fig.1) for quantitative research.

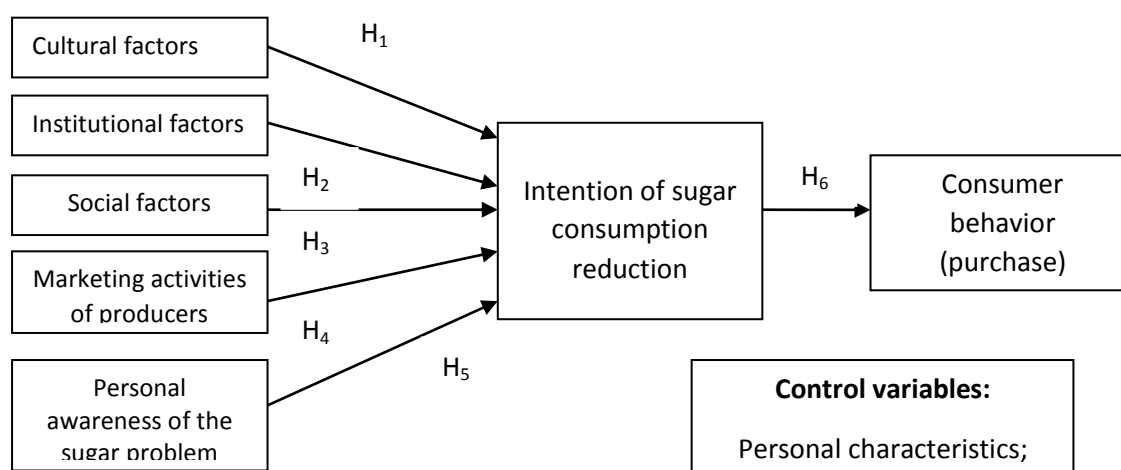


Fig.1 – Conceptual model

The qualitative research revealed the factors influencing the consumer behavior on low sugar product market. The importance of these factors should be determined with the help of the quantitative research carried out in Russia and in Finland that started in October 2017, will be finished in February. The main focus of the quantitative research is on the issues of healthy values and life styles, awareness of the sustainable eating habits and sugar problems as well as motives to reduce sugar consumption.

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## The High-Tech Sector of the Russian Economy: State and Peculiarities of Development

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### Abstract

*The state and prospects of development of the high-tech sector of the economy is largely determined by national institutional features. Therefore, invited to consider these issues at the example of a particular economy – Russian economy. The study is based on formal and dialectical logic principles. The author have used a systematic approach to the analysis of economic phenomena and processes, applied the methods of analysis and synthesis, institutional analysis methods. The status and prospects of development of high-tech sectors of the Russian economy was analyzed. Institutional features that influence the development of this sector have been identified. Based on the analysis of alternative approaches, indicators for the allocation of economic activities that are attributable to the high-tech, have been substantiated. Authors systematized statistical sources to analyze the high-tech sector of the Russian economy. The main problems of innovative development have been identified, the current state of high-tech industries in the Russian economy has been estimated. We describe the institutional preconditions for the development of this sector.*

**Keywords:** high-tech sector, innovation, Russian economy, state regulation of economy

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

Socio-economic development is closely linked with the development of technology (Bell, 1999, Clark, 1940, Lucas, 1988, Sakaya, 1991, Shrivastava and al., 2016, Szirmai and al., 2013, Tregenna, 2011, and many other). For the successful functioning of society, it must be based on an economic foundation. At the same time this material basis is continuously developing under the influence of scientific and technological progress. The used technologies are constantly being improved. In this regard, innovation and high technologies are of particular importance. Their development and diffusion can not only change the face of industry, but also the quality and standard of living of people. Under the influence of the diffusion of technologies, the international division of labor is changing, new "poles" of economic growth and influence are emerging in the world. In this connection, a more detailed study of the technological factor of economic growth and socio-economic development is required.

### Technological development is the key growth trend of the world economy

The development of the modern economy (and, to say more broadly, social progress as a whole) is largely determined by its technological level. The impact of technology on economic growth is twofold. Consider it.

*The first.* The high-tech sector itself, as a rule, develops more rapidly than GDP grows. This sector is the driver of economic growth. The accelerated growth of the high-tech sector is caused by the transformation of the demand structure. These changes relate to the demand of both the population and business. Moreover, the characteristics of these changes are different. Business makes a demand for innovative technologies (more lean, safe, productive, etc.), and the population - for innovative products and services (personal communication devices, such as smartphones, more effective drugs, smart homes, etc.).

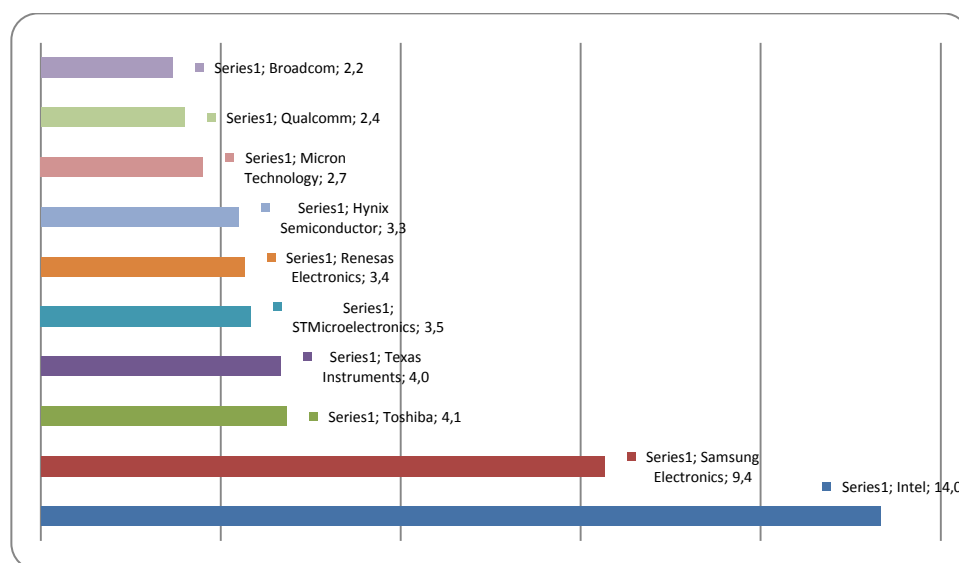
For example, from 1995 to 2007, high-tech manufacturing output in terms of Gross Value Added (GVA) registered higher growth when compared to the total manufacturing output. The growth rate of high-tech manufacturing output in the pre-crisis period is shown in Table 1. Over the period 2003-2008, the average growth rate of this sector of the economy was 10.5%. This is substantially higher than the rate of economic growth of the world economy as a whole. And in the post-crisis period, the dynamics of the development of the high-tech sector is high.

Table 1: Year-on-year growth rate of high-tech manufacturing output, %

2003	2004	2005	2006	2007	2008	Average
11.9	13.3	9.3	10.5	8.3	9.9	10.5

Source: Capgemini, 2011.

Because of its accelerated growth, the structure of the economy is changing. In addition, the high-tech industry value chains are transnational. Due to the multiplicative influence, high-tech industries stimulate the development of other sectors of the economy. This contributes, along with other factors, to the accelerated growth of developing countries (through OEM assembly, production of materials and components, offshore programming, etc.). Despite the concentration of high-tech production in developed countries (see, as an example, Figure 1), developing countries in Asia show the largest growth in production in this sector.



Source: Gartner, 2010.

Figure 1: Worldwide semiconductor market share (2010), %

*The second.* It is necessary to emphasize the influence of high-tech production not on consumption of the population (although the changes here are of a revolutionary nature), but rather on changing the technological base of industry. In the short term, high-tech consumption significantly improves people's quality of life. But in the long term, it leads to an increase in society's dependence on the production of high-tech goods and services. There may be restrictions in foreign trade, changes in the regulation of intellectual property rights, the severance of cross-border value chains, etc. In this case, the supply of high-tech goods and services will cease. This can cause not only a slowdown in economic growth, but also negative social effects.

At present, the world is on the verge of a new technological revolution. Those countries that will become technological leaders will be competitive in the future economy. Technological development and living standards are closely related. As shown in Table 2, the countries-innovative leaders (Top-10) are in the Top-25 countries in terms of living standards. In addition, technological leadership (as we pointed out earlier – Bodrunov, Plotnikov, and Vertakova, 2017) ensures the achievement of national economic security.

Table 2: Leading countries of economic and innovative development

Country Name	Global Innovation Index 2017 rankings	Rank of GDP per capita, PPP (current international \$), 2016
Switzerland	1	8
Sweden	2	17
Netherlands	3	14
United States	4	11
United Kingdom	5	23
Denmark	6	16
Singapore	7	4
Finland	8	22
Germany	9	18
Ireland	10	7

Source: Compiled by the author on The World Bank (<http://databank.worldbank.org>) and Global Innovation Index (<https://www.globalinnovationindex.org>) data.

In connection with the foregoing, it is understandable that attention given by the governments of various countries to stimulating the development of a high-tech sector of the economy. At the same time, the state and prospects of the development of the high-tech sector of the economy is largely determined by national institutional features. Further the author will consider these questions on an example of the Russian economy.

### High-tech sector of the Russian economy: state and prospects

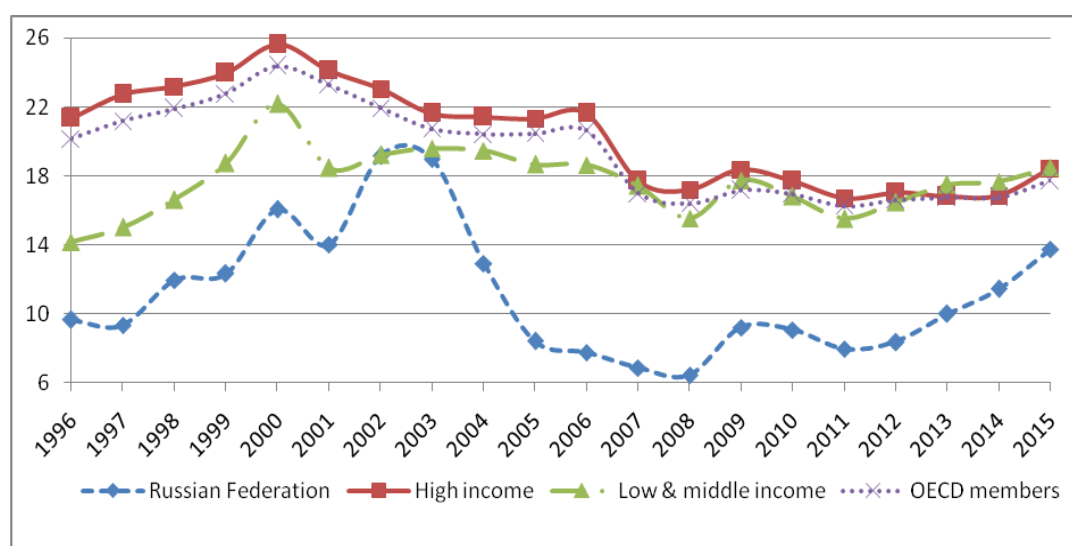
High-tech manufactures in Russia include: the manufacture of aircraft, the production of pharmaceutical products and medical products, measuring and control instruments, electronic and radio electronic products, the production of office equipment and computers. According to the available data of national statistics, the share of the high-tech sector in Russia's GDP is less than 1% (Table 3). This is significantly lower than in developed countries, where the same figure is about 2 times higher. And, for example, in the Republic of Korea its value exceeds 5%. The implementation of state programs for the development of high-tech industries is expected to increase the share of the high-tech sector in Russia's GDP to 1.3% by 2020.

Table 3: The share of high-tech industries in Russia's GDP, %

Production	2009	2010	2011	2020 (forecast)
Total, including:	0,9	0,9	0,9	1,3
Aircrafts and space vehicles	0,3	0,3	0,3	0,3
Pharmaceutical products	0,1	0,2	0,2	0,3
Office equipment and computers	0,03	0,04	0,04	0,04
Electronic components, equipment for radio, television and communication	0,1	0,1	0,1	0,2
Medical products; means of measurement, control, management and testing; optical devices, photo and film equipment; clocks	0,3	0,3	0,3	0,6

Source: Forecast of the long-term socio-economic development of the Russian Federation for the period until 2030 (developed by the Ministry of Economic Development of Russia).

The structural problem of the modern Russian economy is a high share in the output of extractive and raw materials industries. At the same time, the share of high- and medium-tech industries is low. According to the optimistic scenario, which is included in the Forecast of the long-term socio-economic development of the Russian Federation for the period until 2030, the export of machinery by 2030 should increase by 5 times and reach 10% of exports. At the same time, the share of the fuel and energy complex in exports should be reduced to 39%. Thus, the dynamics of production and exports will be based on expanding output in manufacturing industries. The growth of non-raw and non-energy exports in 2016-2030 according to the calculations of the Government of Russia will be about 8% per year. The importance of this formulation of the problem stems from the fact that so far Russia is losing in the export of high-tech goods not only to developed but also to developing countries (Figure 2, Table 4).



Source: Database of World Development Indicators.

Figure 2: High-technology exports (% of manufactured exports)

Table 4: The share of high-tech goods in Russia's exports and imports, %

	2013	2014	2015	2016	2017 (for 8 months)
The share of high-tech goods in total imports	62,4	61,2	58,7	61,3	63,8
The share of high-tech goods in total exports	10,2	10,0	12,8	14,5	10,2

Source: Rosstat.

In many respects, the observed sluggish dynamics of high-tech production is due to low investment activity in this sector (Table 5). Despite the strategic promise of high-tech development, as well as the declared measures of state support, the renewal ratio of fixed assets in the high-tech sector of the Russian economy is consistently low. Based on its average for the past 9 years, the estimated period for their complete replacement is more than 8 years. In industries where innovative development is carried out at a rapid pace (pharmaceuticals, microelectronics, bioengineering, etc.), the lack of investment in technology leads to the preservation of technological backwardness.

Table 5: Coefficient of renewal of fixed assets by sectors of the economy of the Russia, %

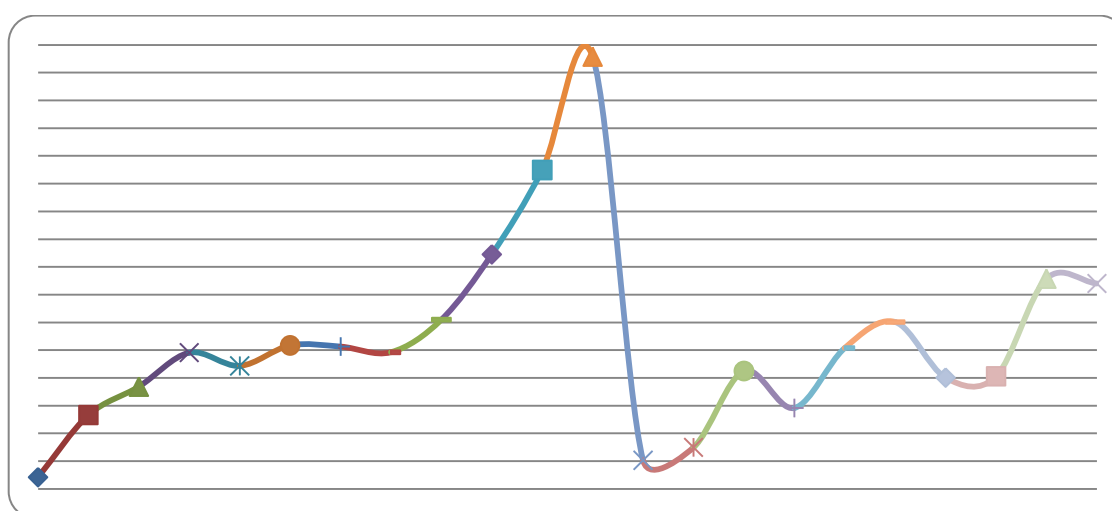
Economic activities	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average
high-tech	11,6	10,0	9,6	10,1	11,6	14,0	13,2	17,6	11,4	12,1
mid-tech high-level	12,4	12,6	12,2	11,2	13,1	12,1	11,8	13,3	12,1	12,3
mid-tech low-level	15,6	16,8	12,9	14,7	14,0	16,1	13,8	10,2	10,4	13,8
low-tech	17,6	12,9	13,3	14,3	11,0	12,9	11,5	10,4	10,5	12,7

Source: Rosstat.

As a result, the growth rates of high-tech production in Russia remain rather low. Its volume in 2016 increased by 3.0% by 2015, and for 10 months of 2017 in relation to the same period of 2016 - by 1.4%. The monthly dynamics of high-tech production in Russia (December 2015 = 100%) is presented in Figure 3. It is easy to see how much these indicators differ from the world average values, given in Table 1. In addition, the statistics indicate the high impact of the seasonal factor. The annual decline in production in January is determined by the peculiarities of the national distribution of the annual fund of working hours (long holidays associated with the New Year and Christmas in January).

Analysis of the situation for the last 2-3 years shows that the Russian economy, despite the way out of the recession, is returning to the raw material development model. Production in the manufacturing industry in general and in the high-tech sector in particular shows an unstable dynamic. The growth of world oil prices gave impetus to domestic consumption, which for the first half of 2017 increased by 3.5%. This increase in consumption led to an increase in imports (growth for the first half of 2017 by 25% compared to the same period in 2016). The trade balance fell to a 14-year low. The share of technologically innovative companies in the country is less than 1%, and there are only 1 industrial robot per 10 thousand workers (for comparison: in the Republic of Korea - 531, in the USA - 176, in the People's Republic of China - 49).

Thus, stagnation is observed in the technological development of the Russian economy. Market self-regulation processes do not stimulate the development of a high-tech sector. Therefore, more active state intervention in these processes is required. If it does not exist, Russia's technological gap from other countries will increase, which will negatively affect the level of national economic security and the quality of life in the country.



Source: Compiled by the author on Rosstat data.

Figure 3: Production index for high-technology processing activities in Russia, %

### State regulation of the high-tech sector of the economy

The neoclassical and postclassical view of the imperfection of the mechanisms of state intervention in the economy prevails in contemporary economic literature. The market economy has institutions of self-regulation. They, as the experience of many developed countries show, can work effectively. The result of this work is, among other things, stimulating innovation activity and the growth of high-tech production. We do not dispute these positions. From a theoretical point of view, it is correct.

At the same time, the author is sure that the effectiveness of the model of interaction between the state and business is determined not by the degree of its correspondence to the theoretical scheme, but by its practical results. Proceeding from this, in Russia there is a need to strengthen state intervention in the processes of high-tech development. Market self-regulation of the high-tech sector in Russia was a fiasco. This can be seen in comparison with the successes of the Soviet Union in the planned development of high-tech industries (space project, nuclear project, etc.). The effectiveness of an active state policy in the sphere of innovation and high-tech production is also proved, for example, by the experience of China.

Analysis of the institutional conditions of Russia led the author to the conclusion that the main directions of state regulation of the development of the high-tech sector of the economy are:

- Implementation of an active industrial policy, including with the involvement of resources specially created at the federal and regional levels of the Industrial Development Funds.
- Tax and customs benefits for high-tech enterprises. They should extend not only to production, but also to R & D.
- Expansion of the practice of public procurement of high-tech goods and services. In particular, this concerns the information and communication sector. A large-scale national program of "e-government" is being implemented in Russia. Its implementation gives an impetus to the development of the corresponding local productions. For reasons of ensuring information security, procurement for public needs is primarily carried out among domestic producers.
- Training of specialists for innovative sectors of the economy in the state system of professional education. Expansion of interaction of companies with state participation and state scientific and educational organizations in innovative projects for integrating science, education, technology, production.
- Improvement of the system of state strategic and indicative planning in the innovative and high-tech sphere. Stimulation and state support for the creation of industry partnerships, associations, etc. organizations. Involve them to participate in the development and implementation of state economic policy.

### Conclusion

Innovation and technological development are key factors for achieving high rates of economic growth. The significance of these factors will increase in the future. Technological leadership is the main factor for achieving competitiveness at the international, national, regional and sectoral levels. In this regard, special attention in corporate strategies and state economic policy should be given to stimulating high-tech developments and productions.

Analysis of data from national and international statistics, as well as government documents, showed that Russia occupies a modest position in technological development. Despite indisputable leadership in some areas (high-speed computing, space programs, nuclear power, etc.), Russia is losing ground in the global market for high-tech goods and services. The balance of exports and imports in this direction is unsatisfactory. It tends to deteriorate. The measures taken to stimulate high-tech industries have proved ineffective. This is due to the low efficiency of market mechanisms of self-regulation in the considered area.

To overcome the emerging import dependence of Russia in the sphere of high technology and reduce the technological gap, a revision of the national economic policy is necessary. Drawing on the experience of the Soviet Union, developed countries and new technological leaders from Asian countries, the author recommends that the approaches to state policy in the sphere of high technologies be reconsidered. This policy should become active. The state in Russia should "return" to the economy and intervene more actively in market processes using available

institutional capacities. Changes should touch on industrial, fiscal, monetary, innovation, educational, information and other areas of economic regulation.

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## Traditional Farming Practices for Alternative Tourism Development: The case of Kottayam District in Kerala

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### Abstract

Rural Kerala is known for its diverse agricultural products and practices. Equable climate and biodiversity are major resources for alternative tourism development in the state of Kerala. Farm tourism has been rapidly accepted as a strategy to conserve the conventional family farming practices, increase revenue and to showcase to the tourists, the state's rural farming life. However, there exists little documentation and research on the traditional farming practices for tourism development in Kerala. The exploratory study reported here has evaluated the importance of various traditional methods followed in different terrains and for different crops in ensuring unique farm tourism experience generating economic gains. This study analyses the way major farms in Kottayam district of Kerala have succeeded in developing a viable farm based tourism product. The study provides information on how different farms were instrumental in transforming their individual farm units into an integrated, well marketed farm tourism product. The findings are relevant to different types of farming practices and serve as a model case study for success in this niche tourism sector.

**Keywords:** farm tourism, farming practices, alternative tourism development, Niche tourism

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Farming can be used in a big way to promote tourism. It can be linked with other popular forms like Responsible tourism and Village Tourism. "Farm tourism is defined as any business conducted by a farmer for the enjoyment or education of the public, to promote the products of the farm and to generate additional farm income" (Hilchey, 1993). It includes a variety of facilities and activities such as agricultural festivals, farm visits, farm tours, demonstration farms, farm stays, wineries, nursery trails and agricultural museums. Farm tourism has been rapidly accepted as a strategy to conserve the family farm, increase revenue, and teach the public about authentic farming life.

Farm tourism, popularly known as "Agritourism is basically where agriculture and tourism intersect, as farms and ranches invite the public onto their property to experience the out of doors, the leisure pace, and the healthy and nutritious produce that is only possible when it is fresh picked at the peak of perfection." Agritourism may provide the economic incentives that growers need to keep their farms viable and to keep their land in agriculture. It also generates diversification opportunities and enhances the appeal and demand for local products and creates value-added and direct-marketing opportunities, the benefits of which may be spread across various communities in the region. Apart from providing economic sustainability and diversification opportunities, farm tourism can also be used as an excellent tool to educate the public about the importance of agriculture and its contribution to the country's economy and quality of life.

Activities on farm offer experience and opportunities to learn about the rural life and agriculture technique of the country, understand and experience the preserved tradition, calmness, peace, clean fresh environment, contact with animals and traditional farm meals (Nilsson, 2002 and Fleischer and Tchetchik, 2005). Hence, farm tourism is becoming widely seen as a means to tackle the socio economic problem of rural and agricultural sector (Sharpley and Vas, 2005).

But to build capacity and to create infrastructure and support systems in the agricultural community, Public-private partnerships are needed. This will improve the sustainability of Agritourism by helping farmers become informed, active participants who can deal with emerging issues and capitalize on the opportunities resulting from Agritourism.

### **Traditional farming practices and Tourism – Kerala Perspective**

Agritourism is the latest concept in the Indian tourism industry, which normally occurs on farms. It gives an individual, opportunity to experience the unique lifestyle of the people of the farm land. Farm tourism is considered a sub-division of rural tourism that can help generate income and employment (Novelli and Robinson, 2005 and Sharpley and Sharpley, 1997).

Farm tourism in Kerala is being developed as a relatively new tourism product. Kerala, being an agriculture dominated state, has tremendous potential for developing farm tourism in a big way without much additional investment. A growing number of farmers are turning entrepreneurs and earning big bucks from something they offered free to friends and relatives - a healthy and relaxing weekend to unwind in lush green farms, drive a tractor, ride a bullock cart, milk a cow and pluck fresh fruit from orchards.

Reports state that Kerala has 30.22 lakh hectares of gross cropped area which is 56.78% of the State's total geographical area. More than 1/3rd of the cropped area contains plantations of Tea, Coffee, Rubber, Pepper, Cardamom and Ginger, and another 1/3rd of this area is covered by Coconut plantations. The State has about 350,000 lakh hectares of land under paddy cultivation. There is a possibility of converting potential cropped areas of the state as tourist attractions with minimum intervention to transfer the benefits of tourism directly to the farmers. The various schemes underway are intended to prepare the farms/plantations of Kerala to receive tourists by presenting a positive image of the farm and of agriculture as a whole, in view of revitalizing the agriculture sector of Kerala through tourism.

Not much focus has been given to this as of now, but it can be utilized as an already existing product to promote tourism and thereby generate revenue. There is a possibility of converting potential cropped areas of the state as tourist attractions with minimum intervention to transfer the benefits of tourism directly to the farmers. From conducting farm tours to enabling tourists to be a part of the daily activities in the farm, from showcasing and selling farm produces, to offering visitors a taste of the local cuisine, Farms in Kerala helps generate additional income from plantations.

The Government decision to allow 5% of the farm area for tourism purpose has been an encouraging factor for the tourism industry. Numerous projects are being planned by the state to prepare the Farms/Plantations of Kerala to receive tourists by presenting a positive image of the farm and of agriculture as a whole, in view of re-vitalising the agriculture sector through tourism and increasing tourist traffic to the state.

Farm tourism, once a small niche, is expanding rapidly and getting a big push from the tourism ministry. Tour operators, including some who were farmers to begin with, are aggressively pushing farm tourism in India and abroad. They are attracting tourists from prosperous Punjab to scenic Munnar with packages of Rs. 500-10,000 for a day in the lap of nature. Farms would be the major place of interest for tourists as it emphasizes the value of utilizing organic methods of growth, natural environment-friendly methods, like composting, instead of relying on pesticides and fertilizers unless necessary.

### **Farm Tourism as a source of alternative tourism development in Kottayam**

Kottayam district in Kerala is bordered by the lofty and mighty Western Ghats on the east and the Vembanad Lake and paddy fields of Kuttanad on the west. Unknown to many, Kottayam possesses a variety of rural resources and geographical diversity within a small area of about 2208 sq. kms. The district is naturally divided into high land, midland and lowland, the bulk being constituted by the midland regions. Meenachil and Kanjirappally Taluks have high land and midland areas while Kottayam, Changanassery and Vaikom Taluks have midland and lowland areas. The city is also an important trading center of spices and commercial crops, especially rubber. Most of India's natural rubber originates from the acres of well-kept plantations of Kottayam which in itself is a treat to the eye of an outsider.

Bordered by more popular destinations Ernakulam and Alappuzha and lacking any iconic attractions, the unique combination of rural tourism, village tourism, farm tourism and responsible tourism are more suited for tourism development in the district which is slowly gaining popularity as the RT hub of Kerala.

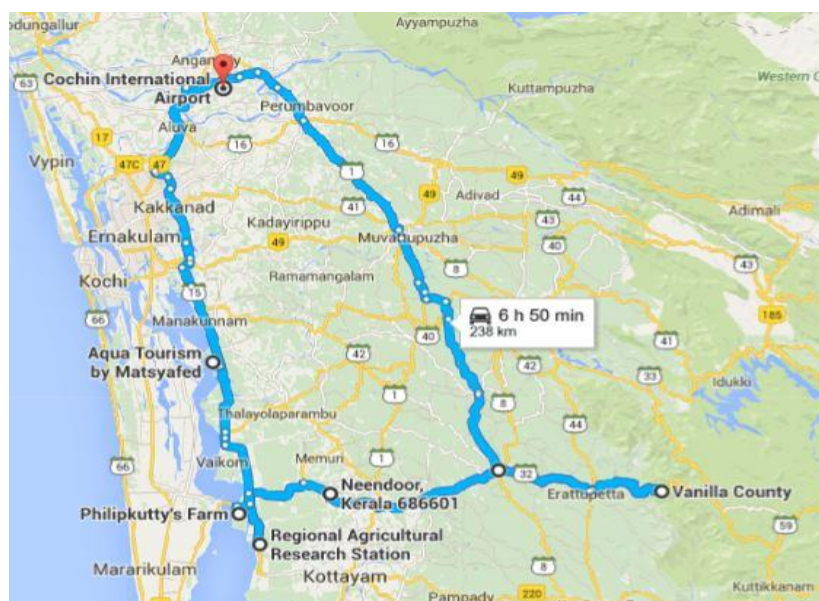
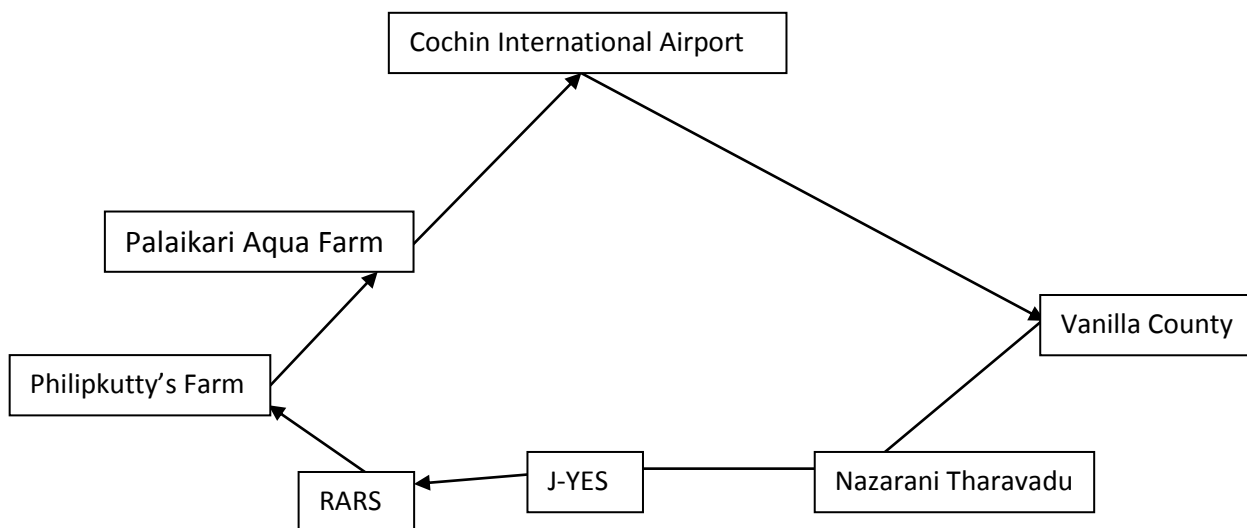
### **Methodology**

Kerala is known for its traditional farming practices. For some time now these practices have been used to promote tourism in a big way. Because of the complexity of the topic of farm based tourism entrepreneurship, there is a need

for in-depth studies using interviews and observations (Haugen and Vik, 2008). Hence the exploratory research method adopted for this paper employs a case study design involving three key criteria – First, that the research is limited to tourism attraction businesses run independently by a farming family or by clearly identifiable family members as opposed to large scale Agribusiness Corporation. The second, that the geographical location was limited to Kottayam district only. And finally, that the sample also includes public enterprises with an objective to help the farmers through research and education at the same time engaging in tourism activities. Contact was made with the farms identified as meeting the research criteria and face to face in- depth interviews arranged with farm owners, employees, the tourists and the local community. Subsequently on –site visits to these farms were arranged.

Altogether six cases were sampled including two traditional farms, one Agricultural Research Centre and one fish farm owned and run by the government in line with the concepts of farm tourism and two homestays attached to farms. As homestays are often attached to farms and form a unique tourism product of Kerala, we decided to collect information from home stays also. Secondary data was collected from books and journals and also from the websites of these sites and corroborated with the findings of on-site visits and interviews.

### Sample Distribution:



## Background research

The existing literature on the topic can be broadly classified as i) those dealing with the traditional farming practices and Agritourism/farm tourism ii) those working on the principles and practices of traditional and organic farming, iii) those which study different ways to earn extra income from farming.

A gradual transition from modern to traditional/organic agriculture has been accepted the world over as the only solution for overcoming the present crisis in agriculture. A study conducted in the European Union suggests the importance of local specificity in the context of the type of agriculture practiced regional policies, etc. and signifies the need of different regional models for rural tourism. Supportive literature augments the popularity and spread of the traditional farming practices and farm tourism in rest of the world.

The term Agritourism is used to describe nearly any activity in which a visitor to the farm or other agricultural setting contemplates the farm landscape or participates in an agricultural process for recreation or leisure purposes (Fleischer & Tchetchik, 2005; Ilbery, Bowler, Clark, Crockett, & Shaw, 1998; Veeck et al., 2006). Agritourism is usually understood to take place on a working farm or other agricultural setting and to generate income for or add value to the farm (Barbieri & Mahoney, 2009; Ollenburg & Buckley, 2007; Phillip, Hunter, & Blackstock, 2010).

Agritourism is suggested to produce many benefits for farms, their operators, the surrounding communities, and society overall. There is a positive attitude among the stakeholders towards introducing farm tourism in rural areas, as is a general belief, and rightfully so as researches have proved, that blending the two industries may alleviate local issues, like labor shortages in tourism and market shortages for the farmers (Andereck & Vogt, 2000; Torres & Momsen, 2004). The positive influence of agritourism on-farm family income may also be combined with the contribution the business makes to the local community via sales taxes, local employment and stimulation of local businesses such as restaurants and shops (Barbieri, 2009; Saxena, Clark, & Ilbery, 2007; Sharpley, 2007; Veeck et al., 2006).

Frater (1983) recognized that Farm tourism is not a new phenomenon in Europe. In certain parts of Europe, it existed as a recognizable activity for over a hundred years; Frater (1982) also identified a number of changes in British agriculture over the last 50 years: a declining labour force, changing farm structure, increased intensification and specialization of farming activities, together with a decline in farm income. Thus farm tourism has been primarily developed for its economic benefits and represents a symbiotic relationship for areas where neither farming nor tourism could be independently justified (Inskeep, 1991);

Elson, Steenberg and Wilkinson (1995) add that the two primary concerns of the farmer have been to: generate additional income and provide economic benefits to the local economy. There has been continuity in farm tourism research since the early 1960s, with key studies by Bull and Wibberley (1976) and Clarke (1996a) who argued that agriculturalists view tourism as a category of farm diversification whereas tourism researchers consider it to be a sector of rural tourism in its own right. Dartington Amenity Research Trust (1974) and Davies and Gilbert (1992) identified similar components, segmenting farm tourism into three distinct categories, viz. accommodation-based, activity based, and day-visitor based whereas Ilbery et al. (1998) distinguish between accommodation and recreation enterprises. Clarke (1996b) believes this transition has changed the emphasis from tourism on a farm to 'farm tourism' where the tourist component is a main-stay of many farm businesses.

Further literature contains a range of comments on the value of farm tourism: Worth (1997) reports that one farmer who established a tourism business in 1989 considers it is now more reliable and better than their traditional farming activities. The tourism side of the farm tourism business developed to such an extent that income from tourism now outweighs that from agriculture. (Roberts, 1992) Farm tourism has evolved to the point where it is recognized as a product in its own right; as Hoyland (1982) observes, although tourist facilities. Bowen, Cox and Fox (1991) argue that a tourism activity will be considered agriculture based if the landscape is maintained by the farmer.

The family farm is not only a home, but also a business. Opening a working farm to visitors offers a secondary revenue source, but only if the farm's capacity and market demand is sufficient to offset the increased costs (Wilson 2007). Well-designed and well-managed farm stay enterprises potentially provide social and economic benefits to both farm families and local communities (Ollenburg & Buckley 2007). Developing a farm tourism business should be designed from the customer's perspective (Nickerson, Black, & McCool 2001).

The demarcation between farm tourism and rural tourism is somewhat hazy. Nilsson (2002), in his work on farm tourism, defines it as a subset of rural tourism. According to Nilsson, rural tourism is based on the rural environment in general whereas farm tourism is based on the farm and farmer. This means that within the framework of rural tourism, farm tourism enterprises are more closely related to agriculture than other rural tourism operations. Clarke (1996) elaborates further and claims that there is a difference between tourism on farms and farm tourism. Busby

and Rendle (2000) claimed that the link between farm tourism and agriculture is getting weaker. Farmers who became engaged in tourism on their farms as an alternative source of income to agriculture, slowly divorced themselves from agricultural activities. According to Busby and Rendle (2000), with this transition the farm activities are no longer a necessary component. It seems that many researchers agree that the role of the farm and farmer is to supply the background that provides farm tourism with its unique features (Pearce, 1990; Nilsson, 2002).

Research into Agritourism from stakeholder perspectives beyond the farmer should also be considered. A great opportunity exists for future research exploring the Agritourism industry from visitor and stakeholder perspectives. The marketing methods used to promote farm offerings, as well as the offerings themselves, could be strengthened with the support of academic research on the motivations of farm visitors. Busby and Rendle (2000) emphasize the demand-led nature of farm tourism and the fact that the specific place of tourist consumption acts as an integral part of the overall tourism product and is essentially the primary 'pull' factor. Farm-based tourism is therefore inseparable from experiencing the farm setting and the context of rurality as a whole. In this way, tourism holds the potential to allow visitors to obtain the 'feel' of the rural environment and create their own understanding of the farming way of life.

## Case studies

### 1. Vanilla County

Set amidst 150 acres of rubber and other spices gardens, Vanilla County is a 65 year old stately estate bungalow. Basically a homestay, Vanilla county offers apart from a unique stay experience set amidst the picturesque plantations of vanilla, pepper, coffee and rubber in an area that comes under western ghats or sahyadri mountain ranges - a proclaimed ' UNESCO ' World Heritage site and one of the eight hottest hot spots of biological diversity of the world.

Apart from trekking, Plantation and Spice Tours, Tea Plantation Visit, a variety of typical Kerala delicacies and other Indian dishes are served to the visitors. The spices and vegetables used are organically grown on the estate. The fresh filter coffee served from the estate's own plantations is the perfect brew. While bottled mineral water is available, guests also have an option to drink genuine mineral water from natural springs of the mountains, filtered. Tented Accommodation is provided if requested on the property of Vanilla County. Though initially a plantation, it is now focused more on tourism than farming.

### 2. Nazrani Tharavadu

Nazarani Tharavad (Christian Ancestral Home) is the ancestral home of the Kottukapally family. The Kottukapally family's roots date back 2000 years. The ancestral home of the Kottukapally family, build in the AD centaury the blend of Dutch and Spanish architectural style over the period of 250 years ago. Mr. John Thomas Kottukapally, one of the famous planter in Pala and his family follows traditional farming practices that was introduced by the British planters during they rule in India. Many of foreign tourists prefer to stay and learn about the traditional farming practices in the Rubber and Tea plantations. Nazarani Tharavadu gives guest "A thrilling experience" through authentic Malayali cuisine. Guests can watch the demonstration of making Syrian Christian cuisine, if they request for it. Here again we have an example of farming activities having secondary importance to farming.

### 3. J-YES Farm

J-YES Farms is located at Neendoor in Kottayam district, belongs to Mr. Joy Lukose Chemmachel . J-Yes farm, uses the organic farming concept. They use multiple farming techniques s such as Agricultural, Animal husbandry, Dairy farm, Fish farm, Grass farm, Medicinal plants farm, Organic farm, Poultry farm & Vegetable farm. Their vision is to give a public awareness to the society that, each & everyone should have a Vegetable farm in their own house.

The farm also has a Plant nursery, Landscape Garden and an added attraction - An agricultural museum which comprises of old & traditional farming implements and household objects. The farm also boasts of a wind mill which produces 5000 watts of electricity which covers most of the electricity needs of the farm. Within the farm they have Banana Plantation, Coconut Plantation, Paddy cultivation, Nutmeg Farm and vegetable farm which produces a variety of local vegetable in an organic way. People can purchase fresh vegetables directly from the farm's outlet.

The presence of animal farm, poultry farm and fish farm and cattle makes it an action packed farm which is self-sufficient by itself. The cattle feed is cultivated in the paddy fields, the animal waste is used to create energy required

for the farm like bio-gas, slurry from the biogas produces and electricity. The labour employed is mostly that of local people.

#### **4. Philipkutty's Farm**

Philipkutty's Farm is located in Vechoor, Kottayam district and is well connected by road up to the river bank. From there the visitors are taken to the farm house on a canoe we have to take a boat/canoe to cross the river to the home stay and farm.

The farm is located on a small island called Puthukayal (750 acres approx) in the back waters by Vembanad Lake near Kumarakom. The total area of the farm is 35 acres. It's the largest farm on the island. The island property is a reclaimed property built in the early 1950's. The running of the farm was taken over by Mr. Anu Mathew after the demise of her husband. Mrs. Aniamma, (Mother in law) of Ms. Anu Mathew is a strong support to her and complete responsibility of running the establishment is shared by the two with very active support of the local community. She is a great motivation to womenfolk of the area as farming is still considered a males bastion in the rural areas of Kerala.

Being a reclaimed property typical of the Kuttanad or backwater region, the farm is approximately 2metres below the lake level. The retaining dyke around the perimeter of the island keeps the lake water from entering the farm. Being below the lake level, all the rain water is pumped out especially during the monsoon season by using an electric motor and pump. The farm is made up of ridges and canals and planting done on the ridges. The major crops on the farm were coconut, toddy tapping, nutmeg, cocoa, banana, pepper and many other fruits, vegetables and spices. The farm also has a few cows, geese, ducks and hens.

#### **5. Matsyafed Palaikari Aqua Farm Tourism**

Palaikari aqua farm is located at a distance of 22 km from Cochin and 12 km from Vaikom; the 125 hectare wide brackish water fish farm with 4 culture ponds and 3 nurseries, come under Chempupanchayath, Kottayam. This farm is owned and run by Kerala state co- operative federation for fisheries development ltd. The farm lies inside the Vembanad Lake. Palaikari aqua farm is famous for the traditional fishing practices. The entry fee ticket costs Rs 200, it includes 1 meal, fish curry, and fry, fish pickles, ice cream. Activities like fishing, Pedal boating, Hammocks and Swings engage the people visiting the farm. Children below 12yrs can have the same facilities for Rs 100. An evening visit cost Rs 25 from 4 pm to 6 pm. A bund between shady coconut trees connects the fish farm from the entry. Also there are boat services available to reach the fish farm (ChemmeenKettu).

#### **6. Regional Agricultural Research Station (RARS)**

Located in Kumarakom was established in the year 1947 with the financial support of the Indian Central Coconut Committee in order to cater to the research needs of coconut in the reclaimed alluvial soils of Kuttanad. With the establishment of the Kerala Agricultural University in 1972, the Coconut Research Station became one of the constituent institutions of the University. In 1982 the station was upgraded to the status of a Regional Agricultural Research Station (RARS) under the National Agricultural Research Project (NARP) funded the IBRD/ICAR with the mandate for research on crops and cropping systems in the Special Zone of Problem Areas comprising 'Kuttanad', 'Pokkali' and 'Kole' tracts.

RARS, Kumarakom is the lead station for the zone. It has five satellite stations viz., Rice Research Station, Moncompu; Rice Research Station, Kayamkulam; Rice Research Station, Vyttila; Sugarcane Research Station, Thiruvalla and AICRP on Agricultural Drainage, Karumadi. Classes are taken for the tourists on organic farming and tourism activities promoted.

#### **Findings and Suggestions**

Farm tourism is in its nascent stage in many parts of Kerala. The distinct topography of Kottayam is suitable to promote farm tourism and realize its full potential maximizing revenue generation. Farm tourism coupled with a unique cultural blend of homestays are gaining popularity but most of the stakeholders involved are operating on different levels without any cooperation among each other. The government needs to put in concerted and planned efforts to develop and thereby realize full potential for this avenue of tourism. A great deal of research needs to be done and successful models from other parts of India and the world needs to be studied in detail and replicated wherever suitable.

Since almost all of these farms employ local products and local community laborers, there is wholehearted support and cooperation of the local people and if the government also chips in it can co-operate and compete with each other in a healthy way.

Organic farming and traditional farming methods can also get a boost and can be linked with tourism to get economic sustainability and together these can provide a common platform for further research and sustainability along with the much needed revenue and employability.

Farm training circuits can be developed to give a more viability to such projects. A good marketing strategy is also required at the policy makers' level to uplift these farms from relative obscurity.

## Conclusion

In farm tourism, the tourist activity is closely intertwined with farming activities. All the activities undertaken by the tourists are solely focused on the main playground of farming. After visiting 6 destinations of our project, we learn about the hardships of the local people on how much effort they put into using and maintaining the traditional farming methods. Due to the ever increasing modern facilities available in the market, farm tourism is trying hard to make its place in the tourism industry. But, we can still see a good amount of tourists interested in learning about the traditional practices and the local lifestyle.

Even though the number of traditional farming practices is less, some farms have shown keen interest in following the traditional methods. They adapt these practices in their farms to ensure the authenticity of the product. Traditional agricultural tools were economical in terms of labour, money and time saving. These tools were made up of locally available materials like stones, wood, etc. Traditional tools are operated easily without any special skills. The challenge lies in using these tools to reproduce the scales of modern technology.

In all our case studies we realized that some of the farmers are using the traditional farming practices for getting quality products. And the foreign tourists are much more interested in the traditional way of farming. The above sample destinations are closely related with tourism activities. Each of the destinations is offering varied products and possesses different atmosphere. Kottayam as a place has a high potential of being a pioneer in farm tourism within the state. Through this project, we found that a Farm Tourism Circuit can be developed and use it as a tourism package.

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## Utilization of Online Marketing in the Tourism Industry of Kerala

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### Abstract

*Increasing popularity of online business (E-commerce) and website users plays an important role in changing business scenarios. The success of online business is much dependent on the traffic (website traffic) that the E-commerce websites can pull in. Discovering the relationship between website traffic, domain age, and Google indexed pages can help the E-commerce sites to plan their actions to accommodate growth and dominance on web. Though designing the right strategy to capitalize online market in a specific category is vital, due to increasing competition and changing trends it becomes challenging. Exploring the trends in strategies for pulling in traffic by categories of websites can further help the online tourism firms to understand the segment tactics for their business. In this paper I have done Exploratory Analysis to identify the utilization of online market of tourism in India. I made use of the data gathered from web analysis tools such as SimilarWeb, SmallSeoTools, and Pinger on 10years conveniently picked websites from India. The study was trying to explore the differences in tour operators, tour aggregators and hotels with respect to year wise touring categories. The results thus obtained clearly demonstrate that utilization of Directory Listing, Website, Social Media, Online PR, Online booking parameters has weak impact on online marketing of tourism. There is a significant difference in social media traffic, and referrals traffic with respect to website categories.*

**Keywords:** directory listing, website, social media, online PR, online booking, tour operators, tour aggregators and hotels

**Main Conference Topic:** IT-Challenges and Solutions

### Introduction

Tourism has been a major social phenomenon of the societies all along. It is motivated by the natural urge of every human being for new experience, adventure, education and entertainment. The motivations for tourism also include social, religious and business interests. The spread of education has fostered a desire to know more about different parts of the globe. The basic human thirst for new experience and knowledge has become stronger, as communication barriers are getting overcome by technological advances. Progress in air transport and development of tourist facilities have encouraged people to venture out to the foreign lands.

The World Wide Web (WWW) and its usage are constantly growing. Business firms have to value the considerable rise in the number of internet users, growing acceptability of online payments, the proliferation of Internet-enabled devices and favorable demographics are the key factors driving the growth story of E-Commerce (Upasana & Rebello, 2014) in India. As online business grew faster, the competition increased on the Internet (Tilahun, 2013) with diverse net warfare techniques (Demetew & Ayalew, 2011). With World Wide Web, business enlarged the growth possibilities and opened up new opportunities. There is now doubt that internet and E-Commerce has become a major tool to gain competitive advantage (Esichaikul & Chavananon, 2001).

As noted by Huff et al. (1999) the web traffic of a website increases and offers popularity to E-Commerce operations. The studies on web activities had shown proven methods of creating web traffic to a website. Search Engine Marketing is a popular method today for promoting websites to increase web traffic (Al-Badi et al, 2011). There is a popular belief among the bloggers and web marketers that older domains do better in search results and are given extra favor due to their age (RapidWebSeo, 2014). Some also believe that the number of Google indexed pages can also impact the flow of visitors to a website. The role of indexed pages (Getahun, 2014) in bringing in new traffic cannot be undermined (Tilahun, 2013). Search Engine Marketing is incomplete when one undermines the importance of Google indexed pages.

However, domain age and Google indexed pages, and their effect on website traffic is a matter to be analyzed in Indian scenario. When some of the scholars thoroughly argue that the number of indexed pages can bring more traffic to a website, some others argue that there exist no direct relation between the number of indexed pages and the amount of traffic you receive (XDRange, 2013). If it is not the domain age and the number of indexed pages, it

could be the paid promotions (Demetew & Ayalew, 2011). Any traffic that is paid to obtain (Elder, 2015) can be considered as paid traffic. Though the major share of website traffic through search engines originates from organic (natural) rather than sponsored (paid) links (Baye et al, 2014), we cannot underestimate the role of referrals, paid searches, social media ads and display ads.

Thus this study was aimed to understand the relationship between total yearly utilization for ten years. We also devised the study to analyze and identify the difference in Directory Listing, Website, Social Media, Online PR, Online booking, Tour operators, Tour aggregators and hotels.

### **Directory Listing**

Domain age is almost synonymous to the website age, though they are not the same. According to BrickMarketing (2014) domain age refers to the length of time that a website has been registered and active. Smarty (2008) opines that website age (and its backlink profile age) is what really matters. It is noted that old domains do have importance but when an established domain is resold it changes its value as the content and style of operations change. Yet again, it has to be noted that Google records the date on which a domain is registered. Google uses domain name data for improving their search algorithms and this surely indicates that the search results can be influenced by the domain age.

### **Website**

A website's contents to be the part of search results, they have to be included in the search engine's index like Google index, Bing index, etc. The page index is similar to an index in a library, which lists information about all the books the library has available (Google -a, 2009). As a visitor searches Google or a similar search engine, the search is performed on the Google index rather than the web (WWW). Most large-scale web authoring and indexing programs (Browne and Jermey, 2004), such as for Google and Bing, use specific algorithms and procedures that allow concentrating on web content and provide the most appropriate results as a user searches. This also means that to have website's rank within Google, one must make sure that the site is in Google's index (Cashman, 2013).

According to Hines (2012) when indexing, the information provided on a website is gathered by is gathered by Googlebot from its crawling activities. Googlebot is Google's web crawling robot and crawling is the process by which Google's bot discovers new and modified pages to update the Google Index (Google -b, 2009). Google also offers an index status report that gives data about the URLs that Google tried to index (Google -c, 2009). However, there are different ways to make a website noticed by Googlebot. Creating sitemaps and submitting it to search engine's webmaster tools is one of the most significant techniques.

### **Social Media**

A page view or a page impression is an instance that an internet user visiting a specific page on a website (Johnson, 2015). A website can have many visitors and the total number of unique visitors to a website during a specific period is termed as total visits. Every visitor may view one or more pages of a website. Page views per visit represents the average number of page views per visit over a given time period (Johnson, 2015). Finding the product of total visits during a month and average page views during that month can give us total monthly page views. There are many factors that can influence a website's total monthly page views (Tilahun, 2013) which may include Google indexed pages, domain age, paid promotions, etc.

### **Online PR**

Traffic is the key to the success of most websites (Information Resource Management Association, 2012). Visitors from search engines account the major share of any website's traffic. Search engine traffic or search traffic implies to the visitors who reaches at a particular website by clicking the results of their searches. When a website shows a high volume of search traffic, it is generally a positive thing for that website (Technopedia, 2012). A website's search traffic includes organic search traffic and paid search traffic.

Organic search results or natural search results are links resulted by a search engine that most closely match the user's search query based on relevance (Dummies, 2011). Organic traffic or organic search traffic is the flow of visitors from search engines to a website without spending on getting the traffic by the website. Organic traffic deals directly with Search Engine Optimization (Macey, 2016). the major share of website traffic through search engines originates from organic (natural) rather than the paid links (Baye et al, 2014).

Another way of obtaining traffic is through the paid links that appear in top or side ads (Baye et al, 2014). The website owners cannot influence the position of links and style of links when it comes to the organic search results. However, the website owners can sway the position links which are displayed in the case of paid listings. The traffic originated from search engines after paying for it is generally termed as paid search results of paid search traffic.

According to Brecht (2014), both organic search results and paid search results have unique advantages and disadvantages to them. When organic search's benefits include trust and credibility, ranking, and economic benefits, paid traffic is quicker and they can be focused for a target group of viewers. Selection of choice between organic and paid depends upon the organization. The types of web business can also influence the choice between organic and paid (Demetew & Ayalew, 2011) results.

### Online booking

When thinking off from the search engine traffic, websites have many choices still. Though search engine traffics account a major share in most cases of websites, direct traffic cannot be underestimated. This is the traffic that is generated without the intervention of any referring sites. Visitors through direct traffic manually enter the URL of the website or have it bookmarked (Macey, 2016). Though direct traffic does not use a referral site, it cannot be assured that the traffic completely free from paid sources (Getahun, 2014). Direct traffic can be obtained through paid promotions such as advertisements other than online advertisements, existing customers, employees, bouncing back visitors, etc.

Referral traffic is quite different from that of the direct traffic in a way that the referrals are a sort of recommendations from a different site other than search engines to a specific website. As a visitor clicks on a hyperlink to go to a new page on a different website, the action is considered as a referral visit (Bashara, 2012). Many websites such as amazon.com uses the tactic of deploying referrals to bring in their visitors. As narrated by Demetew & Ayalew (2011), the utilization of referral sources can also be based on the category of website.

When websites uses social sources such as Facebook, Twitter, YouTube, and similar to pull in traffic, the traffic generated is regarded as social traffic. According to Josh (2013), almost 26% of traffic is generated from social sources. Interestingly, those who spring in from social sources may or may not know what site they are landing on (Josh, 2013). Similarly, the direct marketers' most favorite tool is e-mail marketing (Willcocks, 2015), which ultimately brings in mail traffic. According Wainwright (2013), when campaigning through e-mail marketing, the campaign is expected to include a link in that email which inspires and lead recipients to a specific website. The purpose of pulling in traffic could be to read more content, or to convert a reader to a buyer, or to take an action. Email is not dead, nor will it be anytime soon (Newman, 2015), and that makes traffic from emails important too.

Display traffic or display advertising traffic includes the visitors who reach a particular website from display advertisements online. According to SimilarWeb (2014), it is not easy to keep track of different display advertisement campaigns, especially if they're spread out among multiple platforms and websites. However, there are analytical tools including SimilarWeb to study the traffic flow from display ads. There are many factors that affect the success of a display ad in generating traffic, including the attractiveness, position, and size.

### Significance

There are studies performed on similar areas by many scholars and academicians to explore the factors that can influence the traffic of websites. Some of the researches like that of Al-Badi et al (2011) had shown the importance of search engine optimization and marketing. However, most of these researches were conducted either from the search engine point of view or from customers' point of view. In this study, we are trying to identify any significant relationship between the traffic, domain age, and Google indexed pages. The study also evaluates the difference in traffic behavior between the categories of websites. By emphasizing on Indian websites, the study is able to localize the scenario and is relevant for E-marketing professionals and E-commerce firms. Having knowledge about the traffic differences between categories, and relationship between traffic, domain age and Google indexed pages can

help practitioners plan and strategize their online presence while for academicians this can offer relevant information for understanding the web behaviors and characteristics of traffic.

## Methodology

There are many users, webmasters, and scholars who believe that domain age and indexed pages do have a greater role in attracting high volume traffic to a website. For this study, we are using data related to conveniently select 60 Indian websites to analyze the relationship between total monthly page views, domain age, and Google indexed pages. The study tried to describe the differences in traffic flow from paid and unpaid sources with respect to different categories of websites.

The data was collected from SimilarWeb<sup>29</sup>, SmallSeotools<sup>30</sup>, and pingler<sup>31</sup> with respect to the 60 selected Indian webpages from different categories. The websites were categorized into shopping, news, banks, and others to study the differences in traffic behavior. The research used cross-sectional study design and data analysis.

The data thus collected were analyzed to answer the following questions:

- Is there a statistically significant relationship between total monthly page views, domain age, and Google indexed pages?
- Based on website categories, is there a statistically significant difference in average Organic search traffic, Paid search traffic, Direct traffic, Referrals traffic, Mail traffic, Social media traffic, or display ads traffic?

The study used multiple linear regression to analyze the relationship while ANOVA to perform analysis of variances.

## Findings and Results

To enable a common platform, websites with less than a million monthly unique visits were replaced with those websites that possess 1 million or higher traffic during 2016 and 2017. The websites that could not produce data in any of the variables were removed and only those websites with complete data were included. However, there were no restrictions planted on any other variables other than website traffic.

## Relationship between Tour operators, Hotels and Tour guide

For studying the extent of utilization of online marketing in the tourism industry of Kerala, the researcher adopted Kochi as the study segment and gathered data from tour operators, hotels, and tour aggregators. A questionnaire survey was deployed among 15 tour operators, 30 hotels and 5 tour aggregators in the city. The segmentation was done based on the information collected from the tourism department officials stating that “considering the three players as a whole sector, tour operators occupy 30%, hotels 60% and tour aggregators 10%”, in Kochi.

This is an exploratory study where the researcher is trying to explore the basic parameters and their relevance in the context area. For deploying the study, the researcher used online directory listing, website deployment, social media presence, online public relations, and online booking as the parameters to assess the extent of utilization of online marketing in the tourism industry of Kerala. The data was collected from the past 10 years and was analysed.

COMPLETE DATA											
Years		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Tour Operators	Directory Listing	2	6	8	10	10	10	13	15	15	15
	Website	2	4	8	10	10	10	12	12	14	15

<sup>29</sup> <https://www.similarweb.com/>

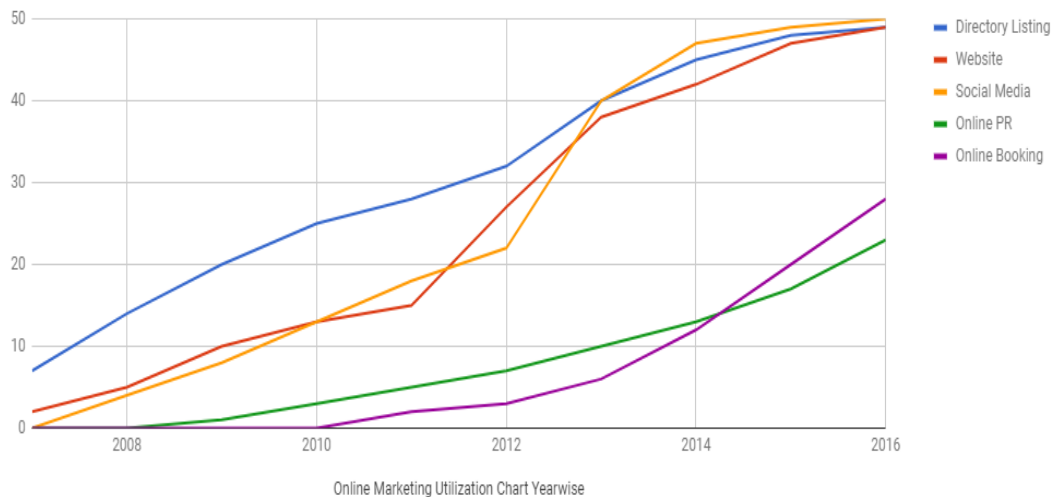
<sup>30</sup> <http://smallseotools.com/domain-age-checker/>

<sup>31</sup> <https://pingler.com/seo-tools/tools/google-indexed-pages-checker/>

	<b>Social Media</b>	0	1	3	6	10	12	14	15	15	15
	<b>Online PR</b>	0	0	0	0	0	2	3	5	6	7
	<b>Online booking</b>	0	0	0	0	1	2	4	6	7	9
<b>Hotels</b>	<b>Directory Listing</b>	5	8	12	15	18	22	26	28	29	29
	<b>Website</b>	0	1	2	3	5	17	25	28	29	29
	<b>Social Media</b>	0	3	5	7	8	10	25	30	30	30
	<b>Online PR</b>	0	0	1	3	5	5	7	8	9	12
	<b>Online booking</b>	0	0	0	0	1	1	2	6	13	19
<b>Tour aggregators</b>	<b>Directory Listing</b>	0	0	0	0	0	0	1	2	4	5
	<b>Website</b>	0	0	0	0	0	0	1	2	4	5
	<b>Social Media</b>	0	0	0	0	0	0	1	2	4	5
	<b>Online PR</b>	0	0	0	0	0	0	0	0	2	4
	<b>Online booking</b>	0	0	0	0	0	0	0	0	0	0

#### Relationship between Tour operators, Hotels and Tour guide

Yearwise Online Marketing Utilization Chart										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Directory Listing	7	14	20	25	28	32	40	45	48	49
Website	2	5	10	13	15	27	38	42	47	49
Social Media	0	4	8	13	18	22	40	47	49	50
Online PR	0	0	1	3	5	7	10	13	17	23
Online Booking	0	0	0	0	2	3	6	12	20	28



## Conclusion

This paper dealt with analyzing the relationship of Monthly Page Views with Domain Age and Google Indexed Pages while assessing the traffic flow behavior based on website categories. The results obtained show that Google Indexed Pages has a statistically significant relationship on Monthly Page Views with a low to moderate strength. However, the relationship between Domain Age and Monthly Page Views was identified insignificant. This relationship can also be influenced by extraneous variables such as category of website, quality of content, and others.

The categories of websites did show significant influence in the strategies adopted by the websites to select sources of traffic or the nature by which the visits came in for those sites. The possibility of altering between the sources of traffic and choosing the best combination to get the right visitors cannot be neglected by the website owners. Studies such as quality analysis, customer choice, content analysis, and location effects can be conducted in continuation to this research for helping web professionals in streamlining the online business activities and for students in understanding the web behaviors and characteristics of traffic.

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## Motorcycle Tourism: A Ride towards Sustainability and Pro-Environment Attitude

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**Abstract:** Motorcycle travellers are least identified, yet significant contributors to travel and tourism industry. Scholarly works on motorcycle tourism is limited and the definitions for the motorcycle tourism are vague. However, the trend in consumption of sport-tourer bikes and biker clubs' travel activities has exhibited profound interest among youngsters to 'tour' on bikes. Furthermore, the bikers have illustrated a pro-environment attitude in their destination preferences, which can propel sustainable behaviour. While the world is looking forward for sustainability, catering the biker subculture would assure and promote a pro-environmental way of tourism to the immediate future. This conceptual paper proposes an ethnographic study in exploring and documenting whether and how the motorcycle subculture pursues pro-environmental as well as sustainable behaviour while on their rides. The study calls for more scholarly works on motorcycle tourism and motorcycle subculture considering its industrial and academic potentiality.

**Keywords:** motorcycle tourism, motorcycle subculture, bikers, pro-environment behaviour, sustainability

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Sustainability issues, pollution and climatic change has always been a negative impact of excessive tourism activity. Diverse transportation systems and its gas emissions contribute a major share for this environmental impact (Lee et.al, 2017). Several western governments have implemented environmental policies that increase the cost of air travel. Such policies intend to restrict travellers from opting air transport. A report on the carbon footprint of Dutch tourists claims that the 'worst' types of holidays are the long-haul trips made by airplane (Nawijn and Peeters, 2010). Studies call for sustainable tourism practices and travelling behaviour. However less attention has been given to encouraging a pro-environmental way of transportation. Lack of studies is also visible in the area of recognizing tourists, whose destinations are depended on the means of transport. This paper focuses the drive tourism, especially motorcycle tourism, where tourists prefer to experience the thrill, adventure and leisure on the journey to the destination (Cater, 2006). The research appreciates biker subculture and motorcycle tourism, as least studies have conducted on this counterpart of drive tourism. It is also understood that the carbon emissions released by automotive are comparatively lesser to motorbikes, which explains more sustainability (Fjelstul & Fyall, 2015). Furthermore, the study attempts to explore whether and how the motorcycle subculture perform the pro-environment behaviour.

### Literature Review

#### The subculture theory

The concept of subculture entered the discipline of sociology to interpret the deviant behavior (Blackman, 2014). Subcultures are collective representations as products of real social groups that share symbols and common meanings and thus create forms of solidarity (Bell, 2010). This social solidarity in the form of social cohesion for a group or subculture binds people together through commonality to confront anomie. According to British theory, subcultures are also considered as a potential menace to social and racial welfare (Lewis, 1933).

The concept of subculture is mostly discussed with the theory of deviance and delinquency. MCs (Motorcycle clubs such as Hells Angels), Teds, skin heads, and punks are examples of subcultures formed in resistance to class stratification or for criminal offences (Campbell & Muncer, 2010). However, subcultures such as 99% bikers (MCCs), who are subcultures exhibiting distinctiveness is less addressed in literature with regard to subculture theory of distinctiveness (Blackman, 2014).

### **The biker subculture**

The terms biker subculture, motorcycle subculture and motorcycle club subculture are the terms used interchangeably to represent a group of people with their own style and identity portrayed with their heavy machines on road (Hebdige, 1999).

Prezi (2013) explains biker subculture as a group of men that are motorcycle enthusiasts. They travel to various locations in a large pack of motorcycles. They are known for wearing leather jackets and boots along with denim jeans. This definition mostly aligns with the contemporary motorbike clubs (MCs). Hebdige's (1999) explanation for the biker subculture includes the accessories such as leather jackets, bandana, skulls, patches and their membership is described to be with the Hell's Angels or Café racer club, riding Harley Davidson bike or a 'café racer' (Drozdowicz, 2016). The uniformity in machines is subjective to different clubs in the contemporary biker subculture.

### **Bikers in Tourism**

Though the bikers as in subculture do not take part in tourism as 'tourists', their expeditions directly or indirectly contribute to the tourism industry. Hence, a separate terminology has emerged, calling it motorcycle tourism. The term motorcycle tourism is defined as the type of tourism on a motorbike (Lee et.al, 2017), involving trips away from home, whose main purpose is avacation, leisure, entertainment or recreation (Sykes & Kelly. 2013, 2014). Motorbikes and motorcycle club activities such as sporting events or attendance at events for commercial gain is also considered as motorcycle tourism. An active or passive rider shall perform motorcycle tourism as a day or overnight stay; but day today transportation is excluded.

However, the term exists; least mention is in the literature about motorcycle tourism and its conduct (Sykes & Kelly, 2016, Cater et.al, 2015, Scol, 2016). Lee et.al has claimed motorcycle tourism as a least recognized, however, sustainable way of tourism. As such, the role of bikers in tourism and practicing sustainability has to be much emphasised in scholarly works.

### **Towards pro-environment attitude**

Kollumus and Agyeman (2002, p.240) define pro-environmental behaviour as "behaviour that consciously seeks to minimize the negative impact of one's action on the natural and built world". This is suggested to adopt in workplaces committed to effective workplace sustainability programme (WSPs). Either motorcycle tourism or biker club activities are not intentionally performing the pro-environment behaviour. Nevertheless, the interests of a biker leads him through a pro-environment attitude.

Bikers are the group of travellers who relish on-road journey than the destination itself. They seek speed, thrill and adventure. Travel to nature destinations through rugged terrains attracts many of the bikers, which can generate a pro-environment attitude among them (Sunderraman, 2013). Motorcycle tourism thereby consumes many other types of tourism such as adventure tourism, eco-tourism and rural tourism (Scol, 2016).

Wescott & Andrew (2015) discussed how spatial and environmental patterns influence off-road vehicle (ORV) recreation. The study however focuses on four wheeled vehicles in ORV and it critically assesses how readily available datasets and maps assist them in following ORV tracks. This study based in Western Australia emphasises poor management in off-road recreation as well as tracking. Hagen & Boyes (2016) also discussed developing trails for proficient mountain biker riders, to offer rider satisfaction. Bikes, motorbikes, automotive of TGVs, off-road recreation persists in a nature destination. Mud and dry soils, ruts and shoots, obstacles, performing jumps and drops, experiencing weightlessness and overcoming fear provide thrill and adventure to every biker. Though the definition of motorcycle specifically exclude off-bikes, as they involve in biker events as well as competitions, they become part of it (Sykes & Kelly, 2015).

Attributes of bicycle tourism and experiences of it are similar to that of the motorcycle tourism. The definition of motorcycle tourism thus emerged from bicycle tourism (Lamont, 2009). Han, Meng & Kim (2017) claimed excellent sources of nature such as beautiful landscape and various topographies, man-made resources such as architecture, historic sites and heritage and comfort whether as important for bicycle travellers when they appraise the money spend, evaluate satisfaction and assess travel experience. Thereby most of the organized bicycle tours and events by clubs design similar routes. The above cases explicates rider's impulse to experience nature as they experience biking, which would lead to a pro-environment attitude.

Furthermore, the most renowned biker checklist routes are located in the remote-nature destinations with diverse topographies. For example, Ho Chi Minh trail, Vietnam; Ha Giang Province, Vietnam; The Mae Hong Son loop, Northern Thailand, The Thakhek loop, Central Laos, Sagada-Bontoc-Banaue and back, Philippines, Puerto Princesa to El Nido, Philippines (Rogers, 2016), Khardung La Pass India, Arctic routes (Scol, 2016)

### **Motorcycle tourism and sustainability**

Nawijn and Peeters (2010) suggest paying attention to alternative modes of transportation instead of airplanes or automotive as step further for sustainable modes of transportation. Motorcycle tourism is prevailing, but the least recognized type of tourism, which involuntarily follows a sustainable path. Nevertheless, motor biking is not advisable to all sort of tourists, this shall be encouraged among the growing sector such as biker subculture, who seek satisfaction and leisure in biking (Morris, 2009). The percentage of voluntary green travellers are smaller. However, according to Nawijn and Peeters (2010), promoting green means of travel would contribute to massive deduction of CO<sub>2</sub> emissions in long run.

Fjelstul and Fyall (2015) highlighted sustainable drive tourism as a catalyst for change. This calls for replacing fossil fuels and gas stations with charging stations for electric vehicles. Motorcycle tourism as a subset of drive tourism thus plays a role in sustainability. The proliferation of latest models of electric superbikes would add its benefits in near future.

Motor-based tourism is quiet unpopular in promotion due to its fossil-fuel consumption (Cater et.al, 2015). However, Lee et.al (2017) claims motorcycle tourism as a more sustainable form of drive tourism as it consumes less fuel than an average car. Among the categories of bikers under motorcycle tourism such as sports bikers, cruisers, classic bikers and trail bikers, trail bikers or off road bikers are tarnished as having a high environmental impact. Nevertheless, many organizations such as Trail Riders Fellowship in the UK are promoting sustainable off-road motorcycling (Cater et.al, 2015).

### **Methodology**

Stories of biker subculture from the period of Hells angels and Café racers are documented through ethnographies. They described the camaraderie, brotherhood, thrill, speed and adventures shared within their culture (Kemp, 1989; Bolin & Granskog, 2003).

An ethnographic study understands social life as the outcome of the interaction of structure and agency through the practice of everyday life. It examines social life as it unfolds, including looking at how people feel, in the context of their communities and with some analysis of wider structures over time (O'Reilly, 2012).

Ethnographic researches explore the beliefs, behaviour and practices of a particular culture (Creswell, 2007). A perusal of bikers, their habits, livelihood, preferences and practices direct to an ethnographic study conducted among the biker subculture. Involvement of nature and topography in biking experience is evident from the literature. Potentiality of motorcycle tourism for sustainability can also be traced from the literature. However, the bikers perception and voluntary participation in pro-environment, and well as sustainable means of transportation is yet undiscovered.

Whether it be on biker subculture or motorcycle tourism, much of the positivist as well as constructivist researches are based in Australia, New Zealand, European countries as well as North America (Scol, 2016, Wu & Pearce, 2016, Holm et.al, 2017, Muir, 2011, Hahen & Boyes, 2016). Though Asian countries are known for motorbike consumers (Hassan et.al, 2017), biker clubs and consumers for sport-tourer bikes, least studies are conducted on the scope and practices of motorcycle tourism in Asia. More specifically India, as the largest motorbike consuming country is chosen as the field for conducting ethnography for this research (Sunderraman, 2013, Adachi, 2006).

### **Implication and conclusion**

Riding through natural areas is a highly desirable experience among bikers (Zajc & Berzelak, 2016). Similar to adventure tourism, motorcycle tourism also involves subjective well-being through risk-taking, where the environment and topography is the substantial factor. Motorcycle tourism shows the importance of routes as an

object of tourism and existence of mythical destinations for motorcycle travellers. Serious bikers thereby develop a pro-nature attitude, which would lead to sustainable practices of biking.

Tourism stakeholders have shown disinterest in promoting motorcycle tourism for few reasons such as unfamiliarity, negative image of bikers, risk, pollution and disturbance (Scol, 2016). However, many European countries have implemented policies in favour of motorbikes. It is also acknowledged in countries like Bhutan, Vietnam, India, Mali, Morocco, and Madagascar (Scol, 2016).

This study suggests the organized biking events and biker clubs to adopt pro-environment and sustainable practices in their agenda. This study also recommends focusing on the biker subculture to market new destinations and routes as products for subculture consumption (Jain et al., 2016; Schouten & McAlexander, 1995). Exclusive amenities such as bikers café, restaurants, music shacks, accommodation units or motels for this growing subculture would attract many travellers including budget travellers. Hedonistic well-being and personal satisfaction are other intangible benefits achieved by riding (Zajc & Berzelak, 2016). Emphasis given on motorcycle tourism would generate a unique and popular kind of tourism of Asian countries in the near future (Cater, 2017). The study of motorcycle tourism would also contribute to researches on on-road behaviour and safety (Huth, Fussl & Risse, 2014).

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## Sustainable agricultural development through Organic Farming in Wayanad District of Kerala

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### Abstract

*Organic farming has emerged as an alternative form of agriculture that relies on crop rotation, green manure, compost, biological pest control and mechanical cultivation to maintain soil productivity and sustainable development of the farming community. The primary data were collected through stratified random sampling from 420 respondents of the four blocks of Wayanad district of Kerala. The profitability, cost effectiveness and sustainability of organic farming was studied. The study reveals that organic farming is economically viable, more profitable, sustainable and cost effective, particularly in the long run, after the initial conversion period is complete. It would prove to be economically viable even in the short run, if externalities could be imputed. The study proves that organic farming is economically viable on the micro level. However, there is no single recipe under organic farming that will be universally applicable under all agro-climatic conditions. The overall development of farmers and the district can be visualized through the practice of organic farming. Organic farming was benefiting the farm especially in the protection and recharge of on-farm resources.*

**Keywords:** organic farming, sustainability, profitability, cost effectiveness

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Organic agriculture is an age old practice in India, has attracted the attention of farmers, agronomists, academics and policy makers, as the negative externalities of chemical agriculture have become well-known. Organic farming has emerged as an alternative form of agriculture that relies on crop rotation, green manure, compost, biological pest control and mechanical cultivation to maintain soil productivity and sustainable development of the farming community.

Organic farming is aimed at protecting a whole agricultural agro-ecosystem, promoting the agricultural practices that capitalize on natural soil fertility, the environmental biodiversity and limiting or excluding damaging chemical products (Mader, P., et al., 2002). Organic farming avoids the use of synthetically produced fertilizers and pesticides and it treats soil as a living medium.

A modern definition of organic farming provided by Lampkin (1994), an authoritative source, states that the aim is: "to create integrated, humane, environmentally and economically sustainable production systems, which maximizes reliance on farm-derived renewable resources and the management of ecological and biological processes and interactions, so as to provide acceptable levels of crop, livestock and human nutrition, protection from pests and disease, and an appropriate return to the human and other resources".

There is no real dispute that sustainable agriculture and organic farming are closely related terms. There is however disagreement on the exact nature of this relationship. For some, the two are synonymous, for others, equating them is misleading. Lampkin's definition of organic farming, quoted above, talks of sustainable production systems. Having provided his definition, he goes on to state: "...sustainability lies at the heart of organic farming and is one of the major factors determining the acceptability or otherwise of specific production practices" (Lampkin, 1994, p. 5).

Brumfield (2000) examined the economics of sustainable and conventional farming systems and observed that organic systems are more profitable than conventional systems with organic price premiums, but are not economically viable without price premiums. He also feels that the organic system is more profitable, if the cost of family labor is ignored, but less profitable if it is included, as organic farming is more labor intensive.

According to A. K. Sharma (2004), organic farming is economically viable, as farmers can achieve more income as a result of price premiums, and the need of fewer inputs to maintain returns.

Kerala ranks first among all Indian states in organic production of coffee and pepper. Wayanad District has the highest number of organic farmers in the state. Agriculture constitutes the main occupation of the people in this area and 90% of them depend on it. Wayanad produces 78% of coffee in Kerala with 33% of land area in the district. The present research makes an inquiry into the organic farming technique to test its economic viability, with special emphasis on the productivity, cost-effectiveness and profitability of plantation crops like pepper and coffee. In the production of organic Pepper and Coffee Wayanad district stands on top.

#### Method and methodology

The primary data were collected through stratified sampling from 420 certified organic farmers from the four blocks (Manathavady, Panamaram, Sultan Bathery and Kalapetta) of Wayanad district. The profitability, cost effectiveness and sustainability of organic farming was studied in detail followingschedule. It was prepared to include the economic, social and environmental aspects of sustainability. Personal interviews were also conducted among the agricultural scientists and officers from coffee and spices board from Wayanad. Leaders of the NGOs were additionally interviewed by the researcher. The key variables used in the study are cost components, productivity and profitability. To analyze the obtained data statistical tools like percentage analysis, and net return

#### Results and Discussion

For empirical analysis linear programming technique is employed to maximize net farm returns (profit after deducting costs) under given constraints for the selected farm in organic farming system as discussed with detail in (Taha, 1982) and given below:

$$\text{Max Net Profit, } Y = \sum_{j=1}^n C_j X_j \quad (1)$$

Subject to

$$Y = \sum_{j=1}^n a_{ij} X_j \leq b_i, \quad i=1,2,3 \quad (2)$$

$$\text{Land constraint} = \sum_{j=1}^n L_j X_j \leq L$$

$$\text{Capital (cash) constraint} = \sum_{j=1}^n K_j X_j \leq K$$

$$\text{Non-negativity} = X_j \geq 0$$

Where, Y = Net profit to fixed farm resources.

$C_j$  = The profit for the jth activity, where jth activity stands for jth crop in the production process, i.e. if farmer is growing n crops then there will be total n activities and the value of j will be from 1 to n.

$X_j$  = The level of jth activity.

$a_{ij}$  = The amount of ith input (Family labour, capital, water and land) required in jth activity.

$b_i$  = The total available quantity of ith input.

L = Land available.

$K_j$  = Capital (cash) needed for the jth activity.

K = Total available cash (capital).

W = Water available

$W_j$  = Water needed for the jth activity.

The profit maximizing plans are estimated through linear programming by using Quantitative Systems for Business (QSB). Per acreage costs in organic farming systems was estimated by including cash costs (costs of seed, fertilizer, pesticide, hired labour and other operations).

The revenue is estimated by multiplying the total production with market price of the output and the value of output consumed at home is also included in the revenue and is evaluated at the market price. The Net Returns Per Rupee Invested (NRPRI) are estimated by dividing net profits with total cash costs.

Importance of health factors and that of the factors of environmental protection surpassed economic considerations. Instead of primary profit making, aspect of sustainability came into prominence. 60% of the respondents did not carry out efficiency/economic calculations at all in association with the conversion. Application of environment saving technologies as well as preservation of the nature and its protection are closely associated with the concept of

ecological sustainability. It was examined along several questions, whether farms have applied artificial materials (fertilizers, plant protecting chemicals, yield increasing additives) before the conversion to organic farming or preferred already earlier natural materials (organic manure, green manure, etc). 86% of the farms included in the survey applied organic manures, 61% plant protecting chemicals and 84% of the respondents used both before beginning with organic farming. 25% of the respondents applied some kind of yield increasing additives, further 14% of them also other artificial materials. 78% of farmers maintain that the use of organic manures raises the fertility of the soil and reduces cost. Parallel with all these, 66% of the participants in the survey applied already in conventional production organic manuring for nutrient supply. It is a satisfying result, that 37% of the respondents did not apply either chemicals, fertilizers, plant protecting agents or other yield increasing additives in the period previous to organic farming.

Of the 420 farms under study, some sort of plant protecting method is applied in 315 farms, mechanical (75%) and agrotechnical (57%) methods were most often marked by the respondents. Physical protection and the use of authorized materials is applied by 50-52% of the respondents, biological plant protection was marked by 41% of them. The question relating to the survey of weed control methods was answered by 410 farmers. Of the weed control methods mechanized (79%) and manual (68%) weed killing were most frequently applied, although the role of agrotechnical methods was important (48%) too. Biological protection (14%) and chemical use (16%) were most rarely marked. Physical weed control was mentioned by 56% of the respondents. It can be stated, that the most important role can be attributed to soil cultivation, mechanical weed control, (interrow cultivator, weed comb, mowing) and in certain cultures to the use of manual labor. In examining nutrient supply, 393 available answers were obtained to the question concerning the methods and proportions applied in nutrient supply (organic manuring, green manuring, mulching, use of compost, etc.). The most important element is organic manuring, mentioned by 77% of the respondents, as well as ploughing-in of green manure plants (55%). 90% of the respondents are assured that organic farming is more sustainable and provides stable output over the years. The farmers(89%) are satisfied with the premium prices paid to them which is 15% to 25% above the market price.

#### Economic Analysis of Organic Farming System

The costs of production, total revenues, Gross Margins (GM) and Net Returns Per Rupee Invested in Rabi crops was estimated on per acreage basis for organic farming systems in the study area. The comparison of costs and benefits for organic farming systems is not very useful because it does not reflect a clear situation which one is preferable to the other. Therefore, Net Returns Per Rupee Invested (NRPRI) are estimated and considered as basis for analysis. The Net Returns Per Rupee Invested (NRPRI) for organic farming systems was reported in the following Table.

Table:1- Economic Comparison of Various Crops in Organic Farming Systems

Type of crop	Organic farming (5acres and above)				Organic farm below 5 acres			
	Cost per acre							
1 Revenue								
2 Net Return								
3 Net return per rupee 3/1	Cost per acre 1				Revenue			
2 Net Return 3	Net return per rupee 3/1							
Coffee	24450	72000	47550	1.94	19500	68500	42000	2.51
Pepper	42000	154000	112000	2.66	36800	145000	108200	2.94

Source: Primary data

The results indicated that NRPRI from coffee and pepper are higher for organic farming systems with less than five acres of size mainly because of lower cost of production. NRPRI for organic pepper for large and medium farming systems are estimated to be 2.66 and 2.94, respectively while NRPRI for coffee it is 1.94 and 2.51 respectively. It is observed that NRPRI is higher for all crops in organic farming system with medium farm size compared to large farms system, implying that it is more profitable to invest in organic farming system with less than five acres. It is due to the fact that organic farming system employs less cash input and uses family labour and own inputs which leads to generate higher NRPRI for organic farming system.

## Conclusion

This analysis provides evidence that organic crops with yield penalties can be profitable and competitive with conventional crops. The lower organic production costs coupled with adequate organic price premiums make organic production competitive, profitable and sustainable. My findings regarding lower organic costs are consistent with previous comparison studies (Chavas, Posner, and Hedtcke 2009; (Klepper et al. 1977). My results are similar to Chavas, Posner, and Hedtcke and show that conventional production is more profitable without organic price premiums. However, with organic price premiums, I find organic cropping systems could be significantly more profitable, which is consistent with these authors as well.

The study reveals that organic farming is economically viable, more profitable, sustainable and cost effective, particularly in the long run, after the initial conversion period is complete. It would prove to be economically viable even in the short run, if externalities could be imputed. The study has proven that organic farming is economically viable on the micro level. However, there is no single recipe under organic farming that will be universally applicable under all agro-climatic conditions. The overall development of farmers and the district can be visualized through the practice of organic farming

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## Efficient Popular House: A Brazilian Proposal for Low Cost and Sustainable Housing

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### Abstract

*Civil construction is very important to overcome the high deficit that exists in housing, especially in developing countries. However, few studies and projects have been made to create a social house context that considers environmental issues. Thus, the search for sustainable materials and solutions of low cost has become the main focus of this research, contributing to a sustainable architecture that uses renewable and natural elements, aiming at a greater comfort to the low-income users. It is detailed here the design features and construction materials used in order to build popular houses in Brazil. The so called Efficient Popular House (EPH) was built inside the Federal University of Santa Maria campus (Southern Brazil) to evaluate the performance of the materials and sustainable solutions adopted. The EPH aims to help raise awareness among the scientific community and civil construction professionals about the importance of sustainable housing focused for low-income populations, improving the quality of life and sustainability and lowering the construction costs.*

**Keywords:** popular house, sustainability, environmental comfort

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Developing countries still present a high housing deficit. In Brazil, this number is around 10% according to the last research conducted by Brazilian Institute (IBGE, 2014). It is estimated that with the growth of cities and the increase in life expectancy, these indexes can grow considerably over the next 20 or 30 years, generating not only a housing deficit but a significant environmental impact. According to Krüger& Lamberts (2000), research in this area of social interest has been increasing considerably in recent years in Brazil, including studies ranging from the evaluation of low-cost housing programs such as construction techniques (Qualharini, 1993), and social and cultural factors to be built for a poor population (Santos, 1995; Krüger, 1997), as well as factors related to the improvement of thermal comfort conditions in the built environment (Mascaró, 1992; Barbosa, 1997).

One must be aware, however, that building construction strongly affects the environment through climate change. According to Roaf et al. (2009) and Vaghetti et al. (2013), buildings are responsible for producing more than half of all emissions from climate change, threatening the future of our planet. Therefore, it is very important to design popular housing alternatives that aim, besides contributing to decline homelessness the improvement of living conditions of low-income populations, the use of environmental resources available, enabling the development of a healthy environment, economically viable and environmentally friendly (Oppenheim; Macgregor, 2008; Seyfang, 2010). Considering these aspects, an Efficient Popular House (EPH) was designed.

The EPH was built in the Federal University of Santa Maria (UFSM) and was designed by civil engineering and architecture professors and undergraduate students and its basic draft design version has been initiated in 2008. Materials and sustainable local solutions were made considering the characteristics of Santa Maria (a 300,000 inhabitants town located in Southern Brazil) with four well-defined seasons. The EPH was built in December 2013, considering the use of available environmental resources (solar, wind, rain water, soil and vegetation), as an alternative for low-income housing.

The main goal of this work was to show that it is possible to construct ecologically and economically efficient houses by adding sustainable materials and energy efficient solutions aiming to take advantage of the available environmental resources, as opposed to the popular housing solutions available in the Brazilian market. This objective therefore permeates the scientific community, architects and all professionals related to construction technology, to the importance of low-cost sustainable housing, aimed at low-income populations, improving quality of life.

### Theoretical reference

The population's way of life and the comfort demands have been increasing the consumption of energy throughout the world, with the most developed countries showing the highest consumption. In addition, the use of water is another important criterion to be considered when talking about sustainable buildings, mainly because it is distributed in an unequal way, consumption is increasing and many of our resources are polluted.

Particularly in the agglomerations of expanding countries, affordable housing is becoming a growing problem. Still, according to Löhr (2017) a growing number of governments recognize that it is not possible to deal successfully with climate change without energy-efficient housing. Energy efficiency as a solution to climate change and climate change is one of the most important concerns and interests of mankind.

In addition to reducing energy costs in homes, it is also important to provide conditions for the rational use of water. Adequate sanitary conditions should be promoted while reducing the use of water resources. In this sense, the use of economizing technologies, the use of rainwater and the reuse of wastewater are actions that can be included in the design of buildings to reduce consumption and waste of water (Maciel et al., 2006).

Furthermore, the first step in the search for sustainable buildings is to consider the concerns from the beginning of the project, continuing from construction stage to the use. The design of the building becomes a fundamental stage, where environmental aspects, the surroundings and the management of resources should already be considered. The timing of the choice of materials is also important and natural, environmentally friendly and recyclable materials should be preferred.

Building with quality and efficiency means adapting the best materials and the best technologies within an acceptable technical standard, always seeking alternatives that enable the execution of the work in a shorter term, at a minimum cost, and seeking the well-being of the population. Designing then becomes a very important job when it comes to improving people's quality of life, enabling them to feel well in the building environment. However, when the intention is to design a building aimed at the low-income population, with many basic needs and lack of infrastructure such as water, sewage and electricity, the elaboration of the project becomes a challenging job.

According to the World Commission on Development and Environment (WCED, 1987), sustainability is based on "development according to the needs of the present without compromising the ability of future generations to meet their own needs." In the building environment, aspects such as the use of energy, water, and materials are linked and their impact on future generations should be a concern in a truly sustainable project.

### Methodology

The methodology for the accomplishment of the project was based on the exploratory analysis, reviews and search for materials of low environmental impact for later selecting the best alternative. In addition, research into clean technologies and reuse was part of the study, taking into account the local constraints for determining innovative, efficient, sustainable and low-cost solutions.

The choice of the sustainable materials that were used in the popular-efficient house project, compared to the conventional ones, went through the quantification of emission of carbon dioxide (CO<sub>2</sub>). This quantification considered all stages, from the material production, transportation, to the installation in the building area. The choice of ecological bricks, floor covering (recycled PVC), frames (large eucalyptus), ceiling (from OSB), roof covering (tetra PAK packaging), painting and sealing system (ecological) went through this analysis of polluting emission, specifically considering CO<sub>2</sub>.

In the case of the adopted sustainable solutions, the methodology was directed to the quantification of the improvements that each solution would bring in a particular specific purpose in the house. For example, for energy consumption in the shower, a low-cost-solar-heating system was adopted, for the high demand of water in the toilet, the utilization of rainwater was implanted. Moreover, to supply the electric power demand in the residence, photovoltaic panels were installed for the generation of electric energy; the climbing vegetation was used as an alternative to maintain the thermal balance inside the house in both summer and winter; and the typology of the house, internal openings and roof, were designed to cool the temperatures inside the residence by chimney effect.

The project of the popular-efficient house was developed with the goal of encouraging the application of these solutions in civil construction, aiming at the rational use of water resources and electric energy, the lower environmental impact caused by the buildings and the well-being of the residents.

## Results and discussions

### Architectural design

The edification has a built-up area of 55.40 m<sup>2</sup>, consisting of two bedrooms, one bathroom, one living room and one kitchen integrated with a utility room. Figure 1 shows the floor plan (Figure 1A), section AA (Figure 1B) and section BB (Figure 1C).

Figure 1: Detail of the EPH Plant (Figure 1A), Section AA (Figure 1B) and Section BB (Figure 1C)

### Construction materials

The construction materials were chosen in order to best fit in terms of mechanical behaviour and building service performance, as well as those with the best cost-benefit (economic viability) in function of construction area proximity and large scale production feasibility, which allows the use of these materials in a reasonable number of houses for a developing residential site, considering southern Brazil region. The materials used are described below:

#### Soil-cement bricks

The soil-cement brick (Figure 2A) is an alternative low-cost material, obtained from the homogeneous mixture of soil, water and cement (5 to 12%).

The adequate soils are those called sandy soils, which presents a sand constitution ranging from 60% to 80% of the sample mass considered. The compacted mass hardens over time, and in a few days it gains sufficient strength and durability for various applications in civil construction, such as in foundations, baldframes, strip footing, solid walls supported directly on the ground, masonry with bricks and blocks, floors and flooring, paving, in short, a diversity of options. The utilization of voided soil-cement bricks also allows the passage of hydraulic piping and the electric grid, thus avoiding wall breakage, justifying the project's rationality. The application of plaster, lime and finishing mortar are dispensable, requiring only a simple painting with ecological paints, increasing its impermeability as well as the visual aspect, comfort and hygiene. Beyond all, the meeting of ecological requirements is achieved, by the fact that the material does not pass through the burning process, in which large amounts of wood or fuel oil are consumed, as is the case of traditional bricks produced in brick yards (VAGHETTI et al., 2013).

#### Tetra-Pak corrugated tiles

The Tetra-Pak corrugated tiles (Figure 2B) are produced from the recycling of polyethylene / aluminum in Tetrapak's long-life packaging, allowing better use of these materials and avoiding their disposal in landfills and dumping grounds. The composition of the tiles is a mixture of the materials found in this type of packaging: 75% of plastic, 23% of aluminum and 2% of vegetable fibers, pressed at high temperature and without the use of resins (VAGHETTI et al., 2013).

#### OSB ceiling

The OSB -Oriented Strand Board (Figure 2C) system reduces the environmental impact due to the non-use of adult trees in its manufacture and allows the use of raw materials from sustainably managed forests. The Particleboard of long and oriented wood (OSB) has been the most important development of the wood products industry in recent years (VAGHETTI et al., 2013).

#### Ecological waterproofing and soil-based paints

The face-brick walls in the outer walls were waterproofed with ecological paints (Figure 2D), which are made in 15 shades, a result of the mixture of soils of different colors, being its main component the raw soil. The ecological waterproofing is a product developed with high resistance, its film forms a shiny and smooth coat, avoiding the formation of slime, the penetration of humidity and the accumulation of dust (VAGHETTI et al., 2013).

#### PVC flooring

The PVC (Polyvinyl chloride) flooring (Figure 2E) used was produced with 70% of recycled PVC, and having simple cleaning and maintenance processes, as well as being comfortable and durable (VAGHETTI et al., 2013).

#### Wood frames

The frames (Figure 2F), including windows and doors used were made of *Eucalyptus grandis*, a species that grows in 15 years, instead of the 50-70 years from typical species. The cultivation process is done in a way to conserve native biodiversity (VAGHETTI et al., 2013).

Figure 2 – Material used in the EPH: Soil-cement bricks (Figure 2A), Tetra-Paktile (Figure 2B), OSB ceiling (Figure 2C), Raw soil-based paints (Figure 2D), PVC flooring (Figure 2E) and Wood frames (Figure 2F)

## Planned Sustainable Solutions

### Rainwater harvesting and greywater reuse

A set of devices have been constructed to allow rainwater to be reserved, consisting of reservoirs, pipes, filters and gutters (Figure 3A). The uses are especially the toilet, garden irrigation, sidewalks washing and other external uses. In addition, a greywater system was constructed (Figure 3B), reusing the bathroom sink, shower and washing machine wastewater (VAGHETTI et al., 2013).

### Solar energy utilization

A system was constructed for water solar heating (Figure 3C), by installing a low-cost solar heater, composed mainly of modular PVC lining plates, called alveolar, which allows the use of hot water for the bathing, significantly reducing the consumption of electrical energy of the house. For the house electric power generation a system was used consisted of a photovoltaic panels system (Fig. 3D), therefore producing a free-cost and cleaner energy (VAGHETTI et al., 2013).

### Natural ventilation

The best use of the natural ventilation in the prototype was achieved by the disposition of air inlets and exits in strategic areas, providing internal ventilation for the house in a way that in the summer it can relieve the heat and in the winter it can ventilate maintaining a pleasant temperature internally (VAGHETTI et al., 2013).

Figure 3 - Planned Sustainable Solutions: Rainwater harvesting (Figure 3A); grey water reuse (Figure 3B); System for water solar heating (Figure 3C and Figure 3D)

## Prototype Constructive Process steps

The construction of the prototype of the Efficient Popular House began with the execution of the stakes and foundation beams in reinforced concrete (Figure 4A). The constructive process of the walls was done with a structural masonry technology using soil-cement bricks (Figure 4B). The Figure 4C shows an internal view with the arrangement of the hydraulic and vertical electric pipes in the holes of the cast bricks. In Figure 4D it is possible to observe the construction of the masonry practically completed, and, in Figure 5A, with the roof finished.

In the space between the ceiling and the roof are located openings for cross ventilation and the ducts of the electrical installation, which are located in the front and back rooms and can be visualized in Figure 5B. The Figure 5C shows an external view of the house with the wooden frames placed and the hydraulic column with the water reservoirs and the Figure 5D shows a front view of the prototype concluded.

Figure 4 - Stages of the prototype building process: Foundation beams (Figure 4A); First structural steel of the soil-cement masonry (Figure 4B); Hydraulic and electric pipes inside the walls (Figure 4C) and Walls construction process completed (Figure 4D)

Figure 5 - Stages of the prototype building process: Roof concluded (Figure 5A); Cross ventilation openings and electrical system (Figure 5B); Wood frames and water reservoirs (Figure 5C) and Efficient Popular House concluded (Figure 5D)

## Conclusion

It is well known that humanity needs to focus its attention to the climate change. Buildings certainly play a very important role in this context, due to the high degree of greenhouse gas emissions that are generated in the construction process, from the raw material extraction, manufacturing and transportation through the building construction. Therefore, the look for more sustainable constructive processes and materials is very necessary in order to provide future generations better living conditions. Accordingly, this study showed that it is possible to design and build sustainable popular houses with low cost, by using alternative materials. The Efficient Popular House will enable an alternative sustainable construction in the building area. These technologies and solutions are important from the environmental point of view. Moreover, it develops awareness of the involved professionals, especially engineers and architects, in the art of designing, including environmental aspects in order to preserve the environment and reduce civil construction impacts. Certainly the large scale replication will benefit the environment

and society. In the future, with a performance monitoring, this prototype can serve as a model to build an Ecological Village in an area of social interest.

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## Sustainability of Buildings aiming gray Water Reuse

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### Abstract

*The fresh water available on the planet is essential for life, but population growth, increased demand and uncontrolled use have made this resource scarcer. Currently, the concern is about what must be done to ensure that water is better used in order to guarantee current and future supply, and that conservation measures are necessary to preserve this resource. The treatment and utilization of rainwater and reuse of gray water, applied for non-potable purposes, is in line with the principles of sustainable planet and present as important and current issues, as part of efforts to mitigate pressure on water resources. However, the use of these alternative sources requires caution, and for adequate use of these systems, a set of actions aiming at final quality for the safe use of this water should be developed, in order not to compromise users' health. The use of this water, when properly treated, to supply part of the demand for residential water, provides countless benefits, such as reduction in the volume of effluents launched by buildings and reducing the consumption of drinking water. In this context, this study evaluated the use of laundry gray water as an alternative source to supply part of the residential demand, with a view to the sustainability of buildings regarding water management as well as evaluating the treatment potential of water from washing machine for non-potable uses in buildings. The methodology was based on experimental research involving data collection and analysis of physical-chemical and microbiological parameters. The potential of gray water treatment was evaluated using a chemical process through coagulation and flotation, filtration in granular medium and post-treatment by adsorption in activated carbon. Results showed that the potential of applying these treatments to the use of gray water in residences were successful for the removal of the evaluated parameters. Therefore, as it is reported in this study, the use of these alternative water sources, when properly treated, provides the sustainable use, adding sustainability in buildings.*

**Keywords:** water conservation, non-potable use, reuse, gray water.

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Water is a property right shared by humanity, but the waste and pollution of water sources make it more and more scarce and costly. For Stikker (1998), with population growth at around 85 million per year, fresh water availability per person is decreasing. May (2008) attributes the increase in demand to the sharp and disordered population growth, which are the main factors that influence water consumption, especially in large urban centers.

According to Gonçalves et al. (2010), residential water consumption may account for more than half of the total water consumption in urban areas. For these authors, from a strategic point of view, acting in the control of residential demand is the best alternative to extend the evident water stress. In addition, the rational use of water is a basic concept for sanitation services, and its effectiveness is essential for the sustainability of cities and their actions are unavoidable so that water stress does not become a limiting factor for their development.

Thus, the economy growth activities and the maintenance of quality of life conditions of the population depend on the awareness of the importance of water conservation, which must be used rationally by all sectors, making essential research for the development of systems that seek solutions to increase water supply. Wastewater in the buildings is used in human processes, which can be used to supply other uses or the waste generator (Mancuso & Santos, 2007). Nolde (2000) conceptualizes Gray Water (GW) as domestic sewage without sanitary sewage. This water comes from places such as showers, sinks, tubs, washing machines and kitchen sinks.

However, the use of these alternative sources as an instrument for the conservation of drinking water in buildings requires caution. For the adequate use of these systems, a set of actions should be developed for the design, execution, use, operation and maintenance of treatment systems, in order not to compromise users' health. According to Jefferson et al. (1999), the reuse of GW without treatment is common; bath water has been used for

centuries, mainly to water gardens and lawns; however, the treatment of gray water before reuse is surely recommended.

Long-term irrigation with untreated GW can lead to accumulation of salts, surfactants, alkalinity, oil and grease, affecting the properties of soils and plants (such as water holding capacity) and eventually contaminating groundwater (1998), which is based on the results obtained in the literature. Untreated gray water intended for discharging toilets may leave stains on the toilet, encouraging the use of cleaner toilets, thus reducing the viability of reuse of gray water (Christova-Boal et al., 1996).

The treatment of the wastewater has as goals the removal of present solids (coarse, sand, oils and greases and settle solids), removal of the organic matter contained in the finely particulate and dissolved solids, and removal of pathogens, nutrients and phosphorus (Telles& Costa, 2010).

It is possible to establish parameters that find the recommended criteria or the standards that have been set for a particular use according to the physical, chemical and biological characteristics of the wastewater. The destinations for non-potable reuse water are quite comprehensive if properly treated.

One of the alternatives for treatment of this water involves coagulation and flocculation; processes used to separate suspended solids and promote water clarification (Hespanhol&Mierzwa, 2005). In this step, the solid particles collide with each other and form larger aggregates, with flotation (or decantation) after being sent to the sand filters.

Therefore, this study investigated the possibility of using water from the washing machine for non-potable reuse in residences, through qualitative and quantitative studies, in which the performance of a treatment process consisting of coagulation and flotation followed by Downward Direct Filtration (DDF) of gray water from the washing machine.

## Methodology

A synthetic gray water was produced in the laboratory and tested with liquid soap and softener to define a medium filter that would fit the ideal conditions of the parameters turbidity, apparent color and COD. After these results were obtained, tests with real water samples were performed. Different materials for filtration were tested, such as sand with varied granules, residuals of civil construction materials and crushed basalt.

COD was adopted as a parameter for the production of synthetic gray water, based on the values obtained in the characterization of real gray water, which had as mean and median, respectively, 347 mg/L, 300 mg/L, ( $\pm 142$  mg/L). To obtain the COD value close to 330 mL/L, 0.93 mL/L of liquid soap and 0.85 mL/L were fixed at 1.05 mL/L of liquid softener.

The evaluation of the different filter media was done from assembled laboratory filters interconnected to the effluent from the jar test effluent, where the previously coagulated, flocculated synthetic gray water (by flotation or flotation) was then filtered. Figure 1 shows the aboard, jug test and coupled laboratory filters.

The thickness of the filter media was 15 cm, as recommended by Di Bernardo et al. (2011). Figure 2 shows the samples of the different types of materials tested.

- FLA 1: sand, grains between 0.30 mm and 0.59 mm effective size 0.42 mm;
- FLA 2: sand, grains between 0.42 mm and 0.84 mm and effective size 0.59 mm;
- FLA 3: sand, grains between 0.59 mm and 1.00 mm and effective size 0.71 mm;
- FLA 4: sand, grains between 1.00 and 1.68 mm and effective size 1.41 mm;
- FLR 5: masonry residue of ceramic building blocks, grains between 0.59 mm and 1.00 mm, effective size 0.71 mm;
- FLB 6: basalt, grains between 0.59mm and 1.0mm and effective size 0.71mm;
- FLCAGB7: Coal, grains between 0.42mm and 0.84mm and effective size 0.59mm.

The filter medium material was replaced after each test. When removed, it was washed with drinking water and rinsed three times with distilled water; followed by drying in an oven at 100°C for 24 hours for reuse.

The assays were performed to optimize the rapid mixing, coagulation, flocculation and flotation assays to adjust the coagulant (Tmr) and the coagulant (TMr) medium mixing speed gradient in the mixture according to methodology proposed by Di Bernardo et al. (2011). The control parameters used were turbidity and apparent color remaining.

The flow control at the inlet and outlet of the filters was done manually, with a hydraulic load (input) ranging from 10 to 35 centimeters of water column; and at the outlet, the flow was adjusted through the valve at the end of the hose.

## Results and Discussion

### Choice of filter medium material

Six simulations were carried out with GW, determining two results for each step, adopting the mean of these values for analysis of the best performance of the filter material. The first step with a complete test in the jar test was to adopt an ascension velocity of 0.7 cm/min, aiming at reducing the control parameters at the filter inlet. The results obtained are shown in Figure 3.

Figure 3: (A) Turbidity (UNT); (B) Apparent color (uC); (C) COD (mg/L), synthetic gray water, filtration in the various granular media, jars test effluent, ascending velocity of 0.7cm/min.

In the analysis of the results, for the control parameters established, the most efficient filter was FLA1, with 0.12 UNT, 18.6 uC and 66.5 mg/L, of the respective parameters.

The second stage of the tests consisted of the removal of the GW, after the chemical process, that is, coagulation and flocculation and placement directly in the filters, the results obtained are shown in Figure 4.

Figure 4: (A) Turbidity (UNT); (B) Apparent color (uC); (C) COD (mg/L), synthetic gray water, filtration in various granular media, jars test effluent, coagulated water and flocculated.

In the analysis of the results, for the control parameters established, the most efficient filter was FLA1, with 0.02 UNT, 18.4 uC and 61.5 mg/L, for the respective parameters.

The results showed that the water withdrawn from the jars test and flotation device present the parameters with high rates, resulting from the withdrawal of the samples for analysis when the flakes were still in suspension.

The third series of tests consists of the removal of the GW after the chemical process, or else, coagulation and flocculation, and taken to the float, subjected to an air saturated recirculation rate of 5% and an ascending velocity of 3.5 cm/min (4.40 ") and brought to the granular filters; the results obtained are shown in Figure 5.

Figure 5:(A) Turbidity (UNT); (B) Apparent color (uC); (C) COD (mg/L), synthetic gray water, filtration in various granular media, floater effluent.

Filtration in the various granular elements, for the established control parameters, the turbidity in the filters FLA1 and FLA2, present 0.02 UNT; and for apparent color the best performance is the FLA1 filter; exception occurs in COD, in the third series of filtration; this one presents smaller indexes in filters FLB6, FLAR5, FLA4 and FLA3; however, this interval between the lowest and highest COD was 10 mg/L, not expressive, since in the first and second series of results, the FLA1 filter obtained better performance.

Based on the results and analyzes of these assays, FLA1 was used for filtration in the remainder of the assays.

### GW complete cycle trials

Certain the parameters of coagulation, rapid mixing, flocculation and filtering material, the complete cycle tests, the use of the FLA1 filters and the subsequent passage through a granular activated carbon laboratory filter (FLCAG) were performed. The water production generated in the jar test was divided; the first three jars (1 to 3), after the coagulation and flocculation process, were transferred to the flotation device and subjected to a 5% air recirculation rate, ascending velocity of 3,5 cm/min; and in the last three jars (4 to 6), the collection done after the average time of 10 min, counted from the end of the flocculation. In these jars, as after the flocculation there was the rising rate of the particles. The sampling of the water was made from the bottom of the jars.

The parameters of control of the tests analyzed in the results were the turbidity, apparent color, COD, and surfactants, remaining of the jar test and of the floated effluent, producing twelve sequential results, effluent exit from the jars test, passing through the sand filter FLA1 and FLCAG.

Results of the GW analysis originating from the jar test, submitted to the treatment, ascending velocity of 1.0 cm / min., shown in Figure 6.

Figure6:(A) Turbidity (UNT); (B) Apparent color (uC); (C) COD (mg/L); (D) Surfactants (mg / L), initial sample and remaining after the treatment steps, effluent from the jars test.

Results of the GW analysis of the flotated effluent, submitted to treatment, ascending velocity of 3.5 cm / min. According to Figure 7.

Figure 7: (A) Turbidity (UNT); (B) Apparent color (uC); (C) COD (mg/L); (D) Surfactants (mg / L), initial sample and remaining after treatment steps, float effluent.

The filtration rate, both in FLA and FLCAG, ranged from 6.0 cm<sup>3</sup> / min to 9.0 cm<sup>3</sup> / min, corresponding to a filtration rate of 30 m<sup>3</sup>/m<sup>2</sup>.day at 46 m<sup>3</sup>/m<sup>2</sup>.day, a little below that recommended by Di Bernardo et al. (2011) for water supply, which is 12 to 20 cm<sup>3</sup>/min, corresponding to a filtration rate of 60 to 100 m<sup>3</sup>/m<sup>2</sup> day.

The results for turbidity and apparent color in the six tests showed a removal above 94% and 72%, indexes lower than 1 UNT and 43 uC, respectively, in relation to the initial sample, for the jars test and the floated effluent.

There was a small increase in turbidity and apparent color when passing through the FLCAG, mainly occurred in test 1, possibly due to the installation of the coal inside the filter, because to minimize the effect wall was used thinner material, thus avoiding the path the water near the wall.

The COD removal results obtained in the tests were above 90%, after the complete treatment cycle with residual of 29 mg/L, for an initial COD of 313 mg/L.

The results of the surfactants are differentiated from the others previously discussed, with an increase after the chemical process; this occurs as a function of the sodium hydroxide and aluminum sulfate that was used in the pretreatment. The results point to a reduction of 57% in surfactants, with an initial mean of 1,59 and, after the treatment process, 0.67 mg/L.

#### Full Cycle Real Water Sample Trials

Analogously to the procedures performed for GW, the tests were performed with jars test and the floated effluent; the results for real gray water were: sodium hydroxide dosage of 3,5 ml/L (0.02N NaOH) and aluminum sulfate (Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>) 200 mg/L; 10s fast mixing time, and flocculation optimization 10 min. The programming in the jar test was adjusted to sample temperature of 18°C.

We used filters defined by the best condition, that is, model FLA1 and later passage by FLCAG. In the same way, the water produced in the jar test was divided, the first three jars (1 to 3), after the coagulation and flocculation process, were transferred to the flotation device and subjected to a water recirculation rate with air of 5%, ascending velocity of 3.5 cm/min; and in the last three jars (4 to 6), the collection done after the average time of 10 min, counted from the end of the flocculation. In these jars, as after flocculation there was the rising of the aerated particles, the collection of the water withdrawn from the bottom of the jars had an rising velocity (V<sub>a</sub>) of 1.0 cm/min, since the jug has a height of 15cm.

The control parameters of the tests analyzed in the results were the turbidity, apparent color, COD, and remaining surfactants of the jug and float test effluent, producing six sequential results, leaving the effluent from the jars test, through the sand filter FLA1 and FLCAG.

The results of the gray water analysis originated from the jars test and the flotation device, shown in Table 1 and Table 2.

Table1: Effluent from the actual gray water jug test, stored and submitted to pre-treatment with coagulation and flocculation, 1.0 cm/min rising velocity and sand filtration and adsorption on granular activated carbon.

Parameters Essays pH Turbidity (UNT) Apparent color (uC) Electrical Condition (μScm<sup>-1</sup>) DQO  
(mg/) Surfactants (mg/L)

Sample of GW	-	7.40	36.6	276	311	228	1.09
Jars test effluent	-	4.40	20.1	124.2	209	114	1.2
Variation (%)	45.08%	55.00%	32.80%	50.00%	-10.09%		
FLA1	1	4.45	0.39	23	214	65	1.31
	2	4.50	0.19	23	216	62	1.2
	3	4.40	0.22	24	212	75	1.17
Mean	4.45	0.27	23.33	214.00	67.33	1.23	
Variation (%)	99.27%	91.55%	31.19%	70.47%	-12.54%		

FCAG	1	4.77	0.02	20	207	43	0,65
	2	4.69	0.36	20	207	45	0,60
	3	4.90	0.4	23	208	36	0,21
Mean	4.80	4.80	21.00	207.33	41.33	0,49	
Variation (%)		99.29%	92.39%	33.33%	81.87%	55.35%	

Table2 – Effluent from the gray-water float, submitted to pre-treatment with coagulation and flocculation, rising velocity 1.0 cm/min and sand filtration and adsorption on granular activated carbon.

Para-meters	Essays	pH	Turbidity (UNT)		Apparent color (uC)		Electrical Condition (μScm <sup>-1</sup> )	DQO
(mg/L)	Surfactants (mg/L)							
Sample of GW	-	7.4	36.6	276	311	228	1.09	
Floated								
Effluent -	4.40	5.65	46.3	195		1.23		
Variation (%)	84.56%	83.22%	37.30%		-12.84%			
FLA1	1	4.60	0.52	23	197	56	0.97	
	2	4.40	0.6	22	198	58	1.06	
	3	4.50	1.21	22	196	58	1.21	
Mean	4.50	0.78	22.33	197.00	57.33	1.08		
Variation (%)	97.88%	91.91%	36.66%	74.85%	0.92%			
FCAG	1	4.78	0.02	21	195	34	0.19	
	2	4.90	0.08	21	194	33	0.16	
	3	4.75	0.02	20	191	35	0.24	
Mean	4.80	0.04	20.67	193.33	34.00	0.20		
Variation (%)	99.89%	92.51%	37.83%	85.09%	81.96%			

## Conclusion

Results showed that gray water, properly treated, constitutes an efficient alternative source which can be used for reuse of non-potable purposes, such as discharge of toilets, irrigation of gardens, washing among others. Regarding the gray water treatment, among the six materials studied for filtration, the filter material which presented the highest removal of the parameters under study was composed of sand, grains between 0.30mm and 0.59mm, effective size 0.42mm, characterizing finer grains, larger contact area and smaller spaces between the grains. The physical process evaluated to treat GW in the sand filtration and adsorption studies in granular activated carbon, preceded by chemical pretreatment, coagulation, flocculation or flotation, showed high removal of parameters such as turbidity, apparent color and COD, with efficiency, respectively 94% to 99%, 72% to 92% and 81% to 99%; for surfactants, the removal rate was lower, in the range of 55% to 80%, when compared to the initial sample. Considering this study, the use of this alternative water source, when properly treated, helps to provide the sustainable use of resources, increasing sustainability in buildings.

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## A Study on Zero-Waste Project With Special Emphasis on The Destination Fortkochi

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### Abstract

Zero waste is a philosophy that encourages the redesign of resource life cycles so that all products are reused. The goal is for no trash to be sent to landfills or incinerators. Waste is the first and foremost important problem in the area. Due to the consumption patterns of the locals and the sedentary lifestyle of the present generation the culture has transformed into a throw-away culture strongly influenced by consumerism.

The Fort Kochi Zero-Waste Tourism Destination project which was launched in 2010, on an experimental basis is aimed at ensuring scientific garbage disposal in the tourist locale, that was once famed for its clean streets. A joint initiative of Kerala Tourism, State Kudumbasree Mission and the Corporation of Cochin, the Rs 43-lakh project aims to segregate, collect and treat waste in divisions 1 and 27 of the corporation with the help of residents, shop owners and visitors.

**Keywords:** zero waste, Kudumbasree, waste management.

**Main Conference Topic:** Sustainability, Environment and Risk Management.

### Introduction

The Destination Fort Kochi

Best known for its historical and cultural significance, a town which lives in harmony with 32 different communities is a fully packed residential area. The Zero-Waste Project which was launched in 2010 on an experimental basis was planned to be implemented in the divisions 1 and 27 of the area(fig.1). A highly populated area with low lying land and the business commercial centre it acts as a mass touristic spot for tourists from all round the world. Therefore, the project zero-waste is an inevitable project that has to be implemented in the near future.

Zero waste is a logical planning approach incorporating principles of effective human and material resource utilization to avoid the conversion of discards into waste – an efficient form- in a manner that revitalizes the local economy. Zero waste is the new school of thought in resource management and is a philosophy too. Zero waste is now becoming a mantra for business houses, communities, and governments across the world. It is a new direction for attaining efficiency. It is a way to serve the society and nature; Indian experiments show that zero waste provides for action for waste prevention through waste reduction with decentralized approach for employment generation, environment protection and poverty reduction.

Kudumbashree, a community organization of Neighborhood Groups (NHGs) of women in Kerala, has been recognized as an effective strategy for the empowerment of women in rural as well as urban areas: bringing women together from all spheres of life to fight for their rights or for empowerment.

A joint initiative of Kerala Tourism, State Kudumbasree Mission and the Corporation of Cochin, the Rs 43-lakh project aims to segregate, collect and treat waste in divisions 1 and 27 of the corporation with the help of residents, shop owners and visitors.

KeralaTourism

Directorate of Tourism under Department of Tourism, Kerala is responsible for the promotion of tourism and tourism related activities.

'Thanal'(Shade), a project which was a joint program of Kerala Tourism (Zero-Waste Kovalam, Trivandrum, capital of Kerala), in which the hospitality industry, local self-governments, Kudumbasree groups, traders, schools and public joined to make it a success. In this background,Kerala Tourism decided to replicate the experiences of Zero Waste Kovalam to other tourist destinations across the state.

A very recent success story of Alapuzha was praised by the UNEP. The town best known for its backwaters and canals, may now be basking in the glory of being listed among five global places at fighting trash. Allepey succeeded in bringing about necessary behavioral changes among the sanitation workers and common public. These models can also be replicated into this destination -Fort Kochi and also across the state.

#### Components of a Zero Waste System

1. **Decentralised Resource Recovery Facilities:** Handling source segregated discards at source is the best and efficient form of resource recovery. Changed behavior and minor structural facilities will enable this. Household level composting, neighborhood level composting, institutional level composting or bio-methanation, segregated collection and storing of non-biodegradable discards etc. forms the part of Decentralised Resource Recovery facility. Even if there is a need for a common facility the volume handled should not exceed 500 kg per day.
2. **Material Substitution:** Unviable and unsustainable materials posing threat to the waste handling systems as well as the environment should be replaced with locally available and environmentally friendly materials or services.
3. **Extended Producer Responsibility:** The post-consumer products which cannot be recovered safely in the locality should be sent back to the manufacturer or the manufacturer should pay for its safe disposal.
4. **Participation and Ownership:** The system designed should ensure the participation from various quarters of the community and collective ownership for its sustainability.
5. **Education and Training:** Continuous awareness and education program creates a platform for a zero waste system. Training programs meant for capacity building in the community will see the system running smoothly.
6. **Policy/Law:** There should be a policy support from the institution or LSG to support the entire activities directed towards zero waste. Essential laws can be implemented to make it fool proof.

#### Strategy

1. Resource Recovery and Resource Conservation.
2. Decentralized Systems.
3. Capacity Building in community.
4. Participation and Ownership.
5. Extended producer responsibility.
6. Livelihood generation.

#### Process towards Zero Waste

1. **Social preparedness activities:** A behavioral change is necessary in the society in relation with the waste handling and resource conservation. It can be achieved only through slow but persistent efforts over a period of time.
2. **Involve and Empower:** There should be a Bottom-Up-Approach in involvement and also to the making of policies and regulations. The extent of involvement of local community decides the fate of a waste management program. Visible changes in the community environment will be the result.
3. **Building relations/partnerships:** Building relations within the community as well as with government and private institutions will build confidence, credibility, social responsibility, and strength to the systems. For example development of Govt-private partnership to tackle waste in Zero waste Kovalam.
4. **Livelihoods:** It is better to ask people to take up some marginal activities which will arise as part of better material use policy in the community. This will build confidence in them to scale up and explore new fields of similar opportunities. Eg: Resource Recovery Organic Farming, marketing, paper based products, coconut shell based products etc. were some of the elements in 'Thanal' project in Kovalam.
5. **Totality approach:** A comprehensive approach is needed where local demands are addressed. The plan should be for enhancement of social, economical, and ecological standards of the locality. For example: Water conservation and prevention of water pollution, awareness on sanitation will stop littering, marketing systems will supplement production processes in the locality etc.

6. Information and Documentation: Collection of information and feedback is necessary for streamlining the processes. A better information and communication system has to be set up for management purposes. Documentation will help in motivation of people and in research.

### Related Work

“A comprehensive review of the development of zero waste management: lessons learned and guidelines” - AtiqUzZaman

Zero waste is a visionary concept for confronting waste problems in our society. The idea is being developed and implemented in various sectors including waste management and treatment, mining, manufacturing, and urban development. The zero waste concept has been embraced by policymakers because it stimulates sustainable production and consumption, optimum recycling and resource recovery.

“Optimizing Urban Material Flows and Waste Streams in Urban Development through Principles of Zero Waste and Sustainable Consumption” -Steffen Lehmann

### Behaviour Change for Waste Prevention

The growth of the economy cannot continue endlessly (a fact already pointed out by [34]). Our increasing affluence allows us to accumulate massive amounts of stuff, and we build increasingly larger dwellings to store it. So the core question is about how to best change behavior and shift attitudes to reduce consumption (and therefore avoiding the creation of waste in the first place). How do we convince society to consume less? Education programs aimed at all levels of schooling have proven to be effective. Public education aimed at ‘zero waste’ participation surely is a key to success. Changing behavior is easier in smaller towns, but more difficult in large cities. As has already been pointed out, education to raise awareness is essential, but equally important is that the rules of waste separation are well explained. This suggests that the real problem is not technology, but acceptance and behavior change. What is needed is social innovation rather than a sole focus on technological innovation. The necessary connection between waste policies and emission reductions are not always well understood and made.

So, what are the main barriers to zero waste?

- Short term thinking of producers and consumers
- Lack of consistency in legislation across the states
- Procurement vs. sustainability: the attitude that the cheapest offer gets commissioned
- Lack of community willingness to pay

### Implementation

Present status of the project Zero-Waste Fort Kochi: Not Implemented

Future: Restarting the project.

### RESULTS

Fig. 2 Types of Waste collected (tons) from Division 1 on a daily basis which is sent to the Brahmapuram Plant (landfill) Food waste: 5 tons + 1.5 tons on season time; Plastic waste: 2 tons + 1.5 tons on season time

Interpretation: After the implementation of the zero-waste project the mentioned amount of wastes can be reduced to 1/3rd by implementing a series of decentralized Resource Recovery Facilities. It is better to split the components of the RRF since land is not easily available. Methods such as biogas plants, decentralized sorting and wormi-composting/windrow composting facilities at each street, community gardens are suggested solutions to the problem.

Reasons why the project proposals get delayed or not completed

Fig. 3 Interpretation: The factors behind the unsuccessful story of the project. Reference (URBAN DESIGN COLLECTIVE-URU GALLERY, MATTANCHERY)

Transport 10,038 Crores

Heritage 197.5 Crores

Welfare +Poverty Alleviation 179 Crores

Housing 152 Crores

SocialInfrastructure32.4 Cr

Water and Sanitation 17.6 Crores

Social Infrastructure + Transport 15 Crores

Social Infrastructure + Welfare 4.67 Crores

Unawareness of the benefits of biogas plants makes the public oppose to the philosophy of zero-waste. They do not comply with the regulations unless it is made strict. Lack of coordination between Kudumbasree and Corporation and the political variables makes it more difficult to succeed. Change of Government can cause project delay. Also the defaults of the Trickle-down-Effect are seen - the money which is scattered from upper governing bodies to the lower governing bodies gets biased according to priority and thus funds may be allocated less.

### Trickle Down Effect?

The broad idea of trickle-down economics is that giving economic help to people at the top of society should, through one of various possible mechanisms, generate benefits for those in layers further down.

Table 1 Funding allocation for various sectors of development across the Kochi city region

### Conclusion and Suggestions

Based on the success stories of Thanal in Kovalam and Allepey recognition we can say that this project will be successful in the future years. Together with the 14 Residential Associations in Division 1 and 27 and with the support of the NGO's and the Cochin Corporation (the authority which has the control of the project), all can go hand in hand for this mission of cleaning. Strict policies and fines/regulations should be made on littering and waste dumping on a large or even a small scale. Commercial institutions like hotels and restaurants should develop their own Resource Recovery units which can minimize the amount of waste from the region.

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Urban design collective (team of researchers)- uru gallery, mattanchery, 2017

Brief biography of the author

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Assistant Professor for Tourism and Travel Management in the Department of French. Completed the Masters degree in 2017 (MTTM). Gained Academic excellence for Tourism in 2016 and 2017 batch. Joined as a Guest lecturer in St. Teresa's College from June 2017. Interested areas include Ecotourism, Rural Tourism, and Hospitality related topics.

## Responsible Tourism a tool for sustainable development- a case study on Kumarakom, Kerala

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### Abstract

*Responsible tourism is all about creating better places to live in and better places to visit. They are complementary to each other. We cannot offer a better place to visit for our tourists in a situation where the local people are not enhanced in social, economic and environmental activities. So equipping ourselves is important in order to provide boundless enjoyment to the people visiting us. It is possible through the motto of Responsible tourism "Better together". The role of each and every stakeholder is important in ensuring responsible tourism.*

*The sustainable development approach to planning tourism is very important because most tourism development depends on attractions and activities related to the natural environment, historic heritage and cultural patterns of areas. This project is led by the local panchayat with the active participation of the community and supported by the tourism industry. In Kumarakom, almost all major hotels and resorts participated actively in the RT initiative by procuring local produce, providing employment opportunities to the local people, promoting local enterprise, assisting in environment upgradation programmes and promoting "village life experience" tour packages. Recognition for the venture came quickly, in the form of the Grand Award from the Pacific Asia Travel Association (PATA) and an award from the Ministry of Tourism, Government of India.*

**Keywords:** responsible tourism, sustainable development, village life experience, tourism in Kumarakom.

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

It can be seen that "People- Planet- Profit" has become the mantra of this moment and "Sustainability", "Social Responsibility" etc. have become the most discussed and concerned matter in this year 2017 to contribute to make this world a better place and to advance sustainable development in all its three pillars. This World Tourism Day "whenever you travel, wherever you travel, remember to respect nature, respect culture and respect your host.", said UNWTO Secretary-General Taleb Rifai.

Responsible Tourism is envisaged by keeping in mind the trio responsibilities i.e. social, environmental and economical. Responsible tourism is any form of tourism that can be consumed in a more responsible way. "Responsible tourism is tourism which minimizes negative social, economic and environmental impacts, generates greater economic benefits for local people and enhances well-being of host communities". Though the concept of responsible tourism was there right from 1996, it was after the Cape Town Declaration of 2002 that we got a detailed picture of responsible tourism. Adopting responsible tourism had become a necessity rather than a choice. The Global Sustainable Tourism Council (GSTC) formed for initiating this in 2007 and it establishes and manages global sustainable standards with the aim of increasing sustainable tourism knowledge and practices among public and private stakeholders. They have developed a set of common framework to be followed to establish sustainable tourism as a fact. The success of responsible tourism requires equal effort from the tourists as well as the local community. For this awareness about the need of having responsibility is a prerequisite. The meaningful involvement of the local community of tourist destination will surely reap good results. It will create more job as well as entrepreneurial opportunities and ensure regional economic growth.

Kerala holds a dominant position in the availability of plenty of natural resources, skilled manpower, supportive entrepreneurial community, strong local self-governments, streams of professionals and academicians, responsible media and responsive tourism industry, providing the state an ideal setting to implement and practice 'Responsible Tourism'. In Kerala responsible tourism is practiced since 2007. The initiative was first implemented at four destinations, including Kovalam, Kumarakom, Thekkady and Wayanad. Among these destinations Kumarakom was honored by Ministry of Tourism, Govt of India for the best Responsible Tourism initiative in Kerala and it also bagged

the national award for rural tourism. Later it was also implemented in Kumbalanghi in Ernakulam, Vythiri and Ambalavayal in Wayanad and Bekal in Kasaragod in 2012.

### Research Methodology

The paper makes an effort to study the concept of responsible tourism and the practice and benefits of responsible tourism in Kumarakom, Kerala. It is descriptive in nature and the data have been collected from both primary sources - personal interview with the officials of responsible tourism and local community were conducted at the destination as part of the evaluation of RT implementation at kumarakom; and secondary sources - published articles, books and official websites.

#### Objective of the Study

- To understand the concept of Responsible Tourism and its principle components.
- To study the implementation and benefits of Responsible Tourism in Kumarakom; one of the RT destinations of Kerala.
- To study on the three areas – the economic, social and environmental aspects of the destination.
- To understand the guideline for Responsible Tourism issued in the Cape Town declaration and by the Global Sustainable Tourism Council.

#### Background of the study

The Cape Town Conference on Responsible Tourism in Destination, preceding the World Summit on Sustainable Development in Johannesburg in 2002 was attended by 280 delegates from 20 countries. Though the concept of responsible tourism was there right from 1996, it was after the Cape Town Declaration of 2002 that we got a detailed picture of responsible tourism. As per the declaration Responsible Tourism is that which

- Minimizes negative economic, environmental and social impacts.
- Generates greater economic benefits for local people and enhances the well being of host communities, improves working conditions and access to the travel and tourism industry.
- Makes positive contributions to the conservation of natural and cultural heritage, to the maintenance of the world's diversity.
- Provides more enjoyable experiences for tourist through more meaningful connections with local people and a greater understanding of local cultural, social and environmental issues.
- Provides access for physically challenged people.

A set of guidelines were also developed taking into account the economic, social and environmental aspects in the Cape Town Declaration.

### Related work

Chettiparamb and Kokkranikal (2015) had made a case study of Kerala regarding sustaining responsible tourism. The aim of this paper was to discuss the processes involved in operationalizing the concept of responsible tourism within the state of Kerala, India and analyze some of the projects. They have discussed how the implementation is done in different destinations and the organizational structure of the committee for implementing responsible tourism. They also discussed about the role of self-help groups like Kudumbasree and the local government in the success of responsible tourism.

First, sustainable tourism is based on an awareness of sustainability and ethics, supported by environmental education and information for all stakeholders on both the demand and supply sides. Second, it also relates to the above-mentioned political dimension as it requires the informed participation of all relevant destination stakeholders, a consensus, a critical mass and strong political leadership to enable its implementation. Third, sustainable tourism should maintain a high level of tourist satisfaction, thereby meeting market needs (Mihalič, 2013; UNWTO, 2004). More specifically, in existing market economies the latter also assumes a willingness to pay for sustainability.

#### RT Classification

The two models which were developed for responsible tourism was enterprise model led by the tourism industry and the destination model led by the local bodies. Both these models support and complement each other to make the

destination sustainable. The RT Classification scheme was the first step for the enterprise model. A committee was nominated by the Government to conduct the RT Classification. The configuration of the RT Classification Committee (RTCC) was as follows;

- Secretary Tourism - Chairman
- Director of Tourism -Convener
- Three experts nominated by government from 3 thematic areas (Social, Economic and Environment)
- Two representatives nominated by government from the tourism accommodation providers who are practicing sustainability principles.
- Two representatives nominated by government from among tour operators who are promoting responsible travel.

### Criteria for RT Classification

Responsible Tourism Criteria have been grouped into 4 key areas viz. Sustainable Management, Socio Cultural Responsibility, Economic Responsibility and Environment Responsibility. Potential indicators have been identified under each criterion which is quantifiable and measurable. Scores have been assigned to each potential indicator. The properties, who would like to get classified, need to get a minimum score in each sub group to become eligible for the classification. The final classification is awarded based on the total score obtained by the property. Presently the classification is done only for properties like accommodation by hotels, home stays etc. The major criteria used under each sub-group are given below.

#### Sustainable Management Criteria

The first step towards achieving sustainable business practices is creating a sustainability management system (SMS) that includes transparent, documented policies and procedures implementation and communication plans. The primary purpose of the sustainability management plan is to guide decision-making, management, and the daily operations of the business in a sustainable manner.

Following are the Sustainable management criteria considered for the classification:

- Approvals/Classifications from Tourism Ministry/Department
- Customer satisfaction is measured and corrective action taken where appropriate
- Realistic promotional materials and service delivery
- Information on & Interpretation of nature and local culture
- Personnel Training & Management

#### Socio-Cultural Responsibility Criteria

Socio-Cultural responsibility focuses on the efforts of the properties for community development, promotion of local arts and, culture, addressing social issues etc. The following are the criteria included under this head;

- Land procurement and impacts on local community
- Support to Community development initiatives
- Code of conduct for Management, Staff and Visitors
- Code of conduct for visits to culturally and historically sensitive sites
- Policy against Child abuse
- Equity in hiring women
- Promotion of local art and culture
- Attempts to promote local souvenirs

### Economic Responsibility Criteria

Economic Responsibility criteria measure the efforts of the property in contributing towards the economic benefit to the local community including employment. The following are the criteria included under this head;

- Local Employment
- Purchase of local goods and services
- Support of local small entrepreneurs
- Wages, staff welfare, and legal protection
- Economic contributions to protection of natural, cultural and built environment

### Environmental Responsibility Criteria

Environmental responsibility focuses on energy and water conservation aspects, waste management, greenhouse gases etc.

- Sustainable sitting and design
- Locally appropriate principles of sustainable construction
- Code of conduct for visits to environmentally sensitive sites
- Environmentally friendly purchasing policy
- Energy Conservation
- Water Consumption
- Waste Management
- Attempts to reduce Green House Gas emissions

### Classification Scores

Table 1 A total score of 1000 has been divided into under four responsibility categories

Sustainable Management	200
Socio Cultural responsibility	250
Economic responsibility	250
Environmental responsibility	300
Total	1000

Table 2 Properties are expected to achieve a minimum score in each responsibility areas to qualify for classification as given below:

Sustainable Management	100
Socio Cultural responsibility	125
Economic responsibility	125
Environmental responsibility	150
Total	500

The properties that have scores between 750-1000, 600-749 and 500-599 will be classified into Platinum, Gold and Silver respectively.

### Experience of Responsible Tourism from Kerala Tourism Industry

In Kerala responsible tourism is practiced since 2007. The pilot launching was done in four destinations- Kovalam, Kumarakom, Thekkady and Wayanad. Later it was also implemented in Kumbalangi, Bekal and Ambalavayal in 2012. It can be seen that RT is implemented in all destinations under the leadership of State Level Responsible Tourism Committee (SLRTC). Three working groups i.e. economic, social and environmental are constituted and along with that other cells like technical support cell, quality cell etc. ensure the proper implementation of RT in these destinations. A price fixing committee was also functioning in the initial stage. The Samrudhi Activity group was

operated by Kudumbasree members. Samrudhi has assumed the role of procurement and supply of local produces, perishable as well as non-perishable, to the hotels restaurants. The farmer groups and homestead farmers were the producers of the supplies and formed the first link in the supply chain.

#### Model for village life experience

Kumarakom has become a very popular tourist destination in a short period. It is the home to a wide variety of flora and fauna. Kumarakom Bird Sanctuary is a noted bird sanctuary where many species of migratory birds visit. The Vembanad Lake, the largest backwater in Kerala, is habitat for many marine and freshwater fish species and it teems with Karimeen (Pearl spot also known as *Etroplus suratensis*) shrimp (*Metapenaeus dobsonii*) common name Poovalan chemmeen. Kumarakom has a moderate climate throughout the year. It is a balanced tropical climate, which has two monsoons south west and north east. The average rainfall is 1100 mm. Fishing, agriculture and tourism are the major economic activities. Kumarakom's perfectly balanced tropical climate is very conducive to cultivation. The place has expanses of mangrove forests, paddy fields and coconut groves. Fruits like Banana, Mango, Jackfruit, Ambazhanga, Puli (Tamerind), Chaambenga, Peraycka (Guuva), Aathaycka and Pineapple grow here. Also, cocoa and coffee, chena(yam) and chembu (colocasia), grow well and were cultivated under the coconut trees. This rich agricultural environment is mainly irrigated using interspersed waterways and canals of the Meenachil river.

Kumarakom is declared as a Special Tourism Zone by Government of Kerala in 2005. The department of tourism, Govt. of Kerala, organized a State-level consultation on responsible tourism in association with the International Centre for Responsible tourism-India (ICRT India) and EQUATIONS (Equitable Tourism Options) at Trivandrum on 2nd and 3rd February 2007. The SLRTC (State Level Responsible Tourism Committee) met on 20th April 2007 and decided to take up the implementation of Responsible Tourism initiative in phases. Kumarakom was identified for the implementation of Responsible Tourism in the first phase along with Vythiri, Kovalam and Thekkady. The efforts to launch RT at Kumarakom started in May 2007. The Destination Level Responsible Tourism Committee and the three working groups in economic, environmental and social areas were formed in this meeting. Kumarakom Grama Panchayat took the lead in implementing the RT concept at Kumarakom. Among the four destinations, implementation of RT is considered to be most successful at Kumarakom.

#### RT and Benefits to the local community

The role of RT cell was significant in reaping benefits for the local community. They got the opportunity to make use of their traditional lifestyle and cultural talents to get economically rewarded. The RT Cell was instrumental in establishing units for vegetable cultivation, fishprocessing, chapatti making, chicken processing, supply of tender coconuts, gift making, pappadmaking, handicraft and painting, souvenir, and performing groups like Shinkarimelam and othercultural groups. The ownership and participation was different in each of the destinations.

Some examples of benefit to the local community from Kumarakom tourist destinationsbecause of the implementation of responsible tourism are as follows.

The RT Cell identified several social issues that 'irritated' the local community like pollution, displacement of local people, conversion of agricultural land to non-agricultural uses by filling paddy fields, denial of local access to the backwaters by tourism properties, tourism related immoral activities, increasing consumption of alcohol and tendency for drug usage and encroachment of backwater shores by tourism properties and addressed to a great extent

- A sewage plant set up at Kumarakom is intended to control the pollution of Vembanad Lake caused by the houseboats.
- Ban on use of plastic items was strictly enforced in Kumarakom Panchayat.
- The bird sanctuary area was declared as a plastic free zone.
- A walkway project provided the tourists and the local residents alike to get access to the lake.
- Converted uncultivated land back to cultivated land.
- Guard against immoral activities and atrocities against women.
- Created difficulty in granting of licenses to tourism properties to reclaim and encroach to the backwaters.
- Development of infrastructure.

- A drinking water scheme, for the benefit of local community was set up with the cooperation of the hotel industry at Kumarakom.
- The street lighting in Kumarakom was improved.
- Help in the development of entrepreneurs.
- Since there is no intermediary, the benefits of RT movement go straight to the local community who produce perishable and non-perishable items for the tourism enterprises.
- Tour packages like "Village life experience" and "A day with the farmer" give opportunities to tourists to experience the village life and it benefited the local community.

So the understanding of the benefits for local community helps in recognising the fact that RT can be a boon if properly practiced. The other destinations launched in the second phase of RT are also reaping similar benefits. Kumarakom is fast moving to become the international model responsible tourism destination.

The following table shows the income generated from different tourist destinations in Kerala under Responsible Tourism as on March 2016. About 1300 families in Kerala from different destinations have so far benefited from Responsible Tourism.

Table: 3 Income generated from different Tourist Destinations

Tourist Destination	Income Generated
Thekkad	4.83 Crores
Kumarakom	4.30 Crores
Wayanad	93 Lakh
Kovalam	72 Lakh
Bekal	12 Lakh
Kumbalanghi	7 Lakh

## Conclusion

Responsible tourism is all about creating better places to live in and better places to visit. They are complementary to each other. We cannot offer a better place to visit for our tourists in a situation where we pay very low or do not give employment to the local people. So equipping ourselves is important in order to provide boundless enjoyment to the people visiting us. It is possible through the motto of RT "Better Together". The role of each and every stakeholder is important in ensuring responsible tourism. The RT project had so far succeeded in creating visible benefit to the local community on economic and environmental fronts. The implementation of Responsible Tourism in Kerala Tourism Industry is so far well implemented. But a strict regulation from the governing authority is necessary for the prevention of loopholes in its administration. It should help in reaping economic benefits like direct employment generation, entrepreneurial growth and as such the economic development of the locality. It should also ensure social benefits like preservation of the traditional knowledge and the ethnic culture of the community living there and last but not least it should lead to the preservation of the ecosystems and natural resources of the destinations. All these will create a group of happy hosts who will welcome their guests with an attitude of "Athithi Devo Bhava".

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## Is recycling worth it? Three trends that can cut costs.

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### Abstract:

*Sustainability, in the eyes of the customer, can be make-or-break for a company's profitability. Even though customers highly value sustainability, they are not willing to absorb the cost of it. This article focuses on recycling efforts of manufacturing companies headquartered in the United States. The aim is to identify industry-wide best-practices along with new and emerging trends in reusability and how companies are able to cut costs instead of incurring them. It will also showcase a specific example of what a successful corporate recycling program looks like.*

*Information contained in the article includes qualitative data analysis researched from academic articles, business journals, and corporate publications. This article highlights the importance of a company's environmental impact. It will be shown that reducing waste, and reusing manufacturing materials that were once thrown away can not only reduce a company's carbon footprint, but can also increase its bottom line. It will also be proved that success in sustainability will only be seen if recycling programs are incorporated in a company's strategic plan and valued by all internal and external stakeholders.*

**Keywords:** sustainability, recycling, upcycling, profit margins, waste reduction, going green

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Making profits is not a new idea. It should be no secret to anyone that a company's main mission is to make money. A company makes money for its CEO, for its Internal Stakeholders, for its external stake holders, and in many cases, for its employees. As a result, a manager clearly defines a business strategy in the name of making more money. If a change is made and the monetary results do not show up in a reasonable amount of time, the manager makes another change, or the manager is out the door. Of course, there is a lot more to it than that. There are many layers of cost streams and revenue streams that ultimately make up a profit and loss statement.

Profitability can be looked at from the perspective of either increases in revenues or reductions of costs. The more a company can utilize both of the visions of profits, the higher they can soar.

In a similar vein, recycling is not a new idea, either. Its roots in the United States go as far back as the 1940's and gained widespread acceptance into American culture in the 1970's (Recycling in the United States, 2017). Merging recycling into corporate America has taken a bit longer to gain acceptance. As municipalities jumped on the "Reduce, Reuse, Recycle" bandwagon, companies located within these municipalities were forced into mandated recycling programs. However, as time continued marching forward, it became clear that companies could not only recycle bottles and cans, they could recycle manufacturing materials as well.

With little research, it is very clear that manufacturing companies produce a profound amount of waste. Manufacturing companies even produce waste that is potentially biohazardous and needs to be sterilized before it can be added to the waste stream. It is the goal of this study to prove that reducing this waste and reusing it will have a beneficial effect on costs and profits.

In the eyes of these authors, companies that place a high value on recycling and waste reduction can see overall profits jump in comparison to those that do not. This paper will attempt to showcase the possibilities when company leadership puts recycling first. When it comes to manufacturing, three emerging trends have done a good job showing how these two concepts, profitability and recycling, fit so nicely together. Later, this paper will show the ways in which incorporation of these three trends into a strategic plan will benefit both external and internal stakeholders.

Trend 1: Advancements in technology means more plastics are recyclable than ever before.

This first trend is incredibly important. One would be remiss if they underestimated the importance of plastics throughout the history of modern production. From transportation to communication to safety to health care, plastics have shaped our world into what it is today. Its beneficial qualities and low cost of production make plastics a worldwide game-changer.

There are over two dozen types of plastics being manufactured today, and with special additives for different applications, that number goes into the hundreds. When specifically looking into plastics used in healthcare manufacturing, many of them were originally considered unrecyclable and go straight into the landfill. As manufacturing increases, the amount of plastics waste entering this waste stream increases as well.

As these and other types of plastics were being made to make our lives easier, the idea of what to do with it after it was no longer needed took a while to manifest. In fact, Douglas Main stated in an article recently in *Newsweek* that throughout history, “humans have produced more than 9 billion tons (or 8.3 billion metric tons)” of plastic (Main, 2017). Main goes on to state in his article that “to date, humans have junked 7 billion tons of plastic waste, only 9 percent of which has been recycled. A total of 12 percent has been incinerated, and 79 percent ended up in landfills or the environment, particularly the ocean. At the current rate, humans will produce 13 billion tons of plastic waste by 2050.”

According to Kari O from postconsumers, “Different kinds of plastic can degrade at different times, but the average time for a plastic bottle to completely degrade is at least 450 years. It can even take some bottles 1000 years to biodegrade! That’s a long time for even the smallest bottle. 90% of bottles aren’t even recycled...Bottles made with Polyethylene Terephthalate (PET or PETE) will never biodegrade. (Kari O, 2017).

This may be a staggering amount of waste, but it is also a tremendous opportunity for manufacturers in every industry, including healthcare manufacturing. Plastics as feedstock are used in nearly every facet of manufacturing. For healthcare manufacturers, it usually comes in the form of sterile containment of supplies and inputs. For sterilization, this usually means twice the plastic is used to maintain the sterility of the supply item. Multiplied across many production steps one has got tons of waste. The first step in the process of removing it from the waste stream is getting it to a recycling center. Once there, plastics may go through one of four common recycling processes.

The first option for plastics is closed-loop recycling. This method is fairly common and requires that polymers are recycled for the same initial use. For example, a recycled plastic bag is shredded and broken down to be used as feedstock material for a new plastic bag. However, very little post-consumer plastic is actually recycled this way.

The second method is called mechanical recycling. Also known as downgrading or down-cycling, this method uses recycled plastics for production of a product with a lower value use, such as using recycled PET bottles to make carpet. It keeps the material out of the waste stream, but is not a value-added method.

The third current method is chemical recycling. This process requires the use of a catalyst, and currently is very energy intensive. The process chemically degrades polymers back into monomers and other basic chemicals.

It is the last method which gained the most attention for this study. This method is called energy recovery. In this process, plastic is burned (incinerated) and energy is recovered in the form of heat. Just thinking of the concept, it was immediately clear that incinerating plastics would not be very cost effective, though it would still produce by-products from the incineration process. However, a number of innovations in technology are turning energy recovery into a viable method of plastics recycling. As of 2014, there are over 80 municipal or commercial energy recovery plants in operation in the United States and more need to go here. According to the American Chemistry Council (Wilson and Killinger, 2015):

- Plastics are high value “captured energy,” with significantly more captured energy than wood, paper or even coal.
- The United States currently processes 13 percent of its solid waste, recovering enough energy to power homes in five states or the equivalent of 28.6 billion barrels of crude oil.
- Energy recovery facilities can play an important role in waste diversion. Established energy recovery facilities can reduce by 80 percent the volume of waste that goes to landfill.
- Modern energy recovery facilities are greener than ever. Today’s technology allows them to process waste with many emissions lower than some conventional fuels processed in power plants. In fact, EPA estimates that energy recovery technology in use today helps prevent the release of 33 million metric tons of carbon dioxide annually.

Another advancement in plastics recycling comes in the form of more efficient identification and sorting of plastics at recycling centers. Even as recently as August of 2017, plastics sorting machines are capable of sorting up to 6 tons

of plastics per hour. Even in a world where virgin feedstock is as competitively priced as recycled plastic, this machine can make a worldwide case for recycling plastics. Bollegraaf Recycling Solutions has created this machine to take advantage of its propriety optical sorting sensor to become the most effective sorter on the market (SK Polymers, 2017). The introduction of these advancements means that processing times for recycling centers to get materials back to near-virgin purities is drastically reduced.

A third advancement includes expanding the scope and number of polymers that can be used in closed-loop recycling systems. Currently, customers demand their plastics contain virgin polymers due to purity requirements. If plastics recyclers can retain the same level of purity with recycled polymers as virgin feedstock, more recycled material can be used as feedstock.

Wisconsin-based EcoStar is a subsidiary of Placon, a packager behind an initiative to create more purity from recycled PETs or Polyethylene Terephthalates. EcoStar believes it can achieve zero waste and create new value with their innovative packaging products (Placon, 2017). EcoStar leads the way when it comes to transforming curbside recyclables into sustainable packaging for everything from food packaging to protective packaging for medical devices.

These three advancements and other innovations that are being worked on right now all translate into fewer tons of plastic waste making its way into landfills. Companies that expand their plastics recycling efforts and keep their waste out of the landfills will see their waste disposal costs are reduced. This will then ultimately translate into higher profit margins.

Trend 2: The importance of recycling E-Waste.

Manufacturing technology has really come a long way in the last 50 years. Processes were once only completed by hand with paper and pen. The advent of the personal computer made manufacturing processes exponentially more efficient and even did away with some production bottlenecks. With any technology, though, improvements come rapidly. In fact, a computer system built today will become obsolete within three to five years (Koble). Even a slight upgrade to current technology could produce a substantial cost savings, so companies jump at the chance to increase profits. That being said, the number of electronics devices that are becoming unusable for production processes is growing every day.

When new systems are installed, contracts with electronics companies may mandate the replacement of computers and other devices at specific times rather than after a machine is malfunctioning. Many companies in the United States have either an Employee purchase program or an Asset Recovery program in place to deal with old and outdated computers and equipment. Sometimes the computer that is being replaced is perfectly fine. A lot of times, employees can purchase these older machines at drastic discounts and the benefits are two-fold: there is no cost for waste disposal, and employees get viable equipment at reduced prices.

Other times, Asset Recovery programs at larger companies means the old computers and devices can be re-used in another capacity at a different department or location. This also keeps dangerous E-Waste out of the landfills. Any time the longevity of an electronics device can be extended, the longer it will stay out of waste streams.

The future of E-Waste recycling can be seen at the companies that are developing the computers and devices themselves. A company at the forefront of an e-waste revolution is Dell, Incorporated. Dell has established a "Producer Responsibility Policy" (Dell, 2017) which outlines the steps it takes to recover all of its products that have reached the end of their life-cycle. In fact, Dell recognized that a vast majority of its products have gone into many waste streams and wind up in landfills across the world. Knowing the importance of minimizing its environmental impact, Dell took action. Dell has vowed to ban all of its waste from entering landfills, and has a robust system of buybacks and equipment recycling.

Another aspect of this trend lies in making electronics equipment and devices. We live in an age where every device needs to be smaller, faster, lighter, and more efficient. As technology improves, computers and devices become harder and harder to break down into individual components for recycling.

Companies are now trying to manufacture devices that continue to be faster, smaller, and lighter, but also have components that are easily recyclable. These companies will need to put as much importance into their products' end-of-life as they do their useful lives.

A third advancement is recycling robots. In an effort to save space and weight, plastics and metals are stuck together with the latest adhesives, and all this means fewer parts are recyclable and those parts are harder and

often more dangerous to extricate from devices for recycling. Under the best circumstances, the process to destruct these devices for recycling is still done by hand and by humans. This can be very time-consuming and dangerous. Artificial Intelligence has gained a lot of attention lately, and engineers at an Australian university have designed an industrial robot that can learn how to dismantle and separate parts of different brands of flat screen LCD monitors and sort them into various categories for reuse or recycling (Crozier, 2014).

These recycling robots may be at the forefront of burgeoning industry. Being able to adapt to the constructs of the many different brands of LCD monitors means these robots can learn what is recyclable and what isn't. Though they may destroy a few monitors at first, they can learn what to do to destruct each monitor and separate the parts more and more efficiently with each pass. These robots will not only save time and money versus human recyclers, they will also prevent a great deal of injuries sustained by human recycling employees, which will also save companies money.

Trend 3: Closing the loop: Upcycling is the new Recycling.

The term recycling, as mentioned previously, has been around for decades. What was once only a wild idea from "tree huggers" and those hell-bent on saving the Earth, is now a global phenomenon. As more and more cities, states, and countries develop economic plans that involve recycling, the concept is one that a vast majority of people on the planet know and understand.

Upcycling, however, is a very new term, and one that companies should be aware of. Looking at a flow chart of the recycling process, one can see where the concept of upcycling got its start. As we know, recycling takes discarded used materials and brings them back to at or near original form to be used again or for something else. The best example of this is the plastic used in making soft drink bottles. At its base, the end user deposits an empty bottle into a recycling bin, and after a lengthy process, the plastics are used to make carpeting or toys or something other than another soft drink bottle.

Here is where upcycling differs, and the difference is vast. Instead of altering the material to be used for something else, upcycling uses the material either in its current form, or returns it to its original form. The material can then be used to give products more value instead of less. It can be thought of as the circular economy. Waste products are being used to create something new.

A few great examples of this can be found inside your home or apartment. If you have an old t-shirt or a pair of socks that you no longer wish to wear, the normal thing to do is to throw them in the trash. At this point, the article of clothing becomes part of the waste stream. The concept of upcycling takes that pair of old socks out of the trash and converts them into a dust cloth or a kitchen rag. People that usually purchase dust cloths or kitchen rags from the store can save some good money by upcycling their old clothing. Another good example is food waste. Discarded fruits and vegetables can be converted into compost and natural fertilizers for home/community gardens. Doing both of these activities contributes to the circular economy and is doing a small part of upcycling.

The first manufacturing companies that started upcycling their production materials were clothing and textile manufacturers. According to fashion blogger Danielle Vermeer, The US fashion industry has blossomed recently through upcycling. Companies like Trmtab, Seamly, and Sword & Plough all take deadstock from other clothing manufacturers and create value by using that material to create other products (Vermeer).

On the surface, it seems that only fashion and home interiors companies are able to profitably use upcycling to keep waste out of landfills. Consequently, in 2003, the founders of IceStone sought out to do something useful with waste glass (IceStone). Since then, "IceStone has diverted over 16 million pounds of glass from landfills, and has given employees partial ownership of the company, all while manufacturing our product in the historic Brooklyn Navy Yard. Today, IceStone's signature recycled glass and cement products remain an icon of the new countertop industry, delivering unparalleled style that brings design projects to life.

Applying the concept of upcycling to the manufacturing arena is not a radical idea, either. With any type of upcycling, the limiting factor is creativity. Waste of any kind can be used to make something that has value. It is incumbent on the company creating the waste to identify whether or not it could have potential value as something else.

A model for upcycling:

The limits of upcycling seem to be endless. Because of this, there needs to be a template or guide for the use of end-of-life materials. The following model can be used across any industry to help find more and more uses for production related materials that can be kept out of landfills and kept out of waste streams.

This is a basic model and many companies will already complete some of the steps outlined in the process above. The key takeaways include having an established team identify all waste materials used in any type of manufacturing and determining if anything is recyclable or reusable. Another important step is to reach out to individuals, small businesses and waste management companies to determine if your waste materials can be used somewhere else. This step can be difficult to grasp, but getting the correct people into a room together to discuss potential opportunities for scrap materials is the beginning of the journey towards upcycling success. This can be a tremendous advantage for companies that have zero waste as a sustainability goal. Upcycling can raise your company's brand image and move it towards a practice where none of the waste ends up in a landfill.

#### Recycling as a strategic plan:

The key step in the previous section involves getting buy-in from the leadership at your company to invest in creating, or expanding, the strategic plan to include upcycling in its corporate sustainability. If your company's strategy already includes sustainability, it is imperative to make sure it includes reducing the number of waste streams and increasing the number of recycling streams. It also involves adding upcycling and identifying upcyclers as key external stakeholders

In fact, sustainability isn't just some corporate buzz word; it could mean the difference between earning or losing customers. In fact, according to the Governance and Accountability Institute Flash Report for 2017, published sustainability reporting for S&P 500 companies has risen from 20% in 2011 to 82% in 2016 (G&A, Inc., 2017).

The above framework for expanding a company's upcycling efforts is only possible if the company has a commitment from all other stakeholders to place the environment high in their list of values.

#### Where it works:

One of the most successful companies in America is Johnson & Johnson. A number of reasons exist that make Johnson & Johnson an overwhelming success. Most recently, Johnson & Johnson ranked number 35 on the Fortune 500 list and has been named on this same list for the past 23 years. J & J has an impressive list of 24 brands and revenues of 16.5 billion in the last fiscal year. Profits rose 7.3% from last year. It employs over 120,000 people and is headquartered in New Brunswick, New Jersey (Lorenzetti, 2015).

What makes J & J stand out in this author's eyes is its stance on sustainability and recycling. Johnson & Johnson sets the benchmark for all other healthcare manufacturers to be tested. In fact, Johnson & Johnson have utilized all three of the above listed trends to continue to lead the way in sustainability.

First of all, J & J has a commitment to plastics recycling. Most of the Johnson & Johnson family of products has plastic either in the packaging, or as part of the product. Seeing the vast amount of plastics waste entering landfills, Johnson & Johnson launched a plastics recycling program called, "Care to Recycle" in 2014. According to Sustainable Brands, "The campaign offers an array of tips, tools and information to help consumers become better recyclers — including ideas on how to engage kids in the recycling process and a comprehensive list of Johnson & Johnson products that can be recycled. The brand also teamed up with CVS.com to offer free recycling bins, after a consumer study revealed that consumers would be more likely to recycle if they had a bin in the bathroom" (Sustainable Brands, 2017).

Secondly, J & J takes electronics waste and recycling seriously. While a vast majority of their products do not include any type of electronics componentry, some of the products from some of their brands do. In their 2016 sustainability report, J & J states that they collected over seven million electronic devices and reprocessed about 40% of them. Also in 2016, J & J recycled over 327 thousand pounds of electronics components.

Lastly, Johnson & Johnson's Care to Recycle program is a leader in upcycling. This may be a bit of a stretch to tie this into J & J's product lines, but the Care to Recycle program website is full of innovative ideas for families to create new uses for bathroom products at the end of their life cycles. The used bottles and packages do not need to go straight to the garbage can or recycling bin. They can be used to create value for the family, and it might come in the form of using old aerosol cans for indoor bowling pins, or using an old loofah as a unique paint brush. It is creative ideas like these that truly make Johnson and Johnson a leader in waste reduction and innovation.

## Conclusion

In today's world, more and more people are becoming conscious of man's effect on the environment. More and more value is placed on the concept of doing more with less, reducing one's carbon footprint, recycling, and sustainability. Meanwhile, the gears of business continue to grind each and every day and the need to cut costs at every step along the way remains a top priority. Industries that lean heavily on the use of plastics in their production processes need to keep their eyes squarely on sustainability practices to remain relevant.

Companies that incorporate plastics recycling into their business strategies, realize the importance of e-waste recycling, and choose to make upcycling a priority will see waste streams dry up and overall costs reduced. These three trends may not be radically new concepts, but effectively incorporating them into a strategic plan will enable to companies to flourish in today's ever changing business landscape.

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## HDPE-Chitosan composites as potential bone composite materials

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### Abstract

*The marked increase in interest in biodegradable polymers is observed in food packaging applications, medical field etc. The advantages of renewable natural resources are incorporated into conventional polymers to make more sustainable material. In this work, high density polyethylene (HDPE), a thermoplastic polymer matrix was melt mixed with varying concentration of chitosan(biofiller) through a peroxide initiated process using maleic anhydride as compatibilizer. The prepared composites were subjected to mechanical characterization and it was found that the tensile strength and Young's modulus of the composites increased with addition of the biofiller. The impact strength showed a maximum increase of 9.34% in 5 wt% chitosan loaded systems. The plasticizing effect of palm oil on the composite with highest impact strength has also been studied. The effect of the oleic acid component of palm oil provides strong interfacial interaction between the filler and matrix which has been verified through the mechanical studies. The chemical interaction and morphological analysis has been performed using fourier transform infrared spectroscopy (FTIR) and field emission scanning electron microscopy (FESEM). The FESEM images evidenced successful interaction between matrix and the filler. Conclusively, the prepared plasticized composites can be used as a potential material for bone tissue engineering applications.*

**Keywords:** Biocomposites, Chitosan, Palm Oil, Impact strength, FESEM

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

Recently, biomaterials such as chitosan, cellulose, have become a significant research theme because of its degradability, minimum toxicity and environmentally friendly nature. The introduction of biomaterials into synthetic polymers like high density polyethylene (HDPE), polypropylene etc. form biocomposites that can enhance its mechanical, thermal and electrical properties and can be used in packaging, controlled drug release purpose, bone tissue engineering applications etc. Such biocomposites represent a more sustainable alternative to pure synthetic materials due to the added benefit of biodegradable and renewable resources into it (Ho M.P, Wang, Lee, Ho C.K, Lau, Leng & Hui, 2012). The inconsistency in the properties of natural fillers may limit their applications in polymer industry which can be improved by using crosslinkers, plasticizers and compatibilisers. The recent emergence in tissue engineering using biodegradable materials has gained much attention. In bone repair, metallic implants such as stainless steel and titanium have been used as bone templates due to their biocompatible nature. But the uneven growth of bone cells makes these implants causing porosis (Wang, 2003). Hence, degradable implants without any toxic nature and properties similar to those of bone have been introduced. HDPE being the most versatile commercial polymer is commonly used in medical applications such as bone substitutes and in particular surface of total hip replacement implants. Chitin is the second most abundant biopolymer found in nature after cellulose. In its deacetylated component, chitosan can be used for sustainable initiatives. The cationic nature of this biopolymer can enhance the quality of packaging materials, improves the properties of scaffolds used in medical applications etc. The combination of HDPE and chitosan offers the possibility to prepare biocomposites with better biodegradability, economic impact and biocompatibility (Dorozhkin, 2011). Maleic anhydride (MA) can be grafted on to HDPE so as to improve the phase miscibility with a peroxide initiated process using dicumyl peroxide (DCP) as crosslinker. The fatty acids from vegetable oils serve with properties as coupling reagents, plasticizers etc. The filler dispersion and flexibility of the composites can be improved by employing palm oil. The present work focuses on the effects of chitosan as filler and palm oil as plasticizer on the prepared HDPE-Chitosan (HC) composites. The combination of chitosan with a non-toxic and effective coupling agent, palm oil (PO) is proposed to improve the mechanical and morphological properties which may ultimately lead to the development of a better material for tissue engineering applications.

## Related Works

The thermal as well as the mechanical stability of low density polyethylene-chitosan composites were studied by Sunilkumar et al and they found that there was an increase in the mechanical properties of the composites having palm oil as plasticizer. The sustainability of the prepared composites was further substantiated through biodegradability studies using *A.niger* (Sunilkumar M, Francis T, Thachil E T, & Sujith A, 2012). The superior properties of compatibilised recycled polyethylene-chitosan composites with the non- compatibilised samples were studied by Salmah et al (Salmah H, & Azieyanti A N, 2010). They also observed an improved thermal stability and crystallinity for the compatibilised samples. A short review on bioactive composites for bone tissue engineering applications by Min Wang explains the role of biocomposites in medical field (Wang, 2003). Ibrahim et al studied the plasticizing effect of epoxidised palm oil (EPO) on Polylactic acid. There is a significant improvement of mechanical properties hence these materials are proving to be an alternative for conventional polymers. Additionally, EPO can be seen as a potential useful plasticizer (Silverajah V S G, Ibrahim N A, Yunus W, Hassan H A, & Woei C B, 2012).

## Materials and Method

HDPE grade (HD50MA180), 0.950 g/cm<sup>3</sup> density and 20 g/10 min Melt Index was supplied by Reliance Industries Limited, Mumbai, India. Powdered Chitosan (Low Density) was procured from Kerala State Cooperative Federation for Fisheries Development Ltd (Matsyafed) with a deacetylation degree, >85% and was dried overnight at 80 oC prior to mixing. Refined grade palm oil, 0.910 g/cm<sup>3</sup> used in this study was provided by Parisons Pvt. Ltd. KINFRA Park, Malappuram, India. The reagents, dicumyl peroxide and maleic anhydride were of analytical grade obtained from Sigma Aldrich (India).

A series of high density polyethylene-chitosan (HC) composites were prepared using Brabender Plastograph at 160 oC with a rotor speed of 60 rpm. After the initial melting of HDPE varying bio-filler contents (2.5, 5, 7.5, 10, 15, 20 and 25 wt%) were added prior to the addition of fixed amount of DCP and MA. The mixing time was kept constant for all mixes as 20 minutes. The effect of palm oil was studied in 5 wt% CS system by varying its content as 2.5 and 5 wt%. The formulations of the prepared composites are given in Table 1. The composites were compressed with an electrically heated hydraulic press for 4 min at 160 oC under a pressure of 200 kg/cm<sup>2</sup> and cooled to room temperature. The chemical structure and possible interactions of the compressed samples were studied by using FTIR-ATR (Thermo Fischer). The injection moulded samples were used to study the mechanical properties namely, tensile properties using an Instron tensile Tester (Model ASTM D 638) with a crosshead speed of 50 mm/min and impact studies were performed on the above samples using an Impact tester (Model ASTM D 4272). The morphology of the composites was investigated using scanning electron microscopy (JEOL Model JSM - 6390LV). The samples were sputter coated with gold to avoid subsequent charging before analysis.

Sample ID	HDPE (g)	Chitosan(wt%)	DCP(wt%)	MA(wt%)	Palm Oil(wt%)
HC 0	30	0	0.5	2	-
HC 1	30	2.5	0.5	2	-
HC 2	30	5	0.5	2	-
HC 3	30	7.5	0.5	2	-
HC 4	30	10	0.5	2	-
HC 5	30	15	0.5	2	-
HCP 1	30	5	0.5	2	2.5
HCP 2	30	5	0.5	2	5

Table 1: Formulations of the HDPE Chitosan composites prepared

## Results and Discussion

The mechanical properties of the prepared composites such as tensile strength, Young's modulus and impact strength were investigated. Figure 1 shows the effect of filler loadings on tensile properties and young's modulus of the prepared unplasticized HC composites. The tensile strength increased till 7.5 wt % filler loading and it decreased gradually with further addition of filler. The higher tensile strength shows the better interaction between the anhydride

group and hydroxyl group of chitosan. The use of compatibiliser also showed an improvement in the adhesion between filler and the matrix. Young's modulus is an indication of the relative stiffness of composites. The amount of filler used, the orientation of the fillers, the interaction and adhesion between the matrix, and the ratio of the filler to matrix are some of the factors that contribute to the young's modulus of the material. The Young's modulus also shows an increase with the addition of filler. The mechanical properties such as tensile strength and Young's modulus was improved by 11.9% and 67.2% respectively for 7.5 wt% loaded samples.

Figure 1: Tensile Strength (a) and Young's modulus (b) of the unplasticized HC composites with varying filler content

Figure 2 shows the effect of filler loadings on impact strength of the prepared unplasticized HC composites. The impact studies are generally merged into the broad area of damage mechanics. The impact strength of the HC composites increases till 5 wt% of filler loading and was found to gradually decrease with higher filler loadings. The increase in impact strength can be attributed to the higher adhesion between the filler and the matrix. At higher filler loadings there is a possibility for agglomeration within filler and the matrix which can result in the formation of micro-cracks during impact experiments that can result in low absorption of energy, hence low impact strength. Hence, the studies showed that there is a maximum increase of 9.34 % in 5 wt% chitosan filler loading than the neat HDPE composite. As an anisotropic material, cortical bone has a range of associated properties rather than a set of unique values as reported. The values obtained are in close proximity with the reported values (Cheung, Ho, Lau, Cardona & Hui, 2009). So, 5 wt% filler loaded HC composite system has been chosen for the plasticizing effect of palm oil.

Upon the addition of varying amount of plasticizer to the HC composite of 5 wt% filler loading, there seems to be a decrease in the tensile strength and Young's modulus. The oleic acid component of the palm oil not only acts as a Lewis acid catalyst but it also tried to maintained the impact strength of the composite. The highest impact strength was observed for 5 wt% of palm oil concentration. The tensile as well as the Young's modulus of the plasticized composites decreased with increase in the plasticizer concentration due to poor interfacial interaction between filler and matrix polymer, which obstructs stress propagation when tensile stress is loaded and induce increased brittleness. This can be viewed from Figure 3 and Figure 4 given below.

Tensile strength, Young's modulus and impact strength of the plasticized HC composites with 5 wt % filler loadings

Table 2: Mechanical Properties of the prepared composites

Sample Code      Tensile Strength (N/mm<sup>2</sup>)      Young's Modulus  
(N/mm<sup>2</sup>) Impact Strength  
(KJ/m<sup>2</sup>)

HC0	36.86±5	198.21±100	94.15±5
HC1	39.41±10	268.45±101	101.83±20
HC2	40.25±5	295.77±100	103.87±10
HC3	41.89±7	301.48±90	83.62±20
HC4	42.83±4	308.87±95	48.59±15
HCP1	33.16±3	246.18±100	81.095±10
HCP2	29.96±6	156.23±90	101.93±5

The mechanical properties of HC0, HC2, HC3 and HCP2 are further supported by field emission scanning electron microscope (FESEM) images of the tensile fractured surface of the samples given below. The HC3 shows as a ductile morphology and the filler particles can be viewed from the images. HC2 shows a ductile matrix when compared to HC3 which minimizethe number of cracks when subjected to high impact effect. Also a relatively uniform morphology is seen for the plasticized sample when compared with HC2.

The FTIR- ATR spectra of the prepared samples and it explains the chemical interactions involved in the prepared HC composites. The doublet in the spectral range of 3000 and 2700 cm<sup>-1</sup> for HDPE is assigned to the C-H stretching vibration. The slight shift with decrease in intensity of the CH stretching indicates the interaction of HDPE with chitosan. A small peak observed at 1716 cm<sup>-1</sup> is due to C=O stretching vibration of maleic anhydride and its intensity is found to decrease with the increasing addition of chitosan. The peak at 900 cm<sup>-1</sup> and 1600 cm<sup>-1</sup> allotted for aromatic stretching vibration is assigned for DCP. A slight increase in the intensity at 1390 cm<sup>-1</sup> indicates the MA grafting reaction on HDPE. A shift in the peaks of amino and carbonyl group in chitosan in the range of 1700 cm<sup>-1</sup> -

600 cm<sup>-1</sup> is also observed. A small peak at 1655 cm<sup>-1</sup> is attributed to the C=O stretching of the amide bond formed by cleavage of carbonyl bond at elevated temperature during mixing. The proposed mechanism for the interaction between HDPE and chitosan needs to be further analysed using mass spectroscopic methods.

## Conclusion

A renewable plasticizer, palm oil was incorporated into the HC composites and the mechanical as well as morphological characterizations were carried out. The plasticizing effect of the oleic acid component of palm oil also provides strong interfacial interaction between the filler and matrix which further substantiates the studies. Maximum tensile strength is observed till 7.5 wt% filler loading. The increase in tensile strength is attributed to the interaction between the compatibilizer and hydroxyl group of chitosan. The Young's modulus also shows a gradual increase upto 67.2% in addition of filler and was found to highest in 7.5 wt% filler loading. The addition of plasticizer to the composite maintained the impact strength of the prepared composites. A new mechanism for the composite system has been established which needs further confirmations using mass spectrometric methods.

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## Perspectives on the Local Solution for the Global Problem: Recycled Aggregates as a Sustainable Construction Building Material

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### Abstract

The construction industry, which consumes enormous amounts of natural resources in the form of aggregate, water and cement, also generates an enormous amount of construction and demolition (C&D) waste. The C&D debris consists of approximately 23%-35% waste concrete, which, if properly collected and recycled the deficit in the availability and supply of qualified natural aggregate for construction can be overcome. However, the inferior physical and mechanical properties of recycled aggregate (RA) are bound to affect the performance of concrete and consequently the structure adversely. The research fraternity across the globe employed various techniques and methods in the material processing stage, mix design stage, mixing stage and even in curing stage to improve the quality of recycled aggregate concrete (RAC) and achieve the performance parameters at par with the conventional concrete. The percentage of substitution of RA in a concrete mixture is still a debatable topic. Conclusive developments are yet to be evidenced on the short term and long term behaviour of structural elements, which is prepared using RAC. Moreover, the suitability of prevailing design standards for RAC structures demands detailed investigation and necessary emendations need to be established prior to the confident use of RA.

**Keywords:** recycled aggregate, recycled aggregate concrete, mechanical properties, durability properties, structural elements

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

From economic and ecological front sustainability can be defined as the astute management of the natural resources, so that the development required by the present generation does not disconcert the privilege of the future generations to accomplish their needs. The ever increasing demand of the society is impelling for rapid industrialization and urbanization. In this scenario, the construction industry has a major role to provide the basic infrastructure for housing, roads, water supply, medical facilities, educational institutions and industries. A downside to this socio-economic expansion is the generation of large quantities of construction and demolition (C&D) wastes. The construction industry, which consumes enormous amounts of natural resources in the form of aggregate, water and cement, also necessitates a sustainable approach in construction practice. Aggregate carries approximately 60%-75% of the total volume of concrete, which is collected by the mining of the quarries. Moreover, the C&D debris consists of approximately 23%-35% waste concrete (approximately 48% from demolition activity, 44% from renovation and 8% from new construction), which, if properly collected and recycled with a little technical input, around 1.8 million tonnes of recycled aggregate (RA) can be generated annually in India and the deficit in the availability and supply of qualified natural aggregate for construction can be overcome. The overall aspects of the present paper is given in Figure 1.

Figure 1: Organisation of the study

Material Processing and Its Characterisation

Recycling Process of Recycled Aggregate

Recycling of concrete involves several steps to generate usable RA. Screening and sorting of demolished concrete from C&D debris is the first step of the recycling process. Further, different crushing processes are implemented to acquire desirable grading of recycled aggregate. Impact crusher, jaw crusher, cone crusher or manually by hammer are preferred during primary and secondary crushing stage of parent concrete to produce RA. Some researchers have developed methods like autogenous cleaning process (Pepe, Toledo Filho, Koenders, & Martinelli, 2014), pre-soaking treatment (Tam et al., 2007), chemical treatment, freeze-thaw method (Razaqpur et al., 2007), thermal treatment (de Juan & Gutiérrez, 2009), microwave heating method (Akbarnezhad et al., 2011), heating and rubbing

method, mechanical grinding method and ultrasonic treatment method(Katz, 2003)for removing adhered mortar to obtain a higher quality of recycled aggregate.

#### Material Characterisation

The behaviour and performance of the end product depends upon the raw materials used for its production. Similarly, the behaviour of recycled aggregate concrete (RAC) is adversely affected due to the inherent inferior quality of RA. The mortar layer adhered to the parent aggregate is the main reason for inferior physical and mechanical properties of RA as compared to natural aggregate (NA)(López-Gayarre et al., 2009). Moreover, the type of parent aggregate, age and exposure condition of parent concrete, quality and quantity of adhered mortar to the recycled aggregate and presence of microcracks in the recycled aggregate governs the quality of RA. Oikonomou (2005) proposed the allowable limits of physical properties, mechanical properties and harmful elements for recycled coarse aggregate (RCA). However, due to the unavailability of code for recycled aggregate, the quality of RA is usually verified with the standards established for NA.

#### Use of Recycled Aggregate in Concrete

The RA is categorised as recycled coarse aggregate (RCA) and recycled fine aggregate (RFA). The concrete, which is prepared by the partial or complete incorporation of RA is known as recycled aggregate concrete (RAC). The inferior physical and mechanical properties of RA affects the behaviour and performance of RAC. In this context, several techniques are approached by different researchers to improve the performance of RAC. These approaches can be grouped into three categories:

- a) Incorporation of mineral admixtures
- b) Use of different mix design methods
- c) Modification of the mixing process

#### Incorporation of Mineral Admixtures

The performance of RAC can be improved by reducing the porosity of RAC, strengthening the ITZ and the matrix of concrete. There are mineral admixtures, such as fly ash, ground granulated blast furnace slag (GGBS), silica fume, Nano silica, Meta kaolin. The secondary hydration products of the pozzolanic reaction of these mineral admixtures fill up the voids and capillary spaces and enhance the compactness of the concrete matrix. The addition of mineral admixtures to RAC improves the workability in fresh stage(Limbachiya et al., 2012).The compressive strength of RAC can be slightly improved by adding fly ash. However, the use of fly ash does not have any significant effect on modulus of elasticity of RAC. The modulus of elasticity of RAC with or without fly ash is about 18% lower than conventional concrete(Somna et al., 2012).

#### Use of Different Mix Design Methods

Currently there is no specific code or guidelines available for mix design of RAC as per Bureau of Indian Standards (BIS). The key to promote the use of RCA as structural concrete is to develop a mix design methodology, which is easier in the proportioning and must provide desirable properties for fresh and hardened RAC consistently. The mix design methods used for RAC or conventional concrete are,

- a) Direct Weight Replacement (DWR) Method
- b) Equivalent Mortar Replacement (EMR) Method
- c) Direct Volume Replacement (DVR) Method

In DWR method, the total weight of coarse aggregate (natural coarse aggregate plus RCA), cement and water is kept constant. However, for same volumetric yield the fine aggregate content is adjusted. The mechanical properties obtained in DWR method is not satisfactory. Fathifazl et al. (2009) proposed EMR method and considered RCA as a two phase material rather than a single coarse aggregate. The two phases consist of parent natural aggregate and the mortar adhered to it. In EMR method the total volume of mortar; i.e. residual plus the fresh mortar content in RAC remains same as the fresh mortar content of target natural aggregate concrete. However, the major problem associated with EMR method is to calculate the amount of adhered mortar content accurately. Moreover, EMR method is not suitable for 100% use of RCA. The direct volume replacement (DVR) method considers RCA as a single phase coarse aggregate. In this method the volume of replacing RCA is same as the volume of natural aggregate. The amount of fine aggregate, cement and water are unaffected as the total volume of coarse aggregate remains constant. So, the workability of RAC in DVR method is not affected severely. Further, Knaack & Kurama (2013) compared these methods based on workability, compressive strength, and modulus of elasticity of RAC and

concluded that DVR method provides better workability condition as compared to DWR and EMR methods of mix design. In EMR method workability reduces significantly and replacement ratio more than 20% needs changes in mix proportions and high dose of water reducing admixture. However, the compressive strength is not influenced significantly by any of these mix design methods at any replacement ratio.

#### Modification of the Mixing Process

Researchers have modified the mixing process to enhance the performance of RAC. In this regard, following mixing approaches are proposed.

- a) Double Mixing Method
- b) Two Stage Mixing Approach
- c) Triple Mixing Method

Generally, during the preparation of concrete water is added in one stage to the dry mixed aggregate as shown in Figure 2. However, in the aforementioned mixing methods, water is added in two stages. In double mixing method, half of the water is added to the dry aggregate (Otsuki et al., 2003). Double mixing method improves the compressive strength and reduces the chloride penetration and carbonation depth significantly. Similarly, in two-stage mixing approach (TSMA) water is added in two steps at different times (Tam et al. 2005) (Figure 3). The TSMA helps in developing a stronger ITZ by effectively filling the voids and cracks present in RCA. The compressive strength of RAC is increased up to 21% and TSMA is also effective in enhancing durability. Kong et al. (2010) proposed the triple mixing method to further improve the ITZ. In this method mineral admixture, cement and mixture of water and superplasticizer are added at three different phases (Figure 4). The triple mixing method contributes significantly in improving workability, compressive strength and flexural strength in comparison to double mixing method.

The concrete in which natural aggregate is replaced partially or fully by RA is known as recycled aggregate concrete (RAC). The quality of RAC depends on the type of parent aggregate, strength of parent concrete, amount of adhering mortar, the replacement ratio of natural aggregate, the method used for concrete mixing and water-cement ratio. The behaviour of RAC is analysed in its fresh stage and hardened stage.

#### Fresh RAC

The porous nature of RA due to the adhered mortar layer increases its water absorption capacity by 3% - 12% (Kisku et al., 2017). Moreover, the workability of RAC depends on the strength of parent concrete and shape and size of RCA. The higher is the parent concrete strength higher will be the adhered mortar content, hence higher will be the water absorption. The inter particle friction due to the granular surface texture of adhering mortar also causes higher water demand of RAC. Because of this, the fresh RAC has the lower workability as compared to conventional concrete and the workability decreases as the replacement ratio increases (Debiebet al. 2010). Addition of mineral admixtures as a partial substitution of cement, chemical admixture and extra water to the concrete mixture are potential solutions for improving the workability of RAC (Matias et al. 2014).

#### Hardened RAC

The hardened properties of RAC are studied in two categories, such as micro level analysis and macro level analysis. Again macro level can be differentiated in two categories, such as short term properties and long term properties.

#### Micro Level Performance of Hardened RAC

The microstructure of RAC is different from that of conventional concrete, especially in the interracial transition zone (ITZ). In case of conventional concrete there is one ITZ between aggregate and mortar. But, in RAC we can find two ITZ between RA and new mortar and RA and old adhered mortar (Tam et al., 2005). ITZ is the weakest link between aggregate and mortar matrix and the presence of two ITZs further weakens RAC in microstructure level (Kong et al., 2010).

ITZ is the weakest link and strength limiting part in concrete (Otsuki et al., 2003; Tam et al., 2005). The presence of voids, microcracks, fissures and early formation of cracks in ITZ of RAC act as a barrier and do not permit stress transfer. In concrete ITZ acts as a bridge between coarse aggregate and mortar matrix (Otsuki et al., 2003). The SEM analysis result reflects that the ITZ of RAC is porous in nature and comprises of minute intrinsic pores, cracks and fissures (Tam et al., 2005). The porosity level of RAC increases with the increase in the w/c ratio of concrete as well as with the replacement level of RCA. Moreover, the concentration of  $\text{Ca}(\text{OH})_2$  and ettringite are higher in ITZ in

comparison to the matrix of the concrete, which is the reason for porous nature of ITZ. Mukharjee & Barai (2014) observed that, the hardness value increases as the distance increases from the surface of the aggregate. Therefore, necessary steps such as, TSMA, triple mixing method with the application of pozzolanic materials, addition of nano silica and pre-treatment of RA with silica fumes solution are adopted by researchers to improve the quality of ITZ in RAC.

#### Macro Level Performance of Hardened RAC

At macro level, the performance of concrete can be evaluated as short term and long term. The short term mechanical properties are evaluated in terms of compressive strength, split tensile strength, flexural strength, modulus of elasticity and bond strength, whereas creep, shrinkage, carbonation and corrosion resistance are long term properties of concrete.

The reduction in compressive strength of RAC is not very significant when the replacement of RCA is up to 30% (Rao et al., 2011). It has been observed by many researchers that the reduction in compressive strength of RAC is up to 30% at 100% replacement of natural aggregate (Butler et al., 2013; Ravindrarajah & Tam, 1985). Similar to the NAC the compressive strength of RAC decreases as the w/c ratio increases. The decrease in split tensile strength can be up to 24% at 100% replacement of natural aggregate by RCA. Further, higher compressive strength is observed for RAC with the use of RA extracted from high strength parent concrete (Etxeberria et al., 2007). The rate of strength gain in RAC is faster at the early age, whereas in later stage it is lower in comparison to NAC (Etxeberria et al., 2007). The compressive strength of RAC is improved by TSMA (Tam et al., 2005), addition of nano silica (Mukharjee & Barai, 2014), ground granulated blast furnace slag (GGBS) (Patra & Mukharjee, 2017), and super plasticizers (Corinaldesi & Moriconi, 2009).

The tensile strength of concrete is indirectly measured by split tensile test and flexural tensile test. The tensile strength of RAC depends on the RA replacement ratio, quality of RA, w/c ratio, type of cement, mix design method and curing period. Similar to the compressive strength, the split tensile strength of RAC decreases as the replacement level of RA increases and the reduction is up to 40% at 100% use of RCA (Elhakam et al., 2012). The weak ITZ is the reason for lower the split tensile strength of RAC. The addition of GGBS (Patra & Mukharjee, 2017), nano silica (Mukharjee & Barai, 2014) improves the split tensile strength by improving the ITZ quality, whereas the incorporation of flyash has negative influence on the split tensile strength of RAC (Kou, Poon, & Agrela, 2011). On long term basis, the split tensile strength of RAC increases, because of the increase in hydration product (Kou et al., 2011). The adhered mortar creates weak ITZ between RCA and new mortar. Similar to the split tensile strength, the flexural tensile strength of RAC is also lower in comparison to NAC (Katz, 2003). In different w/c ratio there is a significant difference in flexural strength between RAC and conventional concrete. Replacement of RCA has very little influence on the flexural strength of RAC. The flexural strength is reduced up to 10% with the increase in RCA percentage with respect to conventional concrete.

The modulus of elasticity of is adversely affected by the inclusion of RA. Its value for RAC is found to be 50-70% of conventional concrete. There is a substantial decrease in modulus of elasticity with increase in degree of substitution of RCA and it is found that up to 45% reduction in its value at 100% replacement level. Reduction in the size of maximum size of RCA also reduces the modulus of elasticity of RAC (Manzi et al. 2013). The increase in total amount of mortar content, which is having a lower modulus of elasticity as compared to aggregate is the primary reason of lower modulus of elasticity of RAC with respect to conventional concrete. The addition of superplasticizers improves the modulus of elasticity and an increment up to 33% was reported. The partial substitution of cement with flyash has positive influence on the modulus of elasticity of RAC in long term.

The bond strength of RAC is also observed to be lower than that of NAC (Butler et al., 2014). The type of rebar and rebar surface texture contributes to the bond strength. The bond strength of RAC decreases as the replacement ratio increases for plain reinforcement bars, whereas there is conclusive relationship for the deformed bars with respect to the replacement ratio of RCA (Xiao & Falkner, 2007). The results of Prince & Singh (2013) contradict the earlier findings and reported that, the bond strength of RAC increase as the replacement ratio increases. Kim & Yun (2013) reported that, the bond strength of RAC increases as the size of RCA decreases. Corinaldesi & Moriconi (2009) studied the bond behaviour of RAC by incorporating flyash as partial replacement of cement and reported the positive influence of flyash on bond strength of RAC, which is due to the improved pore structure by secondary hydration product.

The long term performance of concrete depends on the mix proportion, curing conditions and exposure condition. Shrinkage, creep, water permeability, air permeability, chloride penetration and carbonation are the parameters need to be evaluated to assess the long term performance of concrete. The drying shrinkage of RAC is higher due to the higher water absorption of RA (Debieb et al., 2010; Matias et al., 2014; Tam & Tam, 2007). Researchers reported the

same initial shrinkage for both NAC and RAC. The use of super plasticizers increases shrinkage due to the increase in entrapped air content (Matias et al., 2014). The incorporation of flyash as partial replacement of cement reduces the degree of shrinkage in RAC (Kou & Poon, 2012). The creep deformation of RAC is higher and can be increased up to 50% than that of conventional concrete. The extent of creep deformation increases with the increase in replacement ratio of RA (Tam & Tam, 2007). RCA obtained from high strength concrete shows less deformation due to creep. This behaviour is due to higher water absorption rate of RCA derived from high strength concrete, which leads to reduction in the effective w/c ratio of RAC. The increase in less stiff mortar volume causes higher shrinkage of RAC as compared to conventional concrete.

Generally, the permeability of concrete is measured in terms of water permeability and air permeability. The more porous ITZ of RAC resulted in higher water permeability (Debieb et al., 2010). The use of super plasticizers increases the permeability of RAC. The use of flyash and silica fume lowers the void content of ITZ and hence helps in reducing the water permeability of RAC. The oxygen permeability of RAC decreases as the replacement level increases (Olorunsogo & Padayachee, 2002). The air permeability of RAC is observed to be six times that of the conventional concrete. The use of flyash, bagasse and micro silica reduces the permeability of RAC.

The presence of chloride in concrete causes the corrosion of the reinforced concrete structures. Hence, it is an essential aspect of concrete from durability point of view. The extent of chloride penetration is usually governed by the w/c ratio, curing period and RA replacement ratio (Lotfy & Al-Fayez, 2015). Increase in curing period and the lower w/c ratio lower the chloride penetration. The addition of flyash, bagasse and GGBS reduces the chloride penetration in RAC. The secondary hydration product of these mineral admixture lowers the voids content of RAC and hence, reduces the depth of ingress of chloride (Lotfy & Al-Fayez, 2015).

The interaction between the CO<sub>2</sub> and unhydrated Ca(OH)<sub>2</sub> causes the carbonation in concrete, which lowers the alkalinity of concrete. The water/binder ratio, binder content, RA replacement ratio, curing conditions and addition of mineral admixtures influence the extent of carbonation in concrete. The carbonation depth in concrete increases with the increase in w/c ratio (Corinaldesi & Moriconi, 2009). The carbonation depth increases as the RA replacement ratio increases. However, researchers reported that, the carbonation depth decreases as the RCA replacement ratio exceeds 70%. This is due to the increase in the total binder content of RAC, which means higher alkaline content is available for carbonation. The carbonation depth in RAC is 3-5 times than that of conventional concrete. The factors associated with RAC for its weak carbonation resistance as compared to conventional concrete are; (1) its porous nature (2) the adhered old mortar to RCA means more quantity of material is available for carbonation. Excessive curing has adverse effect on the carbonation resistance of RAC owing to the increase in the internal humidity of concrete. The inclusion of RFA has negative influence on carbonation resistance of RAC (Evangelista & de Brito, 2010). The addition of flyash in RAC has adverse effect on carbonation resistance, whereas the super plasticizers have mixed effect on the carbonation depth of RAC (Matias et al., 2014).

## Applications

Over the last few decades the short term as well as the long term behavior of RAC is studied comprehensively. The ultimate goal of these investigations is to use RAC for the preparation of structural members. However, the application of RAC in structural elements is yet to be accepted widely. The reported results regarding the performance of different structural members are discussed below.

### Beam

The available literature discusses about the flexure as well as the shear behaviour of RAC beams with different RCA replacement ratio and longitudinal reinforcement ratio. The crack morphology and crack progression for RAC beams are very similar to conventional concrete beams. The failure mode of RAC beams is also similar to the conventional concrete beam. However, higher number of cracks and larger crack width are reported for RAC beams. The flexural behaviour of RAC beams is similar to that of conventional concrete beams. The ultimate moment and ductility factors are almost same in both the beams made up of RCA and virgin aggregate (Arezoumandi et al. 2015). However, the RAC beams show lower cracking moment and greater number of cracks, but the crack patterns and serviceability characteristic are not affected by the use of RCA. There is no significant difference in yielding moment between RAC and NAC beams. However, increase in replacement ratio decreases the flexural capacity of RAC beams and this behaviour is attributed to bond deterioration between aggregate interface and mortar. The RAC beams show larger

deflection than conventional concrete beams and the midspan deflection increases as the RCA replacement ratio increases (Bai & Sun, 2010). The lower stiffness of RAC beams after cracking results in higher ultimate deflection than conventional concrete beams. At same reinforcement ratio regardless of replacement ratio RAC beams show no significant difference in crack width, crack spacing and load-deflection behaviour to that of NAC beams. The RCA replacement ratio adversely affects the size of failure surface and the level of concrete destruction. The EMV mix design approach improves the flexural behaviour of RAC beams. The existing analytical models and code-based procedures for conventional RC beams can be applied to reinforced RAC beams (Knaack & Kurama, 2013). The available design codes are considered to valid up to 30% replacement of RCA. The existing design codes are applicable for flexural design of RAC beams (Fathifazl et al., 2009).

The shear behaviour of RAC beams without stirrups is inferior to that of NAC beams (Arezoumandi et al. 2014). The EMV design mix method improves the shear performance of RAC beams (Fathifazl et al., 2009b). The shear strength of RAC beams increase as the shear span to depth ratio decrease and this behaviour is attributed to higher contribution of arch mechanism at lower shear span to depth ratio. Moreover, the shear strength of RAC beams reduces as the shear span to depth ratio increases with respect to the NAC beams. The shear strength decreases as the RCA replacement ratio increases, however, no significant variation is observed in diagonal tension cracking strength of RAC beams upto 50% replacement ratio. A reduction of 16% in shear strength of RAC beams was reported at 50% replacement ratio. Moreover, it is reported that, a reduction of 13% - 18% in shear strength of RAC beams beyond 15% replacement of NCA with RAC. Further, experimental investigation on shear behaviour of RAC beams is suggested at higher replacement ratio (Arezoumandi et al., 2014). Consequently, the performance of RAC beams is comparable to conventional concrete beams at lower replacement ratio.

## Column

The axial load carrying capacity of RAC columns reduces as the RCA replacement ratio increases (Zhou et al., 2008). Researchers observed no significant difference in behaviour of RAC columns upto failure load and witnessed better ductility behaviour of RAC columns as compared to conventional concrete columns. The axial load carrying capacity of RAC column decreases as the percentage of replacement increases. However, the performance of RAC columns is comparable with conventional concrete columns for axial loading and can be used as load bearing structural element in compression (Choi & Yun, 2012). Consequently, the RAC columns can be designed using the existing design standards for conventional concrete column.

## Slab

The literature on behaviour of RAC slabs is very limited. A loss of 2% in punching strength of RAC slabs is reported by Reis et al. (2015). Moreover, there is no conclusive relation is observed between the punching strength and RCA replacement ratio (Reis et al., 2015). They have observed a reduction in uncracked state stiffness and cracking load for RAC slabs. The existing numerical and analytical methods for conventional concrete can be applied to design and analyse RAC slabs (Reis et al., 2015). The use of super plasticizers improve the performance of RAC slabs (Pacheco et al., 2015). Schubert et al. (2012) reported that, the current design methods for NAC can be used for RAC slabs, however further investigations on RAC slabs is suggested with different specimen geometries, effective depth ratio and reinforcement ratio. In general, the existing design provisions provide satisfactory performance for RAC slabs.

## Conclusions

The present paper comprehensively discusses about the production of RA, use of RA to prepare RAC, methods to improve the quality of RAC, short term and long term performance of RAC and the behaviour of RAC prepared structural elements, which helps in identifying the gaps and determining the guidelines for further research. The quality of RA is inferior to the NA, which adversely affects the fresh as well as hardened properties of RAC. In this regard, different mix design methods and mixing methods are proposed to improve the quality of concrete. The EMV method of design mix provides improved mechanical properties, however the complete substitution of RCA is not possible with this method. The TSMA improves the mechanical properties of the RAC by improving the quality of ITZ. Moreover, the use of mineral admixtures enhances the short term and long term performance of RAC by filling up the voids with secondary hydration products. The performance of RAC by using recycled fine aggregate requires an extensive and methodical investigation. The performance of structural elements by incorporating RCA is

comparable with the conventional concrete elements at lower replacement level. Further investigation is required for different structural members at higher replacement ratio, especially for complete substitution of natural aggregate with RA. Moreover, the suitability of existing design standards needs to be verified for RAC members at 100% use of RCA. Consequently, the existing knowledge, methods and practical guidelines need further development for extensive and successful application of RA in the construction industry. The use of C&D waste as a source of aggregate in construction industries will minimize the landfill problem as well as reduce the mining of quarries for natural aggregate, which reduces the carbon footprint of the construction materials. The proper collection and implementation of locally available C&D waste, with little, but efficient technical input can be a sustainable alternative for construction industries.

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## Bioremediation of Heavy Metal Contaminated Water Bodies using Microalgae

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### Abstract

Environmental pollution with heavy metals of natural or anthropogenic origin can cause health problems for humans and animals in various regions of the world due to their toxic impact. Enhanced concentration of heavy metals via the steps of the food chain leads to varying different symptoms like discoloration in plants, bone diseases like osteoporosis in humans, but also has a narcotic effect on the central nervous system up to death. Conventional decontamination methods are mostly expensive. Options like acidizing sludge dredged out of ponds from former mining activities challenge the environment as soil and lake water composition is changed. Thus, bioremediation measures are a different option, which is less strenuous on the environment. This study presents filter solutions using microalgae as a cost efficient alternative option.

Studies with endemic microalgae like *Chlorella vulgaris* present evidence, that filters prepared with algal coating can uptake heavy metals from contaminated liquid media. First algal cell growth under contamination was investigated over a time of 8 days under controlled conditions (light incubator, 5000 lux, 25°C, 14/10 L/D rhythm, 10 L/h aeration, initial pH 5). Growth Media (2x ES) were contaminated with Arsenic, Cadmium, Mercury (30 µg/L each) and Lead (300 µg/L), concentrations resembling those found within the river Oker in Germany, where contamination is derived from former mining activities and accumulating in sludge and lake sites. In a second step inactivated algal biomass was tested for performance in comparison with activated granulated carbon as a known material to reduce heavy metal contamination. Thirdly, filter materials were coated with inactivated algal cell material and allowed to immerse in contaminated water for 24 hrs with sampling in 10 min to hourly increments and AAS analysis for heavy metal contamination.

Microalgal cultures were able to grow and remediate heavy metal contamination. Bioaccumulation of *Chlorella vulgaris* cultures after 8 days was Hg (58 %) > Cd (41 %) > Pb (24 %) > As (6 %). Biosorption by inactivated algal biomass was even faster (within 10 minutes of contact) than the uptake into living cells. Experiments with *Chlorella vulgaris* powder show that uptake rates after 20 hours contact time are comparable to those of activated carbon. Biomass coated filter materials proved effective for heavy metal uptake even after 5 min. after immersion in contaminated water and reached rates of 90% after 24 hrs, whereafter the contaminants could partially be stripped of the material for recovery. Thus, the developed filter material could prove to be an inexpensive and ecofriendly way to remediate heavy metal contamination from polluted water bodies.

**Keywords:** bioremediation, heavy metals, water protection, environment, sustainability

**Main Conference Topic:** Environment, tourism

### Introduction

One of the environmental burdens of urbanization, industrialization and fossil fuel combustion, mining activities and pesticide use is non biodegradable heavy metal contamination in terrestrial as well as aquatic systems. Such contaminations can be found within rivers, lakes and marine environments, mineral water as well as communal and industrial waste waters, and in agriculturally used soil areas. As exposure to heavy metal contaminations, especially Cadmium (Cd), Mercury (Hg), Lead (Pb) and Arsenic (As), are known to result in health problems like developmental disorders and retardation, renal dysfunctions and cancerogenic effects (Järup, L., 2003), government regulations define critical values requiring decontamination procedures. These often involve cost-intensive methods like electrodialysis, ultrafiltration, reverse osmosis, ion exchange, charcoal absorption and chemical treatment (see review: Akpor, O. B., Muchie, M., 2010). Mostly these methods require offsite operation and often produce toxic sludges, which will have to be deposited in landfills.

Bioremediation procedures are a cost-efficient alternative as they offer onsite treatment especially in aquatic systems, where microalgae provide an interesting prospect due to their high growth potential. Under eutrophic conditions with elevated phosphate and nitrate concentrations they are an option for waste water treatment and decontamination at the same time (Mallik, N., 2002a). Microalgal species seem to be quite efficient in heavy metal

uptake as sedimentation after algal bloom diminished heavy metal concentrations in marine environment (Luoma, S.N., et al., 1998).

Uptake was observed to take place during two phases, adsorption to cell walls taking place during the first 30 min. of exposure (Wilkinson, S.C., Goulding, H.K., and Robinson, P.K., 1990), while uptake within the cytoplasm takes from days to a month (Shanab, S., Essa, E., and Shalaby, E., 2012). Inactivation of *Cyanobacterium Microcystis* cultures with heat and formaldehyde pretreatment resulted in efficient heavy metal uptake comparable to that of living cells (Parker, D. L., et al., 1998), an interesting finding considering the sensitivity of living cell cultures to low pH values and the short time needed for uptake. Similarly pretreated *Chlorella vulgaris* cells accumulated 80% of Nickel and Copper contaminations tested and thus gave better response than living cells (Mallik, 2002b).

Diverse species seem to display different abilities for uptake of various heavy metals. The green alga *Pseudochlorococcum typicum* was able to incorporate up to 97% of mercury, 86% of cadmium and 70% of lead contaminations within the first half hour (Shanab, S., Essa, E., and Shalaby, E., 2012) followed by *Scenedesmus quadricauda* with slightly lower values. Reports vary, however, as dried *Spirogyra hyalina*-cells were able to adsorb up to 8.7 mg/g Arsenic and 39.2 mg/g Mercury within 120 min. (Kumer und Oommen, 2012), a solution of 5 µg/L Mercury on the other hand had toxic effects on *Scenedesmus quadricauda* cells and 20µg/L resulted in cell destruction (Kumar und Oommen, 2012; Metha and Gaur, 2005). Thus, further investigation and a comparison of endemic species in temperate regions with respect to heavy metal uptake (As, Cd, Hg, Pb) is needed under controlled conditions.

Sediment			Water	
Element 2007				
[mg/kg dry matter]			2013	
[mg/kg dry matter]			Stadtgraben 2013	
[µg/L]	Oker 2013		µg/L]	
As	31	43	2.2	2.1
Pb	300	433	5.6	3.4
Cd	21	29	1.3	<0.3
Cr (ges.)	26	59	<1	<1.0
Cu	92	152	10	18
Ni	38	59	3	1.3
Hg	0.65	0.97	<0.2	<0.2
Zn	2240	3780	150	47

The Harz mountainous area in Northern Germany is an old mining region for sulfurous ores containing Mercury, Iron, Silver, Thallium, Arsenic, Copper, Cobalt, Gold, Lead, Cadmium, Magnesia, and Zink among others (Gishler, E., 2008, Ernst, W.H.O., et al., 2004), mining activities ceased to exist close to the turn of the millenium. Deposits from century old mine dumps reach river sediments via water run off and dust dispersion within an area of about 100 km, and contaminations of As, Cd, Hg and Pb are especially found in embankment areas and sediments of the rivers Oker, Innerste and Grane impairing agricultural production alongside the rivers. Own investigations (Gotthold, 2013, Tab. 1) within the sediments of the local lake Stadtgraben (City of Wolfenbüttel, GER), which is receiving some of its water from the river Oker, show an increasing load of As, Pb, Cd, Hg and other heavy metals from 2007 to 2013 (Tab.1), probably as a result of still continuing contamination from mine dump loads even after laying in of mining activities. Water samples from Lake Stadtgraben as well as the influx river Oker showed a heavy metal load within the µg/L range (Tab. 1).

Heavy metal contamination is found worldwide: Fossile fuel combustion from coal power plants on the other hand is one of the reasons for Mercury contamination within the temperate region of Kenosha, Wisconsin, USA, where the endemic algal species are comparable to those found in Northern Germany. Mercury concentrations ranged from 0.3-2.9 ng L<sup>-1</sup> in lakes and 0.7-8.9 ng L<sup>-1</sup> in rivers (Babiarz, C.L., Andren, A.W., 1994). Arsenic on the other hand is occurring naturally in Wisconsin soil and bedrock and can be released into groundwater and enter water wells (> 10 µg/L; Welch et al., 2000).

The aim of the present study is therefore to investigate heavy metal uptake abilities, especially for As, Cd, Hg and Pb, of endemic Chlorophyta species (*Chlorella vulgaris*) under standardized laboratory conditions with respect to bioremediation applications.

## Materials and Methods

### Cultures

Cultures were obtained from SAGCulture Collection of Algae, Göttingen (*Chlorella vulgaris*, strain 211-11b). Strains were kept in ES medium (Castenholz, Re.W., 1988) for maintenance. For bioreactor experiments a twofold ES Medium (2xES) concentration was used, bioreactors were aerated, pH levels were not CO<sub>2</sub> adjusted.

Cultures were grown within a light incubator (Binder GmbH, make: KBW 400) in  $n = 6$  cultures/group under standardized growth conditions (pH adjusted 5 at inoculation (day 0), 25°C, light intensity 5000 lux, daylength: 14 hrs light/10 hrs dark, stirrer 150 rpm, inoculation 1 mio cells/ml).

### Filter material

Freeze dried cell cultures (*Chlorella vulgaris*) were coated onto foamed clay particles (7-15 mm diameter) using alginate.

### Design of studies

In a first set of experiments cultures of all species investigated were grown in aerated bioreactors (borosilicate glass, volume 1L,  $n = 6$ /group, aeration <10 L/h to minimize evaporation risk) under standard conditions in either heavy metal free (controls (C)) or contaminated (treatment groups (THM): 300 µg/L Pb, 30 µg/L Hg, Cd and As) 2x ES medium as described above (start pH 5). The values for laboratory standard heavy metal contamination were taken from the maximum values that occurred in the river Oker in 2002 (Gewässergütebericht Oker (2002)).

In a second experiment bioremediation performance of Activated Carbon Granulate (2 g/L) as compared to *Chlorella vulgaris* powder (2 g/L) was evaluated under pH 5 and pH 7 conditions in 50 mL borosilicate glass flasks. Standard curves (single values) from 0-80 µg/L for As, Cd, and Hg and from 0-800 µg/L Pb lake water (filtered) were analysed after a contact time of 20 hrs at 25°C stirred at 300 rpm.

Thirdly, filter material was prepared for bioremediation studies. Cell material (*Chlorella vulgaris*) was freeze dried and applied using alginate to foamed clay particles in a concentration of 20 mg dry matter/L alginate (1.5 % sodium-alginate solution). 467 g of the coated filter material was filled into 1 L Bioreactors ( $n = 3$ ) with lake water contaminated with 100 µg/L Pb and 10 µg/L As, Cd and Hg. Reactors were allowed a contact time from 0-24 hrs with sampling at 0-1-5-15-30-60-120 min, after 24 hrs and finally following acidification.

### Parameter analysis

A daily sampling protocol was established over a time period of 8 days. Samples were analyzed for pH (WTW, make: pH 530), cell count (light microscope, Carl Zeiss, make: Axiostar plus, 400x magnification and Thoma chamber), optical density (Unicam, make: UV2-100, at 750 nm) and Chlorophyll a concentrations. Chlorophyll a was extracted from 1 ml samples with 4 ml Methanol, samples were then mixed by vortex and incubated for 10 min. at 70°C (water bath) and centrifuged at 3000 rpm for 10 min., absorption was then detected with an UV/VIS spectrometer (Unicam, make: UV2-100) at 750 nm and 665nm. Dry matter (10 ml samples) was analyzed at the beginning and the end of the culture period using an infrared moisture measuring device (Sartorius, make: MA 35).

Nutrient status was monitored at the beginning and end of a culture period by analyzing ammonia (NH<sub>4</sub>-N), nitrate (NO<sub>3</sub>-N), nitrite (NO<sub>2</sub>-N), phosphate (PO<sub>4</sub>-P) according to DIN Methods (DIN ISO 15923-1, 2012).

Heavy metal concentrations were analyzed immediately after inoculation and at the end of a culture period within biomass and media for all culture groups. After inoculation samples were taken immediately, frozen at -20°C and stored for later analysis. For fluid/biomass separation cultures were centrifuged for 20 min. at 8000 rpm. Supernatant medium was decanted and stored for analysis.

The biomass pellet resuspended and centrifuged again, dried at 105°C for 24 hrs and cooled for 30 min. within a desiccator afterwards, biomass was then analyzed for dry matter and stored for further analysis. For heavy metal analysis within biomass samples a dissolution was done (4 ml 10 % HNO<sub>3</sub>, 1,1 ml 30 % H<sub>2</sub>O<sub>2</sub>, chemical extraction for 30 min. at 180°C in an ETHOS.lab microwave, make: MLS), the extract was filtered (45 µm) and resuspended (25 ml) in deionized water. Heavy metal analysis (As, Cd, Pb) was done using a graphite tube AAS (Atomic

Absorption Spectrometry). The Mercury (Hg) analysis was done by an independent laboratory (Biolab, Braunschweig) using inductively coupled plasma mass spectrometry (ICP-MS).

#### Statistics

Data were subjected to descriptive Statistics analysis, followed by testing for normal distribution (Kolmogoroff Smirnov test, Stephens, M. A. ,1974) and Student's t-test (Student, 1908) or U-Test (Mann and Whitney, 1947).

## Results

### Culture growth and development

pH adjusted quickly (within 2 days from the initial pH 5 to pH 7), nutrient values were not depleted by the end of cultivation period (day 8) from the enriched media. Cultures show an increase in Chlorophyll a concentration during the cultivation period in both contaminated and clean media. However, heavy metal treated *Chlorella vulgaris* cultures exhibit a more pronounced lag-phase in the first two days of contact (Time of adaptation, Fig 1). Growth in treatment cultures is not as reliable as in controls (Fig 1, upper panel). In general Chlorophyll a values show a wide spread between single reactor growth curves in heavy metal treated groups, a more consistent growth is observed in the untreated control group.

Heavy metal uptake after 8 days is influenced by heavy metal availability, depending on pH-value for maximum solubility (Cd 6.5 > As 4-4.5 > Pb 4.0 > Hg 4.0), start concentration, complexing with medium compounds (Nitrate, Carbonate, Phosphate), cell metabolism and volatility. Uptake of As, Cd, Pb and Hg at the end of the cultivation period is seemingly related to culture growth. Ranges were 20-60 mg Pb/kg moist mass (start conc. 300 µg/l Pb). The start concentrations for As, Cd and Hg were 30 µg/l each. Only a small amount of As was taken up by *Chlorella vulgaris* after 8 days (0.2-0.6 mg As/kg moist mass). There was an uptake of 4.1-7 mg Cd/kg moist mass and 2.1-4.3 mg Hg/kg moist mass.

Thus, microalgal cultures were able to grow and remediate heavy metal contamination. Bioaccumulation (defined as heavy metal uptake in mg/kg moist mass) of *Chlorella vulgaris* cultures after 8 days was Hg (58 %) > Cd (41 %) > Pb (24 %) > As (6 %) of the heavy metal start concentrations.

Fig. 1 Culture development (depicted as Chlorophyll a values (mg/L); single values (upper panel) and mean and standard deviation (SD) (lower panel), n=6/culture group) over time (day 0-8) of *Chlorella vulgaris* (CV) cultures in either complete media (control group) and heavy metal contaminated media (treatment group) at pH 5. Note the lag phase and the wider spread in the heavy metal treated group.

### Bioremediation performance

Algal *Chlorella vulgaris* powder adsorbed 12 µg/l As, 22 µg/l Hg, 52 µg/l Cd (start conc. 80 µg/l each) and 720 µg/l Pb (start conc. 800 µg/l) over a contact time of 20 hours, with higher adsorption rates apparent at pH 5 as compared to pH 7. Thus, dried inactivated algal powder can bind heavy metals and heavy metal biosorption (especially Cd) can keep up with the conventional adsorbent activated carbon.

### Heavy metal

Start Conc.	Uptake				
	pH 5		pH 7		
	CV-Powder	Activated Carbon	CV-Powder	Activated Carbon	Activated Carbon
Lead [µg/l]	800	720	780	520	490
Arsenic [µg/l]	80	12	38	6	18
Cadmium [µg/l]	80	52	28	59	23
Mercury [µg/l]	80	22	25	19	18

Tab. 2. Heavy metal biosorption (Hg, Cd, Pb, As conc. in µg/L) at pH 5 and 7 to either *Chlorella vulgaris* powder (0.1 mg/L) or activated granulated carbon (0.1 mg/L) from heavy metal contaminated media (300 µg/L Pb, 30 µg/L Hg, Cd and As) after 20 hrs.

### Filter Bioremediation

Filter materials are not analyzed completely yet, however preliminary results can be shown (Fig 2). Heavy metal uptake (in percent of heavy metal start value (100 µg/L Pb, 10 µg/L As, Cd, Hg) amounted to 61% for Pb and 54% for Cd after 5 min, and to 90% for Pb and 92% for Cd after 24 h contact time.

Fig. 2 Biosorption (as percentage of start conc. For Pb (100µg/L; Cd, As (10µg/L) over time from 0-24 hrs; mean and standard deviation (SD), n=6/culture group) from heavy metal contaminated lake water at pH 7. Heavy metal uptake is starting after 5 min. for Pb and Cd. Note the high As values at the end of the time period due to As contamination of foamed clay material.

Thus, algal biomass filtration can be used in contaminated waters where heavy metals accumulate in bottom sludge. High filter material density (10 mg *Chlorella vulgaris* dry matter/L) can be effective even after 5 min. Sintered glass and foamed clay among other materials tested provide efficient low cost filter materials due to their porous structure and large surface. Both are easy to form, environmentally friendly and resistant to acid, allowing application within acid mine waters and for metal recovery, but foamed clay particles may be subject to contamination themselves dependent on the source and should be analyzed prior to use as filter material.

## Discussion

The investigated species *Chlorella vulgaris* showed ability to grow under heavy metal contaminated medium conditions, albeit with a different lag phase and more variety in growth rates of single cultures. *Chlorella vulgaris* cultures responded with a significantly prolonged lag phase within their growth curves and impaired ability for culture growth (Fig. 1).

Other studies (Shanab, S., Essa, E., and Shalaby, E., 2012) prove an ability of *Scenedesmus quadricauda* cultures to incorporate especially Hg and Cd within the first half hour. *Chlorella vulgaris* cultures in this study on the other hand were able to remove all investigated heavy metals from the medium efficiently Hg (58 %) > Cd (41 %) > Pb (24 %) > As (6 %) at day 8 in our study.

Compared to other filter materials such as granulated activated carbon, *Chlorella vulgaris* powder performed well, which might make the algal biomass a good and cost-efficient candidate for filter materials. Algal *Chlorella vulgaris* powder adsorbed 15% As, 27% Hg, 65% Cd (start conc. 80 µg/L each) and 90% Pb (start conc. 800 µg/L) added over a contact time of 20 hours from the media, with higher adsorption rates apparent at pH 5 as compared to pH 7 for As, Pb and Hg. Thus, dried inactivated algal powder can bind heavy metals and heavy metal biosorption (especially Cd) can keep up with the conventional adsorbent activated carbon materials.

Heavy metal uptake of *Chlorella vulgaris* inactivated biomass coated filter materials (as percent of heavy metal start value (100 µg/L Pb, 10 µg/L As, Cd, Hg) amounted more efficiently to 61% for Pb and 54 % for Cd after 5 min, which might be an interesting uptake time span for field filter applications, and lead up to 90% for Pb and 92% for Cd after 24 h contact time.

This is consistent with the finding in other studies (Mallik, 2002b), that pretreated *Chlorella vulgaris* cells were able to accumulate 80% of Nickel and Copper contaminations tested and thus gave better response than living cells, although the heavy metals tested differed. Another study screening algal species for biosorption abilities of the heavy metals Pb, Cd, Ni, Zn and Cu (Klimmek, S., 2003) found an equilibrium between heavy metals adsorbed to algal cell walls from *Chlorella salina* and the cyanobacterium *Lyngbya taylorii* and in solution after 30 min., also a very short contact time, at pH 3-6. At pH below 3 sorption values were reduced as desorption took place. This study also proposed an ion exchange process with Calcium as a mechanism for biosorption in *Lyngbya taylorii*. Other species, from Chlorophyta and Cyanobacteria remain to be tested, since inactivated *Cyanobacterium Microcystis* cultures efficiently removed heavy metals with values comparable to those of living cells (Parker, D. L., et al., 1998). The species differences observed here might be useful in determining an efficient species mix for heavy metal removal in the future.

In summary, *Chlorella vulgaris* cultures were able to grow under contaminated conditions and remediate heavy metal contamination. Bioaccumulation of *Chlorella vulgaris* cultures after 8 days was highest for Hg (58 %) > Cd (41 %) > Pb (24 %) > As (6 %). Biosorption by inactivated algal biomass was even faster (within 5-10 minutes of contact) than the uptake into living cells. Experiments with *Chlorella vulgaris* powder show that uptake rates after 20 hours contact time are comparable to those of activated carbon (Tab. 1).

Biomass coated filter materials proved effective for heavy metal uptake even after 5 min. after immersion in contaminated water and reached rates of >90% (Pb, Cd) after 24 hrs, whereafter the contaminants could partially be

stripped from the material for recovery. Thus, the developed filter material could prove to be an inexpensive and ecofriendly way to remediate heavy metal contamination from polluted water bodies.

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## MGNREGA and Sustainable Rural Development: Evidences from Kerala

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### Abstract

*The Mahatma Gandhi National Rural Employment Guarantee Act(MGNREGA) launched in India in 2005 is the first of its kind which guarantees employment as a right of every able bodied person who are willing to do 100 days of unskilled employment in rural areas.Though the scheme sought to alleviate poverty in rural areas,creation of rural assets through the works taken up under the scheme is another robust objective of the programme implementation.The generated employment opportunities need to be sustainable, then only we can remove poverty and ensure a balanced life to the rural poor.The factors which hinders the sustainability of these assets should be identified and dealt with then only the much awaited objective of creating employment by way of the assets created under MGNREGA could be achieved. Hence, the present study proposes an assessment of the works undertaken under the scheme in Kerala which has the potential to enhance sustainable development of the rural areas.*

**Keywords:** MGNREGA, employment, rural assets, sustainable development

**Main Conference Topic:** International Conference on Sustainable Globalization

### Background of the Study

"To meet the needs of the present without compromising the ability of future generations to meet their own needs" is the well-known and most accepted definition for sustainable development.Every nation can accomplish the targeted growth and development with new and innovative growth patterns and programs, but the serious concern that has to be addressed by these trajectory of growth is that these developments should be sustainable. The conservation of soil and water resources, ecological and environmental safety and a balanced rural life are the key factors which paves the way towards sustainable development.The present development mandate as suggested by the UNDP' s Millennium Development Goals is to reach out to the rural poor, who are more intensive to sensitive climatic conditions and the other atrocities of nature. Sustainable development can be achieved only by generating adequate livelihoods for everyone without slackening our natural resources. Therefore, sustainable development is a moot issue, if jettisoned, will result in a dismal picture of growth and development of every nation.

As stated by Mahatma Gandhi"the soul of India lives in its villages".According to 2011 census,nearly 70%of the country's population lives in rural areas.Amajority of these people relies on agriculture for their livelihood. They are more prone to poverty and unemployment since they are landless laborers,who depends on the mercy of employment providers on daily basis-rich farmers,contractors etc.(Sontakki and Hire, 2011).An intriguing fact regarding Indian economy is that the employment growth has shown a positive trend during the post reform period where as the agriculture sector experiences a deterioration in its output growth.This indicates a disjunction between growth and employment.The growth in rural employment reveals the crisis that is gripping the agriculture sector due to low productivity,poor competitiveness and adverse climatic conditions(Abraham, 2008).The declining agriculture productivity has triggered large scale migration and people resorting to various self-employment which would prevent them from earning a better source of living(Pankaj, 2012).The labor productivity in the agriculture sector has toppled down and will hence alleviate rural poverty and unemployment.

Against this backdrop,'inclusive growth' seems to be an ideal growth pattern among policy makers in order to alleviate poverty and unemployment from the rural people who are vulnerable to seasonalchange in agriculture and allied activities.Now-a - days the development policies which give due importance to inclusiveness of the rural people in decision making and overall development of the rural areas heralds the best development practice.India has witnessed a historic legislation in 2005 by the enactment of The National Rural Employment Guarantee Act(NREGA).It was the first of its kind ever launched in the world which guarantees the 'right to work' as a legal right of every able bodied adult in rural area.NREGA is an endeavor to consider development as the right of the citizens rather than a welfare activity undertaken by the government(Feroz,Roy and Singh,2012)

### **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) – A brief summary**

The National Rural Employment Guarantee Act (NREGA) was launched in February 2006 in 200 background districts of India. It has been extended to 130 more districts in April 2007 and the entire country has been covered from April 2008. In 2009, the act was renamed as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The basic objective of the Act is to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work (NIRD 2009). Right based approach to employment distinguishes MGNREGA from earlier public employment programs launched in India. Apart from the provision of employment, the Act also considers the creation of durable economic assets to strengthen the resource base of the rural poor as the prime motive of the program.

Every adult member whose name appears in the Job Card shall be entitled to work under MGNREGA. Employment will be provided by the village panchayat within 15 days of work request. Employment should be provided within a radius of 5 km of village from where the applicant resides at the time of applying. One third of the beneficiaries should be women who have registered and requested for work under the Act. Adequate facilities should be provided at the work site viz facilities for safe drinking water, shade for children, crèche facilities for children etc. There is provision of unemployment allowance if the work is not provided within 15 days of the application form. Another striking feature is that both men and women shall be paid equal wages (NIRD 2009). The act accomplishes the objective of decentralized planning by the involvement of local self-governments and ensures transparency and accountability in decision making and implementation of this scheme. Labour intensive works need to be promoted under MGNREGA, with 25% of the expenditure funded by State governments and the remaining 75% by the Central Government.

### **Review of Literature**

Kareemulla et. al (2009) have assessed the impact of MGNREGA on rural livelihood through soil and water conservation works in Ananthapur district of Andrapradesh. The study found out that the soil and water conservation works done under the schemes found very useful as it ensures livelihoods through wage incomes and creation of productive assets. The income accrues from these works are being used mainly for food, education and health security.

Shah and Jose (2009) examined the impact of various assets created under MGNREGA on local economics. This exploratory study looks into the capacity of MGNREGA in creating productive assets which simultaneously increases access to irrigation and thus enhances agricultural growth. The works on land and water resources if properly planned can enhance economic growth and can reduce poverty by increasing agricultural productivity. The study suggests that proper convergence of MGNREGA with various development programs is essential to bring up its full potential in building assets and promoting the growth of rural economy.

Indian Institute of Science (IIS, 2013) indicated the environmental benefits and vulnerability reduction possible through MGNREGA works. In order to assess the environmental benefits accrued from MGNREGA works, several indicators were developed comparing pre-MGNREGA period with post-MGNREGA period. By using Participatory Rural Appraisal, household survey and bio physical measurements, the study concludes that MGNREGA works related to water and land development have, contributed to generation of environmental benefits such as ground water recharge, increased water availability for irrigation, soil fertility, reduction in soil erosion and improved tree cover. These benefits have reduced vulnerability in agriculture production.

Ranaware et. al (2015) conducted an evaluative study in Maharashtra to assess the impact of MGNREGA. The study was focused only on subjective assessments and perceptions of benefits and costs of users of these works. The works created under MGNREGA were useful to the beneficiaries and were pro agriculture and primarily benefit small and marginal farmers in significant ways. They opined that works created under MGNREGA represented new and substantive additions to the resource base and infrastructure. The study rejected the perception that MGNREGA works does not create anything productive and useful.

Panda (2015) has identified MGNREGA as the best development practice to promote sustainable development in a developing economy. The observations were based on a field survey covering 400 MGNREGA workers and 400 MGNREGA non-workers spread over 5 districts, 10 blocks and 40 Gram panchayats in Assam. The analysis reveals that MGNREGA increases income and food security to the poor, empowered rural women and strengthened the natural resource base in the study area. The study also found out that MGNREGA has the potential to create three cardinal concepts of sustainability-economic, social and environmental sustainability.

### Objectives of the Study

The present study attempts to explore the role of MGNREGA in promoting sustainable rural development by analyzing the works undertaken under MGNREGA in Kerala. The specific objectives of the study are as follows:

- To study the performance of MGNREGA in Kerala
- To identify the works undertaken under MGNREGA in Kerala
- To assess the expenditure on various works under MGNREGA

### Methodology

The study has been confined to the works undertaken under MGNREGA in Kerala, nonetheless the study embarks on examining the semblance of the state in implementation of MGNREGA. The study relies on secondary data sources. To assess the pattern and trend of works under the program, secondary data have been collected from magazines, articles, texts and from newspapers. Data pertaining to performance and quantum of works have been obtained from Program MIS ([www.nrega.nic.in](http://www.nrega.nic.in) and [www.kerala.gov.in](http://www.kerala.gov.in)). Tables, graphs and percentage analysis were the tools used for the interpretation of research. Performance of the program for the last 4 years (2013-14 to 2016-17) has been considered for the study.

#### Data Analysis and Interpretation

##### Performance of MGNREGA in Kerala

Though Kerala stands peak in human development indices, the issue of unemployment still remains as a bottleneck which curbs the state from enjoying the full benefits of development experiences. Table 1 depicts a brief progress report of MGNREGA in the state. In 2013-14 875.57 lakh person days were created in Kerala. In 2016-17 it was 684.62 lakhs. MGNREGA wage rate in Kerala shows an upward trend which increases from Rs. 180 to Rs. 243 in 2016-17. Similarly, the total number of works taken up under the program also increases from 2.57 lakh in 2013-14 to 3.67 lakh in 2016-17. With regard to the fund available and utilized, the data also shows a hike in all the years. A unique salience of MGNREGA implementation in Kerala is the higher participation of women in the program. The percentage share of women amounts to above 90 % from 2013-14 to 2016-17.

Table 1: MGNREGA in Kerala: At a glance

Items	Year			
	2013-2014	2014-2015	2015-2016	2016-2017
1. Person days generated(In Lakhs)	875.57	588.72	741.74	684.62
2. Average days of employment provided per household	56.83	42.65	49.26	46.97
3. Total number of households completed 100 days of wage employment	1,13,187	4,06,614	98,648	1,65,988
4. Women percentage out of total (%)	93.37	92.16	91.27	91.08
5. Average wage rate per day per person(Rs)	180.16	214.28	231.82	243.09
6. Total number of works taken up(In Lakhs)	2.57	2.97	3.57	3.67
7. Number of completed works	1,04,372	1,85,06	2,02,823	2,60,510
8. Total fund availability	132096.19	164262.69	161084.19	175950.26
9. Total expenditure(Rs in Lakhs)	1,30,040.97	1,61,672.64	1,48,350.81	2,42,615.88
10. Percentage of utilization	98.44	98.42	92.1	137.89

Source: [www.mgnregs.nic.in](http://www.mgnregs.nic.in)

### Nature of works taken up under MGNREGA in Kerala

Creation of durable assets which can strengthen the rural livelihoods is one of the pivotal objectives of the program implementation. These works should also be intended to enhance sustainable development of rural areas. Table 2 given below shows the shelf of works taken up under MGNREGA in Kerala.

Table 2: Category wise assets created in the state from FY 2013-14 to 2016-17

Type of works/assets created(nos)		Year			
		2013-2014	2014-2015	2015-2016	2016-2017
1.	Flood Control	20335	13101	8142	6043
2.	Rural Connectivity	1210	3185	3832	5620
3.	Water conservation and harvesting	23893	42140	34722	45714
4.	Renovation of traditional water bodies	13157	22760	23476	25650
5.	Drought Proofing	2138	3760	3996	6889
6.	Irrigation canals	6849	15904	14246	16029
7.	Irrigation facilities to SC/ST/IAY and land reformed beneficiaries			9547 43737	74862 93365
8.	Land Development	25792	38194	37787	44094
9.	Bharat Nirman Rajeev Gandhi Sewa Kendra	2	8	7	7
10.	Coastal Areas	1	6	7	18
11.	Rural drinking Water	218	306	491	4233
12.	Fisheries	4	10	26	62
13.	Rural sanitation	820	1294	712	8100
14.	Other Works	402	621	459	585
Total		104368	185026	202765	260409

Source: [www.mgnregs.nic.in](http://www.mgnregs.nic.in)

Figure 1: Percentage share of different works completed under MGNREGA in Kerala (Source: Table 2)

Table 2 and figure 1 vividly illustrates the nature and type of works under MGNREGA in Kerala. Various irrigation facilities such as those to SC/ST/IAY and irrigation canals constitute the major work taken up in the State. Being a naturally water abundant and physically water scarce region, the state has also given priority to water conservation and water harvesting works. Land development works is another major area which deserved special attention followed by renovation of traditional water bodies and flood control works.

### Expenditure on various works

The central government in collaboration with the state governments spends a huge amount every year for effective implementation of the program. These funds need to be utilized on pre-planned basis giving priority to labor intensive works. Local demand for works should be met in planning and execution of works in order to promote inclusive development. The table given below depicts the expenditure pattern on different works under MGNREGA in the state.

Table 3: Expenditure on various works

Financial Year					
		2013-14	2014-15	2015-16	2016-17
1.	Flood control	10045.37	7602.54	4573.75	5528.56
2.	Rural connectivity	736.24	2916.56	2940.71	12280.88

3.	Water conservation and harvesting	20011.28	37069.54	31043.16	45983.83
4.	Renovation of traditional water bodies	6818.96	15781.11	13485.73	22564.21
5.	Drought Proofing	1552.51	2471.25	2484.86	4298.24
6.	Irrigation canals	4172.86	11327.19	8608.86	15786.29
7.	Land development	21106.17	40295.57	33320.36	57364.94
8.	Rural drinking water	142.47	215.07	13485.73	22564.21
9.	Rural sanitation	512.55	654.85	359.4	1853.29
10.	Works on individual land	8456.72	32234.35	45201.89	57281.95
11.	Other works	208.01	440.08	303.68	668.52
Total		73763.14	151008.11	155808.13	246174.9

Source:www.mgnrega.nic.in

Figure 2: Trend line showing expenditure on different works over the years (Source: Table 3)

As shown in table 3, it can be seen that the major share of expenditure was spent on land development activities and works on individual land (irrigation facilities to SC/ST/IAY) in 2016-17 Rs.57364.94 lakh and Rs.57281.95 was distributed for land development activities and works on individual land respectively. Renovation of traditional water bodies, water conservation and water harvesting works and rural drinking water facilities were the other thrust areas of works under MGNREGA in Kerala.

### Report on Natural Resource Management works

Table 4 and Figure 3 depicts the picture of Natural Resource Management (NRM) works carried out under Focus Area Progress in MGNREGA in Kerala from 2014-15 to 2016-17. NRM works under Focus Area Progress have been carried out in two districts in the state, Kasaragod and Palakkad. NRM works include soil and water conservation works, ground water recharge related works, irrigation related works, drainage and other related works and plantation related works. In 2015-16, 5498 NRM works were carried out in the state where as in 2014-15 and in 2016-17 it was 4790 and 4358 respectively. In all the 3 years irrigation related works shows the highest percentage of works (44.32, 60.8, 41.9). In 2014-15, soil and water related works accounts 33.54 % and in 2016-17, it reduces to 20.37%. Livelihood support works accounts to 10.60%, 12.20 and 30.97 in 2014-15, 2015-16 and 2016-17 respectively. Ground water recharge related works, drainage and plantation works shows a low share when compared to other works.

Table 4: Natural Resource Management Works

Works	Financial Year					
	2014-15	2015-16	2016-17			
1.	Soil and water conservation related works(Including non-water related works)			1607	1137	888
2.	Ground water recharge related works			140	79	184
3.	Irrigation related works			2123	3341	1826
4.	Drainage and other related works			343	206	31
5.	Plantation related works			69	64	59
6.	Land related works or livelihood support			508	671	1350
	Total			4790	5498	4358

Source:www.mgnrega.nic.in

Figure 3: Percentage share of Natural Resource Management Works, Source: Table 4

### Work Completion Rate-A comparison

A general comparison of work completion rate of Kerala and India under MGNREGA has been made in the following table 5 and through figure 4. The analysis reveals that in 2014-15, 99.72 % of works were completed in Kerala and 96.92% of works were completed in India. In 2015-16, the share of Kerala and India as a whole accrues to 95.24% and 72.83% respectively. In 2016-17 the work completion rate pertaining to Kerala was 85.17%, when the country's average was only 42.34%.

Table 5: Work Completion Rate

Financial Year			
	2014-15	2015-16	2016-17
Kerala	99.72	95.24	85.17
India	96.92	72.83	42.34

Figure: 4 -Work Completion Rate-Kerala & India,Source: Table 5

### Interpretation

Schedule 1 of the MGNREGA Act mentioned the list of permissible works to be taken up under the scheme, which includes water conservation and harvesting, drought proofing, flood protection, land development, minor irrigation works and rural connectivity works. Nonetheless, the state government can also take up works which have local importance under Section 1 (IX) of Schedule 1 of the Act. The above analysis of works reflects a brief report of MGNREGA activities in Kerala. From figure 1, it can be realised that irrigation facilities to SC/ST/IAY accounts for major share of works in 3 consecutive years (2014-15, 2015-16 & 2016-17). This was followed by water conservation and water harvesting works and land development activities. Table 3 and the trend line depicts that land development works and works on individual land (irrigation facilities) get priority in using the majority of fund available to the state. Table 4 assesses the Natural Resource Management Works undertaken in Kerala for the last three years. Irrigation related works and soil and water conservation works were the main works carried out in the state. The comparison of work participation rate between Kerala and India depicts that the state performs well under the right based employment scheme when compared to the country as a whole. The dismal picture to be noted here is that the work participation rate comes down to 42.34% in India in the year 2016-17. In spite of the anomalies in the programme implementation in Kerala, the state performs well in MGNREGA when compared to other states in India. All the above analyses validate the contribution of MGNREGA to natural resource regeneration and sustainable development of rural areas.

### Conclusion

MGNREGA is the first and biggest right based employment guarantee scheme in the world which addresses the two pronged challenge of unemployment crisis and sustainable development of rural economy. Through this study, an attempt has been made to explore the nature of MGNREGA works in Kerala that carries the potential of rejuvenating the rural economies. The analysis reveals that there has been a tremendous growth in the quantum of works and expenditure on various items of work over the years. At the time of inception of the Act in 2005, more emphasis has been given to employment generation, nonetheless, now there has been a paradigm shift to treat both the objectives of the Act (employment generation and asset creation) in an equalized manner. In an era of planning and executing development activities to accomplish Sustainable Development Goals (SDGs) at the international level, the employment guarantee scheme in India deserves special attention as it encompasses the ability of building a sustainable rural economy—a path way to attain the goals of sustainable development. The creation of assets under MGNREGA has been considered as a novel trajectory of sustainable rural development. Various research studies have explored the bottlenecks involved in planning, work execution, work completion, delayed wage payments, non-durability of the assets created and lack of proper maintenance of the assets. The assets created were productive in nature to some extent, but the actual potential has not been discovered in many cases as per the literature. Lack of proper planning in the selection of works and lack of proper maintenance of the created assets were the two main impediments which prevent the durability of these works. In spite of all these anomalies, many productive and durable assets have been created in various places with good planning and execution. Adequate planning, proper implementation and effective management of the works would ensure the right kind of assets which is sustainable and lasts over a long period and would exacerbate pro-poor economic growth.

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## Case Study of Current Trends About Waste Reduction at Construction Sites in Beijing, China

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### Abstract

*China's construction industry is developing rapidly, but the waste of various resources is very serious. In this paper, on-site observation, questionnaire survey and on-site interviews are applied for analyze the current trends of waste reduction at construction sites in China. Three cases are analyzed from the causes of waste of planning, design, operation and utilization. This paper points out the concrete phenomena and causes of the waste of resources in China's construction industry, and presents some of the current trends of the reduce waste of construction. It is alsopoints outsome effective ways to reduce the waste of construction.*

**Keywords:** waste reduction, construction, case study, China

**Main Conference Topic:** Sustainability, Environment and Risk Management

### Introduction

In today's economic globalization situation, market competition is further intensified. The traditional management model relying solely on the exploration of the internal resources and the promotion the competitiveness of enterprises has been unable to adapt to the new competitive situation, and supply chain management has become a new direction for the development of contemporary enterprises.

Nowadays China's construction industry has developed rapidly. However, not like developed countries, most of the corporations in China have not noticed a major challenging from waste. There are many problems in the construction industry in China, such as unrestrained management, inefficient construction operation and waste.

At present, the studies for waste of Chinese construction enterprises is still insufficient. This case analysis covers 3 different construction sites in Beijing, China, which belong to different construction companies. We got first-hand materials by visiting the site, designing questions, interviewing and consulting the related literature of these companies. What is gratifying is that they have all taken their own measures to reduce waste. These measures are able to help most of the corporates identifying and eliminating wastes, thereby reducing operating costs.

We anticipate that this case study will help corporates in construction industry have a clue of current trends about waste reduction, thereby achieve the goal of green development.

### Literature Review

Nowadays more and more corporations have realized the importance of supply chain management. In order to save costs, many corporations have focused on the greening of the supply chain, however, most of the corporations have not noticed a major challenging from waste. In the construction industry, waste is very common. The consequences of waste are also very serious. There are some studies concerning waste management about construction industry, nevertheless, only few studies focus on the waste reduction of construction sites in China.

Architects play an important role on construction waste reduction, because they can help reduce waste throughout the project from the origin of a project - the design phase (M. Osmani et al, 2007).

David Thurnau (2013) suggests a construction site should specify waste reduction goals, targets, and documentation procedures within contracting documents as well as managers and workers should implement waste reduction measure at every job site.

There is also a study that analyzed the source of construction waste. Timber formwork was the major contributor to construction waste, accounting for 30% of all waste identified in these site visits. The wet trades of finishing work such as screeding, plastering and tile laying collectively were identified as the second major waste generator, at 20%. Concrete work and masonry work were third and fourth, each accounting for 13%. Material handling was the fifth most significant, at 10%. (C. S. Poon et al, 2002)

In recent years China has launched plenty of construction projects including infrastructure, residential and commercial buildings, however, there is a significant amount of construction waste as a result of rapid urbanization and large scale of construction activities in China (Hongping Yuan, 2012).

There is a development model in China named "Three high and one low", that is, high speed, high energy consumption, high pollution, low efficiency. This extensive development model has brought heavy burden to this big country, and causes noteworthy waste issues in many fields (Qinghua Cheng, 2010).

Most of the waste occurs in the construction stage, the main reasons for the waste are low construction cost management awareness, the material management system is not strict, and the cost control system is not perfect. (Feng Li, 2013)

Honglei Wang et al (2010) also mentioned in addition to material management, another major aspect of causing waste is irrational labor management. Some construction sites employ a large number of workers when the construction sites are not busy. Thus a large number of workers can only kill time by playing cards. When the construction works are busy, there is a lack of appropriate labor force at the labor market. At that time, labor prices are rising, resulting in a significant increase in costs.

The studies of waste reduction are vast but fragmented. In combination with other studies, we believe that focus on waste reduction can effectively solve the problem of cost management in the construction industry, to improve efficiency, improve profits, but also to achieve green development.

Case study of a few construction sites in Beijing, China

According to data from the national development and Reform Commission, in 2016, the total investment in construction projects nationwide reached 112.0561 trillion Chinese yuan (general amount to 16.9 trillion US dollar), this is an increase of 10% over the previous year, and a 5.7 percentage point increase in the growth rate. There are 790252 construction projects, an increase of 126569 over the previous year. The total investment of the new projects was 49.3295 trillion Chinese yuan (general amount to 7.45 trillion US dollar), an increase of 20.9% over the previous year, and the growth rate increased by 15.4 percentage points. There are 617450 new projects, an increase of 122848 over the previous year. But the rapid development has brought a lot of quality problems. Because of the low consciousness of overall quality management, imperfect policies and regulations, and inadequate supervision by the government, the construction industry in China is rather chaotic. Many construction enterprises sacrifice quality to make profits. In order to gain insight into current trends on waste management, we visited a few construction sites in Beijing to find out how they work on waste reduction.

H company contracted with two important projects, this project is in the south of Beijing, planning the construction land area of 38, 232 m<sup>2</sup>. As the project involves a wide range of construction, the waste problems caused by construction are plenty and complicated. As a large company, the company has a strong sense of social responsibility and a strict management system. In addition, the construction site is located in the capital of China, which is understandably under strict supervision by the government. The company has always attached great importance to this part of the work, combined with related laws and regulations and management system of the construction industry, it has established a targeted accountability system.

From the perspective of energy conservation, efficient use of resources and protect the environment, the H company proposed the development of "energy-efficient type of data center", the main content is the combination of energy saving, land saving, water saving, material saving and green construction, focused on people-orientation, emphasizing the sustainable development. For the current project, H company adopted the "Environment, health, and, safety (EHS)" measures.

Following is a basic Flow chart of EHS measure, while figure 2 shows the routine communication mechanism and figure 3 an EHS committee including following leader groups (EHS Committee organizational chart).

In addition, H company also adopted "green environmental protection construction measures". Green construction refers to the construction period, under the premise of ensuring the basic requirements of quality, safety etc., through scientific management and technological progress, to maximize the conservation of resources and reduce the negative environmental impact of the construction activities thus realizing the goal of "four saving, one protection" (energy saving, land saving, water saving, material saving and environmental protection). Green construction management mainly covers five aspects: organization management, planning management, implementation management, evaluation management and personnel safety and health management.

The main means of green construction management include:

1. Organization management: Establish a management system of green construction, where the appointed project manager is the first responsible person, and to specify the green construction management and supervision with real-time monitoring of green construction in the construction process.
2. Planning management: Compiling special green construction scheme including environmental protection measures; material saving measures; such as optimization of construction scheme, try to avoid material waste and reduce construction trash, use recyclable materials as much as possible; water saving measures; energy saving measures as well as land saving and construction land protection measures
3. Execution management: In the green construction process, implement dynamic management of the entire construction process, strengthen the management and supervision of each stage of construction. Combined with the characteristics of the project, target publicity of green construction work. Through publicity, create a green construction atmosphere. Give Regular lectures on green construction knowledge for management and workers to enhance green construction awareness.
4. Evaluation management: According to the green construction scheme, combined with the engineering characteristics, make a self-evaluation about the effect of green construction and new technology, new equipment, new material and new craftwork adopted
5. Personnel safety and health management: In the construction scheme, formulate measures to prevent occupational hazards, such as dust prevention, toxic protection, radiation protection, etc. Strengthen the management of employee life condition and sanitation, such as accommodation, meals and drinking water. Improve the living conditions of construction personnel.

In response to the waste problem, H company has made a sustained effort proposing a series of measures to reduce costs and reduce waste. The JIT method is adopted to keep the project continuous, balanced and rhythmic, so as to avoid blindfold construction and waste, and reduce the project cost in the planned construction. Measures to recycle materials and reduce materials waste include:

1. At the stage of drawing review, pay attention to review the relevant contents of materials and materials recycling, to achieve material loss rate 30% lower than expected.
2. Reasonable arrangements for the management personnel, so people do their duties, reduce nonproductive labor and support labor and strictly control the proportion of non-production workers.
3. According to the construction schedule, inventory and other information, make reasonable arrangements for materials procurement. Reduce transportation time and transport batch, as well as reduce inventory.
4. Site material stacking should be orderly. Create suitable storage environment, thus the storage system is sound and responsibilities fulfilled. Apply proper handling methods, to prevent damage and spills. According to the site layout, choose the nearest unloading zone, to avoid the "second handling".
5. Optimize the reserved pipeline route of installation project. Obtain raw material locally. Select durable materials and machines for easy maintenance and disassembly.

In addition, measures such as water saving and energy saving are also put forward. The water supply network of the construction site is designed and arranged according to the water consumption. The pipe diameter is reasonable and the pipeline is simple and convenient, and effective measures are taken to reduce the leakage of the pipe network and the water consumption. The collection and treatment system of reusing water is set up on the construction site, so that the water resources can be recycled by cascade. For energy saving, before the construction, all the workers were educated to save energy, set up the consciousness of saving energy, and develop good habits. The "saving power" signs are posted at all power control points, and an inductive switch lamp is installed in the toilet to save power. Efficient energy sources were selected, like natural gas, electricity, etc., not using coal, charcoal, firewood and other low efficiency energy to reduce the air pollution. Use of power tools with inverters, reasonable arrangements of processes, improvement of rate of use and full load rate of various machinery, reduction of unit energy consumption for various equipment are also implemented. Energy saving materials are used in wall and roofing materials to reduce the use time and energy consumption of air conditioning and heating equipment. Reasonable design of the body shape, orientation, spacing and window-to-wall ratio of the building is required, so that it has good sunshine, ventilation and lighting.

We interviewed other construction sites of Z company, and to our surprise they all had taken their own measures to reduce waste, such as making use of waste multilayer plate as post pouring strip template; A detailed list of

materials is drawn before the rebar is cut out. In addition to the length and number of the rebar, the rebar's length of the same diameter among different components is also required to be compared. Under the premise of ensuring quality, meeting specifications and blueprint requirements, comparing the length needed of various components after rebar cutting, reasonable selection of rebar, reducing the loss of rebar and other materials.

At another construction site of B company, they applied LED lamp lighting, which compared with the ordinary saves 1.6 kwh of electricity per light bulb and hour. With tower crane headlamps used 8 hours per hour on average, 4 lights on each tower crane, each tower crane saves 1536kwh every month. In addition, mobile phone software remote control to switch the lights was introduced, the remote switch on the headlights of the tower crane is convenient and avoids unnecessary energy waste caused by the electric light. These was also use of solar energy as power for office lighting, applied air-source heat pump water heater to produce hot water.

Solar lamps      Timer-controlled switch      Infrared induced flushing device in toilet  
 Water conservation publicity slogan      Light induction switch      Electricity saving slogan  
 Energy saving lamps and lanterns on the tower crane  
 Figure 4EHS Committee organizational chart

## Conclusion

In view of the severe situation of China's current energy shortage and environmental deterioration, we should start now, review the waste of resources in the development of the construction industry, and raise the importance of the healthy development of the construction industry in China. It is necessary to minimize the unnecessary waste of resources and energy, reduce the environmental costs and economic costs of the construction industry development, and truly realize the win-win situation of environmental protection and economic development".

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## Domestic violence against women and perception of solo women travellers in India

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### Abstract

*Women travel and safety is currently an important subject to discuss in the travel and tourism industry. There is an exponential growth in solo women travellers in the recent years and women safety is a concern in travel abroad, this research focus on women travellers' perception on safety while travelling in India.*

**Keywords:** solo women travellers, destination, safety, risk

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

There are several research studies that have been conducted on the risk and safety of travellers. Indeed, due to the changing nature of travellers characteristics, the safety of travellers always needs to be reconsidered, it was always based on the type of risk perceived by the travellers. Schiffman, L. G; Kanuk. LL (1991) have described the safety and risk associated with travel as physical (inflicting injury or illness), social (losing personal and social status, appearing unfashionable, and/or lowering status), psychological (damaging self-image and/or reflecting poorly on personality), satisfaction (not delivering satisfaction), and time (not performing on time, taking too much time, and wasting of time). Several studies have been conducted by considering one or more of the above reasons. However, the context of women safety and solo women travellers perception of safety is not studied in-depth and the nature of solo women travellers fear perception can be better studied in the context of a chosen destination. Though, the power of women and gender balance are critically being debated in several social contexts, the research on women safety on holidays is less debated in the academic literatures, particularly the case of solo women travellers. Lack of personal safety is perceived as a major deterrent to international travel. Travellers may evaluate the perceived risk of the purchase at different levels (product/destination attributes, negative consequences of the purchase, own needs and values, and purchase situation).

Acts of violence are considered as crimes, such as assault, battery, rape, murder and so on (Pizam, A. 1999). It's also evident that some acts are committed against local residents, political figures, businesspeople, and famous people who have nothing to do with tourism industry (Pizam, A. 1999), such acts will have an impact on tourist confidence due to the negative impression emerging at the tourist destination. Such incidents eventually turn the destinations' image as 'unsafe'. Several literature studies described the decline of tourism industry due to the violence that is not related to tourism (Bar-On 1996; Gartner and Shen 1992; Hall and O'Sullivan 1996; Mansfeld and Kliot 1996; Pitts 1996; Pizam and Mansfeld 1996a; Richter and Waugh 1986; Ryan 1993; Shiebler, Crofts, and Hollinger 1996; Pizam, A. 1999) and is evident that most acts of crime or violence that occur at tourism destination will have some effects on tourism demand. The two scenarios that are evident in this case are (a) crime/molestation against locals and (b) against tourists. Tourist destinations that experienced a high rate of crime against their local residents in the past (i.e., New York City or Washington, D.C.) acquired the image of an unsafe destination, which caused a significant reduction in their tourist visitation.

At the early 90s much of travel behavior was in groups and not individual in nature and 'gender' was not an important segmentation variable for the tourism industry, which appears to be less pronounced than previously (Collins, D., & Tisdell, C. 2002). In the recent years, women are earning more, spending more and influencing all levels of travel industry (Bond, M, 2015). Based on the report from the travel companies, 70% of travel decisions are made by women. The influence of women in the travelling and touring industry is increasing significantly, as such it is important to facilitate destinations of their choice in order to attract women tourists (Bond, M, 2015). Gender based study confirms that women are likely to be the dominant decision maker in families with children at home, which is different from the past, where husbands dominated the decision making process (Collins, D., & Tisdell, C. 2002). Remarkably, among women travelers, more of them prefer traveling solo (Chiang & Jogaratnam 2006) and for the

active soloists, the distinct strong preferences of organized packages, both in high activities and socializing would be key elements to a successful itinerary (Sung 2004).

There has been considerable amount of studies addressed on risk perception and travel from 90s and following the September 11th terrorist attack in the United States of America. Thereafter, an increasing discussion concerning risk and tourism came up in the academic literature, however, such studies were limited to safety and security risks, such as terrorism, political instability and crime (Yang, Sharif & Khoo-Lattimore 2015). Such instances have direct impact on tourist decision making and movement patterns. The other related studies have been conducted on travel anxiety and related hassle due to travel documentations, privacy and racial discrimination (Bangwayo-Skeete & Skeete 2017). There is a critical lack of literature on domestic violence of women and inbound solo women traveller perception, particularly in the context of sexual crimes against women and how such incidents are transmitted as anxiety to potential solo women travellers. Since there is an exponential growth in solo women travellers in the recent years and women safety is a concern in travel abroad, this research focus on women travellers' perception on safety while travelling in India. The National Crime Record Bureau reported that rape is the fourth common crime against India (NCRB, 2016). There is a significant growth of rape cases reported in India in the past 10 years. Though, such incidents are considered as a domestic issue. It can be transmitted to solo women travellers on their confidence to travel to India.

### **Women Travel Consumers**

Destination safety is one of the important parameters to create travellers confidence. Studies on gender and travel are increasingly important in tourism as more and more women travellers are added to the total tourism statistics. Female travellers are a major segment of those travellers and women who travel alone represent a considerable sub-market (Chiang & Jogaratnam 2006). Data show that women consumers are driving the world travel economy. There has been a 230% increase in the number of women-only travel company in the past 6 years. Indeed, when tourists are in a foreign country, there are some intrinsic inexpressive risk they hold while travelling. Such risk perception varies based on the popularity of the tourist destination. Women traveling solo and independently is a growing trend that has been investigated by number of researchers (Woodward and Green, 1988; Pain, 1991; Whyte and Shaw, 1994; Bond, 1997; Matthews-Sawyer et al., 2002; Bialeschki, McNamara & Prideaux, 2010). They represent 'a growing and influential market segment (McNamara & Prideaux, 2010). Solo women travellers are not loners; they are bold, confident, gutsy adventurers (McNamara & Prideaux, 2010). Bond (1997) observed that women travellers are independent and travel without fear. However, not all researchers agree on this observation. A number of studies (Woodward and Green, 1988; Pain, 1991; Whyte and Shaw, 1994; Bialeschki, 2005) have reported that solo women as a group tend to be conservative in the activities they undertake and the places they visit principally because of safety concerns (McNamara & Prideaux, 2010).

### **Solo Women Travellers**

Women travellers motivation varies from the male, studies revealed that women travellers are basically motivated by wishes to relax, socialize, get together with family, shop, and take part in physical activities as they took vacations (Pennington-Gray, L. A., & Kerstetter, D. L. 2001). Women represent two thirds of those traveling solo for the purpose of leisure, that indicates women prefer traveling alone than group (McNamara & Prideaux, 2010). Henderson suggested that more examinations have to be done pertaining to different groups of women on unique social (e.g., travel) circumstances (Henderson, K. A. 1994). Women travellers usually meet more challenges than other segments' travellers (Chiang, C. Y., & Jogaratnam, G. 2006). Despres 1997; Chang & Jogaratnam, 2006) agreed that violence against women threatens women traveling solo. Safety and security have been the major concern for women travellers, especially for those traveling alone (Chiang & Jogaratnam 2006).

### **Perceived Risk of Solo Women Tourists**

The concept of risk and perceived risk are strongly associated with consumer decision and travel behavior (Jonas, Mansfeld, & Potasman 2011). One of the most perceived risk while traveling abroad is the 'subjective uncertainty experienced by the tourists (Jonas, Mansfeld, & Potasman 2011). The behavioral approach that looks at tourists' perceived risk and a supply approach, examining possible events and circumstances that might put tourists

in jeopardy (Jonas, Mansfeld, & Potasman 2011). Hannon (2004) pointed out that, while women travel alone for many of the same reasons as men do, their social concerns, as well as their health and safety needs, are very different. According to Hannon, E. (2002) solo traveling, for many women, is the way to build confidence in their skills and self-care. As well, it is a way to become reacquainted with themselves. Irrespective of gender, soloists appeared to be naturally self-oriented in making travel decisions. Novelty appeared to be important to a great extent among this type of travellers when selecting exotic destinations. Self-actualization appears to be crucial in understanding a travellers' engagement with an activity or a product for a distinct and specific purpose to satisfy his or her particular interests and needs (Hall 1989; Loverseed 1997; Sorensen 1993; Sung 2004). Women solo travellers travel decision also associated with the risk experiences 'described by the travellers' or it's the level of risk description by the experienced travellers and later it can be transmitted to the potential travellers as 'anxiety' of travel. Anxiety in the case travel decision is the affective element that "refers to the fear of negative consequences of one's travel experience (Yvette Reisinger and Felixmavondo, 2005).

### **Violence against Women in India**

Crimes against women increased 34 percent over the last four years to 2015 (Firstpost, 2016). Sexual Violence against women in India has assumed alarming proportions (Datta, A. 2016). A data released by National Crime Record Bureau (NCRB) showed that an average 95 women raped in India every day (NCRB, 2017). Uttar Pradesh reported highest number of cases (35,527) in 2016. The World Travel and Tourism Council India Initiative comes with the statement in 2014 as the country is agog with the gruesome gang rape (WTTC, 2014). However, the crime rate against the women in India increased in the following year. This indicates that any sort of enforcement exercised to reduce the impact of crime against tourism was not effective. India's rape cases have been noted globally through visual media, newspapers as well as social media. CNN in July 19 the reported as 'India rape case a chilling reminder for women everywhere' (CNN, 2016). The Indian rape cases also captured attention in the academic journals. A study conducted by Carnegie Mellon University stated in its literature that in India, rape, sexual assault, physical and verbal abuse become especially pervasive given their strong roots in India's history and societal norms (Livne, 2015). The national daily, Indian Express reported over 34,600 cases of rape across the country in 2015 and the capital city Delhi is topping the 2nd by state (Indian Express, 2016). India sees one of the highest number of rape each year, the question and answer site 'Quora' quoted that 'why India is considered as the rape capital of the world?' (Quora, 2013). A Kuwait based news agency (KUNA) in conjunction with the UNWTO conference in India in 2014, reported that in India sexual violence against women has risen tremendously including foreign tourists, such incident drew serious outrage from across the world. The Associated Chambers of Commerce and Industry (ACCI) also reported that tourism has experienced a sharp decline particularly among women due to the negative image of the country, it's also reported that the tourist arrival dropped 25 percent since a gang rape occurred in New Delhi particularly female travellers (KUNA, 2013).

### **Destination Safety**

Tourism cannot develop in places that are perceived as dangerous. Safety and physical security are primary conditions for a balanced tourism development of a destination (Reisinger, Y., & Mavondo, F. ,2005). Tourism cannot develop in places that are perceived as dangerous. Safety and physical security are primary conditions for normal tourism development of a destination (Reisinger, Y., & Mavondo, F. ,2005). When tourists are in a foreign country, there are some intrinsic inexpressive risks they hold while travelling. If the destination is not established, such risk perception may increase. Destination competitiveness has tremendous ramifications for the tourism industry and is of considerable interest to practitioners and policy makers (Enright, M. J., & Newton, J. 2004). Such competitiveness report is "useful for the industry and government to understand where a country's competitive position is weakest and strongest" (Enright, M. J., & Newton, J. 2005). It is interesting to note that there was consistency at the top and bottom of the rankings. "Safety" was ranked first in all locations (Enright, M. J., & Newton, J. 2005). Positive images of a destination are not the only factors influencing where tourists choose to go; the degree of risk perception is also a key consideration (Law, 2006; Sönmez & Graefe, 1998; Tavitiyaman & Qu, 2013; Perpiña, Camprubí & Prats 2017). Awareness of the risk might discourage people from traveling to that destination (Perpiña, Camprubí & Prats 2017).

Despite its growing popularity and expansion in the travel and tourism industry and market segment that has appeared gradually, little scholarly investigation has been attempted in solo women travellers (Chiang & Jogaratnam 2006). India is a destination for solo women travellers. The Solo Women travellers blog stated that India is safe for

women provided that traveling in India requires special preparation and practices, especially if you're a woman (Adventurous Kate, 2014). This research intends to investigate on how domestic violence is perceived and translated into solo women travellers' experience in India.

## Methodology

Thematic analysis was conducted with the aim of extracting solo travellers' perception in more than one aspects of their perception about women safety. Thematic analysis is an interpretive technique to analyse and report themes within data. Using this approach, (a) a general perception of tourists visiting India will be extracted, (b) the resisting factors and (c) receptivity factors will be identified, (d) the way foreign tourists perceive India in general terms of women safety in the context of domestic violence against women will be identified, and (e) how the tourists narrate domestic violence into the context of travel safety will be defined. In order to conduct the research, online blogs were identified as a platform to gather data. Blogs have become an important form of emotional and informational release for growing proportion of the population (Jones & Alony 2008). Blogs provide rich and deep personal accounts (Jones & Alony 2008), which is the most valuable and reliable information for a specific subject to analyse data in research. The researcher selected the blog based on the topic of interest, the most widely addressed topic in the area of solo women travellers in India. A preliminary analysis done using Lonely Planet, online newspapers (telegraph), travel websites (interpidtravel), these were identified by a keyword entered in the google search 'solo female travellers in India: Is it safe'? the general result of this keyword was 'top tips to women traveling in India', fourteen tips for solo female travellers in India, happy, safe and solo: Traveling in India by yourself, how to do in India as a solo female traveller, twelve tips for women traveling in India alone, Delhi rape, how can women travellers stay safe.

## Profile of the Blog

In this research, the blog adventure kate was used, which provides an extensive interview with Mariellen Ward, a Canadian travel writer and longtime advocate for solo female travel who considers India her "soul culture". A total of 69 responses from solo female travellers were considered for data analysis. 16 comments were omitted due to the reply of blog containing no theme such as 'thanks for sharing', 'glad to hear that' 'that is impressive'. There were 3 responses from male travellers, which were also not considered to include in the study. There were 10 responses from the native Indians, which were also not taken into consideration as the scope of the research was limited to foreign solo women travellers. 40 solo female travellers responses were taken into consideration for data analysis.

## Data Analysis

Themes were created based on the narrations of the female solo travellers, the core themes derived from the narratives have classified based on multiple narrations on a specific context. The core theme selection is based on (a) perception of solo travellers who have reflected their trip experience about India as a tourist destination, (b) travellers experience on the people they have encountered during their visit, (c) travellers preconceived information about India on their safety. Out of 69 responses from the blog, seventeen responses from those visited India as solo travellers were taken from data analysis. Based on the narratives of the travellers, five key themes were derived such as (a) solo women travellers' perception on India as a destination for female solo travellers, (b), solo women travellers' encountered experience, (c), solo female travellers' overall experience in India, (d) solo female travellers' preconceived experience of safety in India, (e) solo female travellers' recommendation to potential visitors. To ensure an effective interpretation of the narratives from the selected bloggers, the narrations were described under specific themes. Blogs narratives by the selected respondents then categorised based on similar meaning and interpretation under the five themes derived from the blog content. Based on the categories of meaning, subthemes were created and in each themes described above. Emphasis on narratives under each themes and subthemes were given to conclude the findings.

## Findings and Discussion

### India as a destination for solo travellers

Solo travellers acknowledged that India is a rewarding country for women, in the context solo women travellers, tourists perceive destinations differently in terms of the destination's typical clientele or visitors. Past research has already demonstrated that destination image has a direct bearing on destination travel behavior (e.g., Backman and Crompton 1991; Chon 1990, 1992; Hu and Ritchie 1993; Milman and Pizam 1995; Riley 1995). The impression of solo travellers on India as a destination is promising, which is mainly due to the contrast of the country. The cultural differences, diversity and chilling contrasts are some curious interest of the travellers, in contrast, solo travellers describe India as an interesting country, however with a lot of complexity and backwardness, such impressions are also reflected as an encouragement to visit the country as solo travellers always take certain level of risk and challenges as part of the nature of the trip. Some women undertake solo adventures in search of the sense of empowerment, autonomy, and freedom (Cockburn 2016; Jordan and Gibson 2005; Wilson and Harris 2006). This choice renders solo female traveller a voluntary risk-taking endeavours to a certain extent (Elsrud 2001; Myers 2010; Yang et.al. 2017).

### Travellers Encounter

Though, the destination challenge attributes attract solo adventure tourists, however, certain challenging encounters during the trip pave the way for negative reflections, as it is due to the direct encounter of the travellers during their trip. It's the behaviour pattern of the men, 'the smile and eye contact interrupt in a wrong way', no one has time if you are in a risky situation; attitude towards women in India is upsetting;...

Most of the solo female travellers have had their fair share of negative experiences, such experiences have been reflected as negative and described as India is a tough place for solo women. Such experiences have been narrated two different ways. First, the destination India portrayed as a tough place and extremely chaotic, that mirrors the negative impression and solo travellers will be discouraged to travel. In this opinion, the destination is portrayed as overwhelming which is mainly narrated as 'sexual harassment', 'men harass women; women travellers' in the civilised society as often target; cautions of women travel during the night. Secondly, the unfavourable experiences are reflected as an opportunity, that fits the actual motivation of solo women, with adventure and challenges as enablers of travel motivation as the solo women travellers take off the beaten path and risk is associated with travel motivation. Thirdly, solo women travellers as a negotiator for safety, the indulgence of travel behaviour that fits the destination, which allows the travellers to make safe in the destination. This is a kind of cultural adaptation, such solo travellers does not see India as a risky place for women, rather the society's behaviour can be controlled by solo women travellers behaviour patterns and cultural adaptation, such experience is narrated as 'local can be at your feet at one moment and at your throat when your head turns'. Solo female travellers see the main risk of travel in India is 'sexual harassment', as the reflections of safety turned into the fear of 'rape', the narrations of pre-travel information search mainly end up with the information related to the 'rape statistics and comparison with other countries of the world.

### Recommendation to Potential Women solo Travellers

It may be an intrinsic fear, or not fitting to any acceptable travelling conditions, solo women travellers who visited India do not recommend India for the future solo women travellers. This context is narrated in two different levels. First, India is least recommended to solo women travellers as 'brand new travellers/ first timers'. Surprisingly, the narrations 'repeat' first timers or first time travellers, and the recommendations in the narrations are constantly repeated. Second, the destination is recommended for experienced solo travellers, who have visited other countries, which is also narrated in that the solo travellers needs indifferent courage and 'travel self-sufficiency' to visit India.

## Discussion

Perception of safety at tourist destination is indeed an important enabler for positive tourist disposition. Despite of Gender, it's an important criterion to enhance destination image. In the case of solo female travellers experience, destination safety is closely related visitor satisfaction and is a key measure for internal destination benchmarking leading to destination performance evaluation (Thomas, T. K. 2017). In general, for the solo travellers, irrespective of gender, their intrinsic capacity to tolerate and adapt destination culture is comparatively better than a normal tourist.

Perception of risk in tourism varies depending on tourists' characteristics (Reisinger, Y., & Mavondo, F., 2005). Based on the classification of risk by Roehl and Fesenmaier (1992), the solo travellers fall under the 'risk-neutral group' of tourists, they do not perceive vacations or traveling to destinations as risky.

India is generally perceived as a country with several anxieties. Non-academic sources, mainly digital media, have written several warnings about travel preparation to India. Despite of the strong destination attributes, India is generally perceived as unsafe. It's also argued by the solo female travellers as 'Women have always treated as 'Daasi' a slave and Indians to date are entangled in that abominable ideology'. India as a tourist destination is not strongly constructed by the society. The women's safety is fundamentally a domestic issue. However, it has been rooted to domestic and foreign travellers with significant regulatory irregularities. Though, there are several foresights on the future of India as one of the global economic leader in the future, women's safety and violence against women and its implication to travellers safety have become a fundamental question on the future of India. The gender disparity in India is much higher than many other nations. It's important to look on national safety regulations and fundamental human rights, the world's largest democratic nation has been far behind in institutionalising human rights and paying human values.

India as a tourist destination is much valued by tourists by its contrast, deep rooted history, cultural diversity and physical aspects. Solo (women) travellers are usually inspired by such interesting destination aspects. In the context of the current research, it is also important that the tourism systems work well when there is an established synergy between local community and the tourists, a locally receptive tourist destination will have a positive disposition to tourist experience, such synergy can be enhanced through creating better social awareness on tourism, which can be a national tourism priority. There is indeed an issue of societal consideration of tourism in India. Tourism is a social phenomenon, which has an important role played by the society (Thomas, T. K. 2017). When the society and tourism is detached from this social phenomenon, several adverse consequences can be the result. If tourism development has a positive impact on the destination community through improved quality of life, a societal transformation may take place, therefore a receptive society can be created, such society will be more receptive to the tourist (Thomas, T. K. 2017).

The growth of Indian tourism is comparatively slow, the local violence, especially to the women in India is noticed globally through the media. Safety and security for domestic and international travellers have become global concerns (Reisinger and Mavondo 2005). According to Gudykunst and Hammer's (1988) anxiety/ risk-reduction management theory, when a sojourner's anxiety and risk are high (and confidence is low), he or she will likely perceive an environment as less safe and withdraw from it (Reisinger and Mavondo 2005). This general observation on tourism is also reflected in the case of solo women travellers, though the level of challenges solo women travel take knowingly, however, they also perceive safety aspects negatively while recommending to other solo women. A destination that is perceived negatively by the hard core adventure tourists (solo) will have a less receptivity to the general tourists, as the general tourist will have a less adaptive capacity to tolerate a perceived adverse situation. When anxiety increases, perceptions of safety decrease and the intentions to travel decrease (Reisinger and Mavondo 2005). In the academic and non-academic literature, women's freedom right in India is highly debated and discussed. Based on the literature, the crime against women in India is high. However, there are no records showing the decrease of crime due to legal action against the criminals. This can be indeed a reason for increased violence, which can also be a cause for poor tourist image and eventually impact destination competency.

The solo travellers trend is gradually increasing and in the recent trends of travel decision making, women play an important role in travel trips. In this context, evaluating the perception of solo travellers is important in solo traveller's destination, solo travellers are more active online as they are 'off the beaten track tourists', travel decision making is often made through blogs and online feedbacks. Such massive information sources will also be referred by the non-solo tourists and destination general destination image is also being created through such media information.

Digital platforms and social media are indeed a good source of information dissemination for tourist decision making. However, there are no or very few studies, that have been conducted with the use of such sources for destination planning and development. The sources of information in the digital media are constructed in a less controlled environment than conducting an interview or an opinion survey, the data can be segregated to address a specific issue at the destination and they are extremely useful for destination planning and development. In theming and sub theming of solo women traveller's feedback is important to cluster the issues associated with their travel, which will then influence the travel pattern of future potential tourists. A specific focus on the issue related segments will enhance the visit of the future solo women tourists, such data are also important to plan or to take initiative to

change social set ups towards changing tourism development patterns. By understanding solo female tourists' travel patterns, tourism marketers can make more effective marketing decisions as well as target this segment of the population and develop customized marketing strategies (Chiang & Jogaratnam 2006).<sup>9</sup>

Based on the findings of research, destination resource competitiveness itself is not a travel determining factor for solo women tourists. Indeed, resource competitiveness is an advantage, but social connectedness and behaviour pattern in the social setups and its influence to tourism is also an important determinant. Solo women travellers respond in two different ways to the perceived risks associated with travel: (a) Their encounter is a reflection to their future trips and others, also, (b) (rarely) social risk factors perceived as a positive determinant for the solo traveller's trip (adventure tourists). Such travel decisions further validate the observation of Fisher and Price and Chiang & Jogaratnam that conventional approaches fail to represent the complexity of travel motivations. Traveling solo makes some women travellers feel autonomous and independent, and that they thrive on adventure (Chiang & Jogaratnam 2006). Such findings will throw some light on the latest motivational changes of female independent travellers. Another important observation of the female solo travellers is their reflection of their experience. The solo women travellers are more sensitive in the surrounding social environment, they interpret the local behaviours into how its reflected to the women travellers, societies approach to the tourists and most interestingly the solo women travellers pre-travel preparations through a 'deep dive' into national histories and their attitude towards women that the potential impact on their visit. An unusual circumstance of the entire narratives of the solo women travellers who visited India is that, though they have taken such an adventure journey, they mostly appreciated the vibrant culture and society, enthusiastic to explore risky travel due to known rape history and attitude towards women in India, the solo-women travellers are reflected to travel again to India and also not to recommend the country to any solo travellers, especially the beginners, as their travel agenda is associated with adventure. Solo traveling, for many women, is the way to build confidence in their skills and self-care (Chiang & Jogaratnam 2006) and when a person plans a purchase that is risky, this generates a fear of unknown consequences and feeling of "anxiety" (Dowling and Staelin 1994; Yvette Reisinger and Felixmavondo, 2005). Such analysis results are the reflection of the depth of issues the solo women travellers experienced during their visit. It's beyond the level of the adventures they can carry as a tourist in a country like India, e-word of mouth can ruin the destinations' performance. Such adversity is also beyond the theories of travel motivation.

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## Vizhinjam Port: Impact on Healthcare Tourism in Thiruvananthapuram

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### Abstract

*Thiruvananthapuram, the capital of Kerala, is blessed with natural beauty. From the cool hill station of Ponmudy to the world-famous Kovalam beach, the tourism potential of Thiruvananthapuram is tremendous. It also boasts of quality healthcare facilities in the allopathy and Ayurveda sectors. Yet, even with this combination of natural tourism potential and quality healthcare facilities it does not make it to the list of top Healthcare Tourism Destinations in India. Thiruvananthapuram will soon be getting a fully functional sea port at Vizhinjam. Vizhinjam lies very near to the international shipping route. The objective of this paper is to study the impact that Vizhinjam seaport will have on the Healthcare Tourism industry in Thiruvananthapuram. For this purpose, this paper studies the impact that seaports have had on major Healthcare Tourism destinations around the world. This paper then elicits the opinion of local experts and stakeholders to study how they anticipate the impact of the seaport on Thiruvananthapuram's healthcare sector. The paper then concludes with a summarization of the findings.*

**Keywords:** Healthcare tourism, Thiruvananthapuram, Vizhinjam

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

Medical tourism is one of the fastest growing tourism sectors. Medical tourism is also known as Healthcare tourism or just Medical travel. There is no standard definition for this. But a common definition is that it is the travel of people from one country to another country to receive medical, surgical, or dental care (K.R.Shanmugam. (2013)). Or in more simple words, Healthcare tourists travel across international borders for receiving medical treatment (Kelley, E. (2013)).

Thiruvananthapuram, the southernmost district in the state of Kerala is a premier tourist destination. Thiruvananthapuram has good medical facilities and is a player in the Healthcare tourism sector. A deep-sea port is being developed in Thiruvananthapuram, at Vizhinjam. Will Vizhinjam have a positive impact on the Healthcare Tourism scene of Thiruvananthapuram? This paper explores this question. For this purpose, this paper analyzes the present standing of Thiruvananthapuram in the tourism sector. The Medical tourism sector is briefly looked at. The Vizhinjam port project is studied. And finally, opinion of experts is elicited to study the impact that the Vizhinjam port might have on the Healthcare tourism scene in Thiruvananthapuram.

### Medical Tourism – India

India has established itself as one of the most sought after Medical Tourism destinations in the world. India is ranked No. 5 out of 41 destinations in the Medical Tourism Index developed by International Healthcare Research Centre and Medical Tourism Association. The number of Medical tourists to India has been increasing annually. Whereas 1.22 lakhs medical visas were issued in 2015, the number stood at 1.78 lakhs in 2016. The Foreign Tourist Arrival (FTA) also show a steady increase for years 2014-2016: 184,298 in 2014, 233,918 in 2015, and 361,060 in 2016 (Sharma, N. C. (2017)). With the economic growth being witnessed in India, facilities will improve, and more medical tourists will find India an attractive option. India's medical tourism market, which was valued at USD 3 billion in 2015 is expected to grow to USD 8 billion by 2020 (PTI. (2015, November 1)). Chennai is the medical tourism capital of India (Hamid, Z. (2012, August 20)).

One of the major factors that has contributed to India's growth as a healthcare destination is the healthcare infrastructure. The major cities in India have excellent healthcare facilities. India currently has 36 JCI accredited hospitals. The number of hospitals that are NABH accredited stands at 491. The Indian doctors, nurses, the treatment options available, success rates, excellent facilities in advanced healthcare – all these attract medical tourists to India. But the biggest attraction is that India offers high quality healthcare at a fraction of the cost that will be incurred in a developed nation.

### Top Medical Tourism Destinations in the World

The list of top medical tourism destinations compiled by various sources vary slightly. India finds a place in almost all the lists. The other common destinations are: Thailand, Brazil, Israel, Singapore, Malaysia, and Costa Rica (Medical Tourism Index. (2016)). One common aspect of the medical tourism destination cities in these countries is the presence of a sea port. Cruise ships docking in the sea ports bring in a lot of tourists to the port city.

### Thiruvananthapuram

Thiruvananthapuram is the capital city of the state of Kerala. Thiruvananthapuram is blessed with natural beauty. Thiruvananthapuram lies in between the Arabian Sea in the West and the Western Ghats on the East. On one side, Thiruvananthapuram district is home to the world renowned Kovalam and Varkala beaches. On the other end is the hill station Ponmudy. Thiruvananthapuram also has other beaches. In between the sea and the hill station, there are also many backwaters and waterfalls. There are many trekking destinations.

Thiruvananthapuram was the capital of the erstwhile princely state of Travancore. As such, it is dotted with heritage monuments like palaces, forts, and museums.

In terms of infrastructure, Thiruvananthapuram has good, wide roads, and a good public transport network. Thiruvananthapuram also has good road and rail connectivity to major cities across India. Thiruvananthapuram has a domestic airport with connectivity to major cities in India and an international airport which has connectivity to the Middle East and South East Asia.

Thiruvananthapuram has a tropical climate with temperatures ranging from 25 to 36 Degree Celsius. June to August and October-November are the rainy months. Thiruvananthapuram is not subject to extreme weather conditions.

Thiruvananthapuram has excellent medical facilities. In the public sector, Thiruvananthapuram has the Government Medical College, Government Homoeopathy College, and Government Ayurveda College. Thiruvananthapuram also has a Government General Hospital. Thiruvananthapuram is home to the Regional Cancer Centre, a cancer care hospital and research centre; and Sree Chitra Tirunal Institute for Medical Sciences and Technology, a tertiary referral super specialty hospital, and Biomedical technology research centre. In the private sector too, Thiruvananthapuram has high quality healthcare facilities. All in all, Thiruvananthapuram has everything going for it to be a most sought after tourism destination. And that certainly has been the case for a long time now, especially with foreign tourists flocking to the Kovalam and Varkala beaches.

### Tourist Arrivals

This section analyzes the current position of Thiruvananthapuram as a tourism destination. For this purpose, data has been collected from the Kerala Tourism Statistics for the years 2012, 2015, and 2017 published by Department of Tourism, Government of Kerala. Of all the tourist arrivals into Kerala, Thiruvananthapuram hogs a major share. More than the domestic tourists, Thiruvananthapuram's share of the foreign tourists arriving in the state of Kerala is higher, as shown in Table 1 below.

Table 1: Tourist arrival - 2016

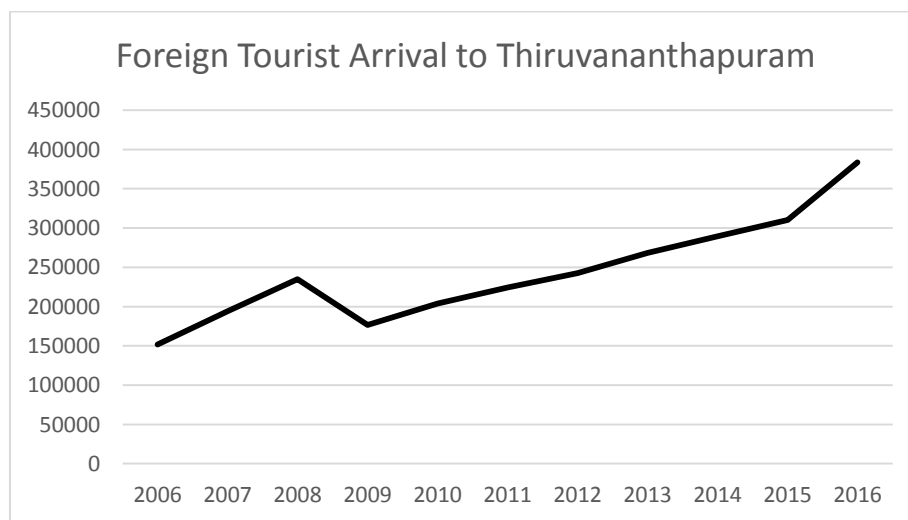
	Kerala	Thiruvananthapuram	Share of Thiruvananthapuram (%)
Foreign tourist arrival in 2016	1038419	383608	36.94
Domestic tourist arrival in 2016	13172535	2030384	15.41

Table 2 lists the annual tourist inflow into Thiruvananthapuram – both domestic and foreign. The tourist inflow has been increasing annually.

*Table 2: Tourist arrival to Thiruvananthapuram: 2006 to 2015*

	Foreign Tourist Arrival to Thiruvananthapuram	Domestic Tourist Arrival to Thiruvananthapuram
2006	151578	866712
2007	193924	948579
2008	234797	1102115
2009	176571	1074562
2010	204049	1160640
2011	224387	1288555
2012	242739	1408688
2013	268444	1556435
2014	289612	1707199
2015	310223	1861470

The focus of this paper is the foreign tourist arrival to Thiruvananthapuram. The following chart shows the growth of foreign tourist inflow to Thiruvananthapuram during the period 2006 to 2016.



*Figure 1: Foreign Tourist inflow into Thiruvananthapuram: 2006 – 2016*

Thiruvananthapuram City, the beaches of Kovalam and Varkala, and Poovar estuary and island, are the major parts of Thiruvananthapuram that seems to attract the foreign tourists.

Table 3: Top destinations for foreign tourists in Thiruvananthapuram - 2016

Destination	Number of Tourists
Thiruvananthapuram City	62715
Kovalam	169946
Varkala	121508
Poovar	8477

The data provided in this section gives a fair indication of the standing of Thiruvananthapuram as a sought after tourism destination.

### Vizhinjam Port

The newly under-development Vizhinjam sea port is a deep sea port, which is located around 16 Kms from Thiruvananthapuram. Though the plan for developing the port was conceived many decades back, the project was awarded in 2015. Vizhinjam enjoys the following major advantages:

- close proximity to the international shipping routes, and
- a natural depth of almost 18-20 m

The location of Vizhinjam is closest in India to the international shipping routes, and is at a distance of 10-12 nautical miles from the Persian Gulf - Malacca shipping lane. Figure 2 shows the shipping traffic near Vizhinjam as of 1700 hrs on 14 December 2017.

In addition to the advantage of the proximity of Vizhinjam with the international shipping lane, the port site has a natural depth of 18-20 m and minimal littoral drift, which means minimal dredging will be required.

Vizhinjam port will be a commercial port focusing on transshipment. But future plans also include a cruise terminal and Marina.

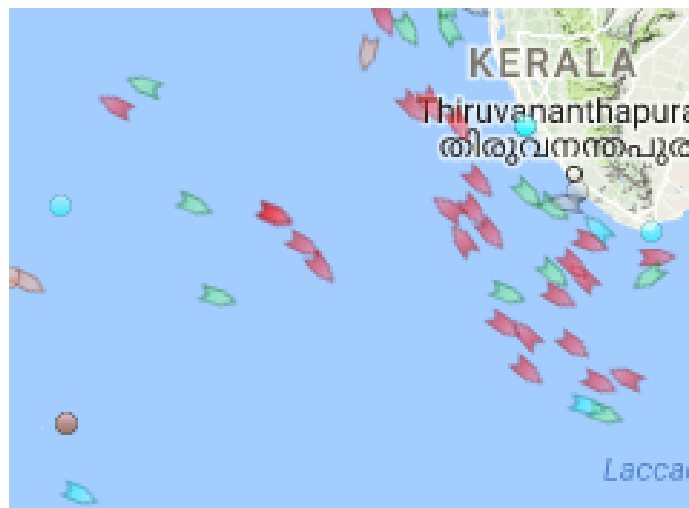


Figure 2: Ship traffic near Vizhinjam Source: <http://www.marinetraffic.com/en/ais/home/centerx:79.7/centery:10.3/zoom:6>

### Impact on Healthcare Tourism in Thiruvananthapuram

To ascertain the impact of the Vizhinjam Port on the healthcare tourism scene in Thiruvananthapuram, expert opinion was elicited. The methodology used was 'focused interviews'. The experts interviewed include an expert on seaports and shipping, officials of two leading hospitals, and a representative of a leading Ayurvedic hospital in Thiruvananthapuram. The hospitals contacted are major players in the healthcare tourism field. A set of questions for interviewing the seaport and shipping expert was prepared about the port under development and its potential to boost the inbound tourist traffic. A different set of questions was prepared for the hospital representatives. This dealt with the plans of the healthcare facilities once the Vizhinjam port becomes operational. The opinion of the experts gathered from the interviews are summarized below.

Vizhinjam port, once operational, will undoubtedly attract a large number of ships. Though in the initial phase, the port will cater to commercial transshipment business, a cruise terminal and marina are also planned. This will boost the number of foreign tourists inbound to Thiruvananthapuram. Also in the plans is the development of a port city, with all the facilities of a developed smart city. This port city will also have healthcare facilities.

From the interviews of the hospital representatives, it emerged that the hospitals are aware of the Vizhinjam port and the opportunities they presented. But they have not started planning to tap into those opportunities due to lack of specific information about the port development.

At a very high level, the plan for these hospitals is to start a high quality healthcare center in areas adjacent to the port. These units will be separate from the present healthcare facilities that they have in Thiruvananthapuram city and will cater exclusively to the healthcare tourists. The advantages in such a setup is that the facilities will cater exclusively to the tourists, and the location will be close to Kovalam beach and Poovar.

A major point that emerged was the setting up of high quality healthcare clinics that cater to the crew of the ships that will be docking at the Vizhinjam commercial port. Even without considering the possibility of cruise ships that may dock in the future when cruise terminal becomes operational, the healthcare clinics can be set up once the commercial operations at the port commences. These clinics will offer executive checkups to the crew of the commercial ships that dock at the port. This offers a major opportunity. Even when the cruise terminal becomes operational, this will still present a major business opportunity, as normal tourists enjoying the cruise can also opt for executive checkups. If a tourist on board the cruise ship becomes sick, they can get a checkup done at these clinics.

## Conclusion and Discussion

Thiruvananthapuram is already one of the top tourist destinations in India for foreign tourists. India is already a preferred destination for Medical tourists. With the deep sea port in Vizhinjam under development, foreign tourists will have one more port of entry. Most of the foreign tourist arrival to Kerala have been through the various airports across the country. As can be seen from Table 4 below, which shows the port of entry of foreign tourists to Kerala for the years 2010-2012, entry through seaports is negligible. This gives an opportunity for Vizhinjam port to exploit this opportunity to attract foreign tourists to Thiruvananthapuram.

*Table 4: Foreign Tourist Arrivals to Kerala – Port of Entry*

Port of entry	2010	2011	2012
Mumbai Airport	34.5	44.24	36.4
Delhi Airport	15.6	16.65	17.0
Kochi Airport	16.2	10.37	15.2
Thiruvananthapuram Airport	14.2	9.64	12.5
Calicut Airport	6.0	7.95	6.5
Chennai Airport	6.2	5.05	6.2
Bangalore Airport	0.0	3.66	4.1
Other Airports	6.3	2.04	1.8
Sea Ports	0.0	0.12	0.1
Land Checkposts	1.0	0.28	0.2
Total	100	100	100

*Source: Final Annual Consolidated Report for Continuous Tourism Survey for the state of Kerala, Datamation Consultants*

The common consensus of the experts interviewed is that the Vizhinjam port will indeed open up new avenues for Healthcare tourism in Thiruvananthapuram. The foreign travelers entering Vizhinjam need not be tourists, but can also be crew members of the commercial ships that dock at the port. Providing executive checkup facilities at the port for them can become a substantial revenue stream. The Vizhinjam port lies near the busy shipping lane connecting the Persian Gulf with the Strait of Malacca. The Persian Gulf accounts for almost 30% of global oil

supply, and East Asia accounts for almost 85% of the Persian Gulf's exports. The international shipping route near Vizhinjam is a heavy traffic route. If the all the stakeholders chalk out a plan for Medical tourism when Vizhinjam port becomes operational, the port can really boost the sector in Thiruvananthapuram.

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## Brief biographies of the authors

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## Risk Management in Hotel Industry: Chronicles from Chennai

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### Abstract

Chennai - a vibrant metropolitan city in the Southern part of India neighbors Bay of Bengal and throws open to a vast water bodies. Chennai itself houses several lakes and water reserves. Looking back at the past, one recalls some of the most unforgettable disasters like the Tsunami in 2004, Floods in 2015, cyclone Vardha in 2016 and so forth, that battered Chennai. Having said this, the research question that poses a deep focus would be on the initiatives and preparedness of the hotels in Chennai in securing the guests and assets of the hotel. In order to achieve a desired outcome, select hotels from Chennai are taken for the study. This paper employs a qualitative research and the study will be presented in a narrative style.

**Keywords:** risk management, disaster, hotels, staff

**Main Conference Topic:** Risk Management, Hotel Industry

### Prologue

Force Majeure or 'an act of God' is witnessed not only in a water surrounded place like Chennai but also around the globe. This includes earthquake, cyclone, floods, hurricane and so on. A few developed countries have a well devised mechanism to address the hour well in a scientific way though it may be a challenge to a few developing countries. As a societal issue, people work together and make over the aftermath. However, this research paper aims to analyze how luxury hotels tackle nature to protect its elite guests on-board from any sort of discomfort. To understand this stand, Chennai is considered for the study in general and hotels in particular.

**Foray into the Forefront** Weather events that have only a negative outcome can be termed as risk (Hopkin 2017).



Apart from the weather, fire, financial and other calamities also are classified as risks to the hotel industry. Though risk is part and parcel of any business house, the approach towards managing it comes as a team work. Pertaining to this paper, it is vital to know about Chennai. The following map presents a clear picture about the risk involved as too much of water bodies aggravate the chances of more flood during raining season. There are more than 600 hotels in Chennai ranging from 3 to 5 star deluxe. These hotels are exposed to severe risk during rainy season due to the water bodies. An important reason for flooding is also due to encroaching building areas on rivers, lakes and waterbodies for the past 40 years leaving no way for the drainage. In the present times, the Chennai corporation finds this very difficult to tackle, as the past has locked the way out for the waters to move around during rainy seasons. Hence, the hoteliers have devised their own strategies to tackle the menace without depending on the Corporation authorities for assistance.

Figure 9 Map of Chennai with water bodies

### Hotel business, guests and staff – Scenario during the floods

The lashing rains and floods in Chennai in 2015 posed a severe threat, indirectly enabled the hotels to maintain 100% occupancy, as none of the guests moved out (Jana 2017). Numerous bulky events in different hotels were cancelled during the entire week, and most of the hotels ran out of supplies (Usha 2017). Though Public Relation Manager Arushi Gupta's home was only five minutes away from Leela Palace hotel, she wasn't in a position to leave the hotel due to high water levels (Gupta 2017). Interestingly, she added that her team was receiving calls from the local residents, that they wanted to check-in and many in-house guests decided to extend their stays. She also commented that around 50 rooms were booked by Citibank executives, who were in town as they could not travel through the waters and reach their homes. The training manager of Leela Palace too opined that about six large banquet events were cancelled and that running short of cooking gas and sourcing out new supplies was a big challenge (Diana 2017).

In a similar manner, the 600-room ITC Grand Chola in the Guindy area of the city accommodated not only 1500 guests, but also its' staff (Menon 2017). Additionally, the hotel received calls from various other hotels requesting them to accommodate guests. With no rooms left, the hotel ballrooms were also opened for guests and they were served tea and snacks, during which was considered a Godly act during crisis. The Managing director of Lemon Tree Hotels was relaxed and felt safe as his hotel was not affected by the flood due to the higher ground on which the building stood. However, his other hotel in a different area was severely affected and had no back up of diesel and drinking water (Keswani 2017). Those guests who were part of a conference on the day of flood stayed back and the rest of the events were cancelled leading to loss in the revenue (Abdul 2017).

In most cases, many hotels saw a heavy influx of guests who were not staying in the rooms. The passerby travellers and residents started pushing themselves into the lobby, banquet halls, restaurants and where not as the roads saw heavy rise of water. The hotels were accommodative and kind to all those, who considered hotels as an asylum. However, even hotels started witnessing several feet of water rising up and soon boats were seen to be plying on the roads.

A few hotels had a different strategy to overcome the situation like the Hilton. Hilton had planned a remote expertise center in Bengaluru to oversee the condition. The hotel also entertained travellers who were stranded amidst the floods. They also had ample provision for food and other supplies (Apeksha 2017). Hilton also took care of its employees by giving them a separate banquet hall for men and a ballroom for ladies, which is indeed a soul stirring one (Venugopal 2017). A few hotels took extreme care and risk by deciding to move their guests to Bengaluru. The Park and Leela Palace arranged tow buses for some of its guests who felt they could be alright if moved to Bengaluru. Buses were arranged as the airport services were shut down (Shalini 2017).

Though adequate initiatives of rescue operations were carried out by hotels, the fact remained, that after floods would be gone, the occupancy levels would come down drastically as in-house guests would leave and new guests would not turn up to the city due to fear (Economic Times 2015).

In common, many hotels felt that they were running short of supplies, especially diesel, since power supply was cut off. Hotels like ITC Grand Chola, which is the largest hotel in Chennai with over 600 rooms, several banquet halls and restaurants ranging over an astounding 1.6 million sq ft floor area, had to zone parts of the hotel where floors were shut and diesel was conserved. The hotel was forced to close most of its restaurants and shortened its buffets. The guests also were accommodative in accepting the brief menu that was offered.

While taking care of the hotel's associates, the Regional Manager – Learning Services commented that

***“Our staff has shown great resilience. They have been working round the clock. Our engineers and maintenance staff are ensuring that water doesn't come in by creating Bunds”*** (Mallick 2017)

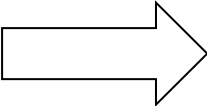
Apart from supplies and food, connectivity and network were another issue that was faced by most of the hotels. Their phone lines were down and guests could not reach out to their families or offices. The Hilton Chennai wisely forwarded all its mails to the Hilton at Bangalore as it was unable to access them. Family members of guests were desperately trying to get in touch with guests who were staying in the hotels (Stanley 2017). The rain that lashed from Monday through Wednesday, luckily stopped from Thursday. So, most hotels went out of the way to replenish their supplies (Tripathi 2015).

It was a synchronized effort by the hotel staff of various levels that made a safe stay and provision-full day for the guests possible. One such guest commented in the Trip Advisor that;

***“Hi. Our stay in Chola was one of the best stay ever. As we were in the middle of flood crisis in Chennai and we decided to go and stay over there with such short notice and were welcomed immediately, it's commendable how the team of Chola held fort in difficult times and took such good care of the guests. The best of hospitality, care and delicious food made our stay very comfortable” (Rithika 2015)***

From the above study, it is gleaned that the risk management was well handled by the hotels in Chennai. It is argued here that no traditional risk management strategies were followed other than a human touch. The following chart gives a direction on the holistic way the situation was handled;

Table 1. A holistic model to handle risks

Handling Risks in Hotels		Presence of mind
		Team work
		Tendency to help
		Forgoing the rules
		Empowerment
		Forgoing the hierarchy
		Practicality
		Sacrificially reaching out
		Mentally prepared

## Conclusion

This paper discusses in detail the weather event that gave a negative outcome to the place and was challenging to the hotels in all dimensions. The study relied upon interviewing the concerned authorities who were involved in rescue operations during flood and their valuable inputs were included as the primary source of information. Finally, the paper summarized, that human touch is far more required while handling risks of this nature than only depending upon some set of rules or procedures. This paper can be used as a case study for pondering deeper into the subject. It can also be utilized as a base for similar kind of research.

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## Changing Paradigms: A Reflection on the Pedagogy of Teaching in Autonomous Institutions in Kerala

Latha Nair, R.

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### Abstract

*This paper is primarily based on my experiences as a teacher at St. Teresa's college which has been promoting active learning in Higher Education for 92 years. We had an inclusive culture that aimed at human excellence and academic excellence, which had been laid out for the institution very clearly by our foundress St. Teresa of Lima. The institution always encouraged its faculty to go beyond the academic requirements and inculcate in the students an aptitude for research, intellectual curiosity and to strive for academic excellence.*

*We were granted autonomy three years ago. The teachers were nominated to different academic bodies to carry out administrative work. This paper would explore the challenges faced by the teachers, especially women, who were surrounded by the plethora of demands placed by autonomy. As teachers, are we able to ensure valid transmission of knowledge? What happens to teaching pedagogy, when the political agendas interrupt pedagogical methods? Are we able to introduce the pedagogical methods, which are suitable for an education, that now relies more and more on interpersonal skills and higher level of cognition (Cowan, 1998).*

**Keywords:** *autonomy, pedagogy of teaching & learning, literacy, research*

**Main Conference Topic:** *Education, Didactics and Personal Development*

### Introduction

This paper is not to denigrate autonomy, but to problematize the teaching and learning environment in the Higher Education Institutions of Kerala after getting autonomy in the year 2014. My reason for choosing this area is the concern about the main stake holders – teachers and students, who do not have a choice but to go through this period of transition. The intension is to engage the advantages and disadvantages of autonomy, that has replaced the traditional system to a certain extent. What we need is to start a discourse or to get the academicians to talk about the visible paradoxes in the term "academic autonomy", which has become very complex as a result of our particularly contradictory nature of the affiliation to the Parent University.

### Context

The questions raised in this paper are based on my own academic experience within the frame work of autonomy especially in the teaching and learning environment. The focus is on the teachers who have the responsibility of providing and maintaining quality in the dissemination of knowledge.

The relevance lies in the fact that I have sought answers among my own colleagues. Thirty teachers have participated in this study as informants. A simple questionnaire was circulated to understand the effect of autonomy and to provide a base for discussion in this paper. Autonomy was granted to eleven colleges in Kerala after reviewing their contributions to the main stake holders. As an autonomous college under Mahatma Gandhi University, St. Teresa's College was determined to revamp the curriculum by retaining all the fundamental stipulations of the University/Higher Education Council, for ensuring the minimum standards, but to improve upon them as far as possible. At the outset, we resolved to take a collective effort to create an inspiring academic culture within the institution, essential for teachers and students to access deeper knowledge and participate in its expansion and transmission. It is also to re-articulate production and transmission of Quality Knowledge, essential for the development of students in particular and society in general.

### Changing Paradigms

Before autonomy, teaching and learning used to take place under extra academic compulsions and the approach was largely examination centred, with the result that effective learning hardly took place. The introduction of

autonomy was thought to bring in an effective change in the existing environment. The focus of autonomy would be to improve the students' poor knowledge base, kindle genuine interest, erase lack of aptitude and obsolete learning methods. The provision for innovation would also to a great extent remove the indifference of teachers and facilitate institutional insistence upon quality assurance. The main task was that of interpreting quality in a teaching and learning environment. Quality in teaching means rendering deeper knowledge plausible in the lecture or practical or any other learning experience whatsoever. It is a systematic cognitive advancement from the factual, through conceptual and procedural to meta-learning (B.S. Bloom, et.al., 1956 and Anderson et.al, 2001). We call it serious learning that is systematic and self-conscious unlearning, i.e., being conscious about the prior notions replaced by learning. Teachers were given training as to how to plan a curriculum that would define the learning competencies as well as the graduate, post graduate and research attributes. We wanted to provide creative space for issue based interactive learning among science and non-science learners through disciplinary convergence. Curriculum design and implementation was done by teachers and it had to be implemented in a short period of time. But this task was achieved by the commitment of teachers.

### **Conflicts Galore**

In the wake of autonomy, the institution decided to introduce new courses which would facilitate a new instruction culture inspired by non-conventional modes of knowledge transmission. Traits of this new pedagogy are: a) techniques of issue based and interactive learning, the learner centred curriculum design with flexibility and choice ensuring creative freedom, b) participatory knowledge production enabling the learner to be innovative. We introduced 19 new courses in the self-financing sector, after taking into consideration the demand of the main stake holders.

Soon after the implementation of autonomy, there was a change in the policy of the state government towards the grant of autonomy. This has generated a lot of inter-conflicts as well as intra-conflicts between the management and the parent university regarding the approval of courses by the parent university making the teaching and learning environment more complex and stressful.

### **Pedagogy of Teaching**

The main question that is raised in this paper is whether autonomy has placed the academic profession under stress. The questions put forward to the teachers/informants focused on their literacy practices as teachers. The greatest fear that surfaced from this discourse is whether our teaching and learning options are alienating and debilitating to students, in which the overall institutional supervisory neglect has a major role, that ultimately would turn the whole enterprise a farce.

The challenge for teachers within the framework of autonomy is quality assurance and maintenance in the teaching, learning and evaluation process where teachers have to be accountable. Without the commitment and dedication of teachers, it is impossible to maintain quality. The role of the teacher thus becomes multi-dimensional and more complex, as it involves them in total quality management of the institution. There is a plethora of demands placed by the "consumers" of education (students, parents and employers) and this places the teachers under a lot of stress. Along with an average 5-10 hours of administrative work, the teacher has 16 hours of class room teaching in a week. Quality enhancement has become stressful as it has become a deliberate process without proper planning, discussions, evaluations and encouraging the main stake holders to process the feedback constructively. The labelling of the space of teachers in the academic environment has to be carefully audited and should be made stress free to enable them to contribute more to serious learning.

The teachers do welcome "autonomy", but not this partial non conclusive one which sandwiches the teaching/learning environment between the traditional system and the new one that remains as a conceptual framework, because of the political interruptions. The main stakeholders go through a period of uncertainty as the questions of autonomy remain unresolved and poorly defined. Understanding and defining autonomy along with a closer engagement of the issues in the teaching/learning environment and setting up a proper system taking in to consideration the cognisance of research in the area would definitely bring in a transformation in the Higher Education landscape.

## Conclusions

The literacy practice of the teachers in the Kerala Higher Education Scenario involves multi-tasking at various levels. Research, publication and public service are the three important criteria for teachers to contribute seamlessly along with their teaching practice. The most important criteria for teachers is facilitating serious learning in an innovative manner

But with the transition and the newer responsibilities of organization & management, organization of institutional events, examination and evaluation, maintaining healthy campus life, handling of complaints and grievances, taking leadership positions, and managing various clubs and cells connected with all co-curricular activities, the stress level of teachers has increased considerably. The thirty informants were unanimous in saying that the stress level has increased tremendously at the work place. They have also pointed out that the ten hours of administrative work per week have also decreased their research contribution and publication of papers. Another concern of the teachers is that they cannot contribute as much as they want in the domain of serious learning, mentioned earlier. The time that they could devote for mentoring, peer observation and remedial coaching have decreased considerably. This causes a lot of discomfort among academicians as they remain rooted to the belief that the students are more important than any other academic embellishment.

This paper has marked out the challenges that the teaching body faces as academics in the new world concept. The need is to respond proactively to the concept. The Parent University and the autonomous colleges should have a constructive framework laid out for autonomy to be implemented properly in all the affiliated colleges. We are sure that the social base in higher education will continue to broaden and the time has come for policy makers of Kerala Higher Education to address the needs of autonomous colleges in Kerala. I am sure that in the years to come our academic profession will become more internationally oriented and mobile, but will still be structured in accordance with national circumstances.

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## Usage of Assistive Technology in Higher Education

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### Abstract

*Many different assistive solutions that can help students with disabilities exist and many more are in development. However, despite the fact that these solutions as an aiding technology can be found, their actual usage is in many cases very limited. In this paper, an overview of a large number of existing assistive technologies that can be used in higher education is given along with the discussion about the actual usage of these technologies.*

**Keywords:** *assistive technology, higher education, students with disabilities*

**Main Conference Topic:** *Education and Challenges of Teaching Professionals*

### Introduction

When talking about people with various disabilities it can be said that some measures have been introduced in order to ensure equal opportunities and to prevent discrimination. These efforts have been incorporated through various aiding technologies and through different legislation measures in the form of various laws. One of the examples of this kind of measures is a common legal European framework on non-discrimination with the Treaty of Amsterdam from 1997, Article 13 (Ebersold, Schmitt, & Priestley, 2011). European Union has emphasized equal opportunities and promoting jobs for people with different disabilities in several strategic documents (Cattani, 2009; bfi Steiermark, European Labour Market Report, 2017).

Although the mentioned measures have been implemented, people with disabilities still have lower employment rate than people without disabilities: 47% compared to 72% (Grammenos, 2013). A similar difference can be found in student enrolment rate when comparing students with and without disabilities. Research has shown that students with disabilities are only 40% as likely to enroll higher education studies when compared to students without disabilities (Widening Participation in Higher Education in England, 2017).

Regarding assistive technology, despite the fact that many assistive solutions exist in the form of different aiding technology the usage of these solutions is in many cases not as widespread and frequent as it would be expected. Many students use only the basic assistive technology and many courses do not incorporate any assistive solutions. The reasons for this kind of situation can be found in many different factors. These reasons are presented and discussed in the rest of this paper.

### Types of disabilities

There are many different types of disabilities that can affect students and each of these disabilities require a special set of skills and appropriate knowledge from the teachers in order to successfully utilize various technological and organizational measures that can help students. When talking about different disabilities American organization CDC provides the following classification (Disability Overview, 2017):

- Vision
- Movement
- Thinking
- Remembering
- Learning
- Communicating

- Hearing
- Mental Health
- Social Relationships

Independent news source Disabled World gives the following categories of disability (Disability: Definition, Types & Models, 2017):

- Mobility and Physical Impairments
- Spinal Cord Disability
- Head Injuries - Brain Disability
- Vision Disability
- Hearing Disability
- Cognitive or Learning Disabilities
- Psychological Disorders
- Invisible Disabilities

In general, World Health Organization looks at disabilities through three separate dimensions (International Classification of Functioning, Disability and Health, 2001):

1. Impairment in a person's body structure or function, or mental functioning; examples of impairments include loss of a limb, loss of vision or memory loss.
2. Activity limitation, such as difficulty seeing, hearing, walking, or problem solving.
3. Participation restrictions in normal daily activities, such as working, engaging in social and recreational activities, and obtaining health care and preventive services.

### **Assistive technology**

Generally assistive technology can be observed through the paradigm of two separate models (Shakespeare, 2006; The social and medical model of disability, 2017):

- Medical model
- Social model

Medical model seeks to provide assistive technology that will aid in curing the disability in the medical sense (i.e. cochlear implant) and social model seeks to provide assistive technology that will change the organizational and social aspects that surround people with disabilities (i.e. magnifying device for reading newspapers). There are many different types of assistive technology but a large number of available solutions refer to aiding visually impaired students as this group of students experiences some of the biggest learning challenges in higher education system. When talking about the assistive technology for the visually impaired a number of different assistive technologies and tools can be used. Some of the more known and mostly used assistive tools include (Konecki, Lovrenčić, Seo, & LaPierre, 2017; SAS enables visually impaired to 'visualize' data, 2017):

- Kurzweil 3000
- Window-Eyes
- NVDA
- JAWS
- Narrator
- NaturalReader

- ORCA
- VoiceOver
- Talkback
- BrailleBack
- Capti Narrator
- TOBII Eye Tracking System
- ICommunicator
- Head-Mouse Extreme
- Math Daisy
- Text Help System
- Blind Square
- Multimodal Graphs
- Pie Chart Sonification
- MultiVis
- BATS
- Graph Builder
- TACTICS
- 3D Shapes Visualization
- exPLoring Graphs
- VizTouch
- MathTalk
- Highcharts
- SAS Graphics Accelerator

Most commonly used assistive tools for visually impaired include various screen readers and graphics representation tools (sonification or tactile representation).

### **Usage of assistive technology**

Although there are various assistive tools available and many universities and faculties have established a special office for educational equity the actual usage of these tools is in many cases very limited. The reasons for this can be found in many different factors, such as (Main barriers to education for students with disabilities, 2017; Access to education for students with a disability: Barriers and difficulties, 2017):

- Inadequate funding
- Physical inaccessibility
- Accommodation process
- Lack of individualization
- Ineffective dispute resolution mechanisms
- Negative attitudes and stereotypes
- Lack of available options

- Lack of information to families or prospective students about options
- Inconsistency (lack of equivalence) between various education providers and sectors
- Insufficient equipment, technological aiding means and other devices
- Disability unrecognized or undiagnosed
- Lack of proper training and support from teachers
- To large class sizes (class sizes need to be reduced where classes are inclusive)

During the interviews with a number of both teachers and students the two main reasons of not utilizing the assistive technology in a larger capacity have been stated in most cases:

1. Not knowing about the assistive technology
2. Not knowing how to properly use assistive technology

Based on the previously stated reasons it can be concluded that providing both teachers and students with more information about existing assistive technology and with detailed instructions about how to properly use this technology remains an important goal of overall educational equity efforts.

## Conclusion

There are many different disabilities that affect a number of students worldwide. Although many different assistive tools exist many of them are not used in sufficient and the most effective manner. The reasons for this can be found in many different factors but the most prominent reason is insufficient awareness about these tools and about how to use them. In order to solve this problem more information about these solutions are needed so that both students and teachers can fully benefit from using these tools. Further dissemination of information about assistive technology and development of repositories of such tools as well as providing means of getting to know how to work with these tools will be a part of future research efforts that will also deal with effects of such developments.

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## Social Entrepreneurship as a Model of Employment of Persons with Disabilities

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### Abstract

*The interest for social entrepreneurship is increasing in Croatia where social enterprises strive to solve the problems of local communities. One of the manifestations of social entrepreneurship includes the employment of vulnerable groups of people, including people with disabilities who face barriers in the labour market. Social entrepreneurship as a model of employment of people with disabilities is not well researched in Croatian context. The paper gives an analysis of the state of development of social entrepreneurship in Croatia followed by an overview of measures of active employment policies for persons with disabilities and the results of measures taken. Further on, the socio-demographic structure of people with disabilities is presented. Based on a case study of a social enterprise that employs persons with disabilities the psychological, social and material benefits of working will be explored.*

**Keywords:** social entrepreneurship, persons with disabilities, employment, benefits

**Main Conference Topic:** Economy, Entrepreneurship and Tourism

### Introduction

According to the European Commission (European Commission, 2011, p. 3), the term “social enterprise” covers two types of businesses:

1. “businesses providing social services and/or goods and services to vulnerable persons (access to housing, health care, assistance for elderly or disabled persons, inclusion of vulnerable groups, child care, access to employment and training, dependency management, etc.); and/or
2. businesses with a method of production of goods or services with a social objective (social and professional integration via access to employment for people disadvantaged in particular by insufficient qualifications or social or professional problems leading to exclusion and marginalisation) but whose activity may be outside the realm of the provision of social goods or services.”

Thus, for persons with disabilities social entrepreneurship could be an important part of their work integration.

Social entrepreneurship entered Croatian strategic documents as a part of the National strategy for the creation of enabling environment for civil society development from 2006 to 2011 (Government of the Republic of Croatia, 2006) and thus is a relatively new phenomenon in Croatian economy and society. In 2012, the Cluster for Eco-Social Innovation and Development (CEDRA HR) was founded by several organizations with the experience in promoting social entrepreneurship as a network of 6 supporting regional centres for the existing and potential social entrepreneurs. It provides education, consulting, information, promotion, and even work infrastructure and knowledge exchange (CEDRA HR, 2014).

In 2015, the Croatian government adopted the Strategy of social entrepreneurship development. Currently, it is impossible to collect the data about all social entrepreneurs in Croatia because there is no central register although the Strategy proposed making a list of social entrepreneurs that satisfy the criteria defined in the Strategy, which would then serve as a basis for the financing and monitoring of social enterprises in Croatia. The initiative to make the list of social entrepreneurs came from the social entrepreneurs themselves. Currently, there is an online List of sustainable products and services that includes 103 products and services produced by 23 organizations (Imenik održivih proizvoda i usluga, 2017). Since there are organizations that are not on the list, but are present in the media due to their social-entrepreneurial ventures, it can be estimated that currently in Croatia operate around 40 social entrepreneurial ventures.

### Persons with disabilities on the Croatian labour market

Disability is a permanent limitation, reduction or loss of the ability to perform some physical activity or mental function that is appropriate for person's age and generally accepted as the ability that the person needs every day throughout the whole life (Law on Croatian Register of Persons with Disabilities, 2001). According to the Law on Vocational

Rehabilitation and Employment of Persons with Disabilities (2013), persons with disabilities are persons with long-term physical, mental, intellectual or sensory impairments, and therefore they encounter various obstacles preventing them from participating effectively and equally in the society. According to the Regulation on Assessment Methodology (2017) there are several types of disabilities, that is, damage to functional abilities, which are: physical, sensory, intellectual, mental and disorders from the autistic spectrum.

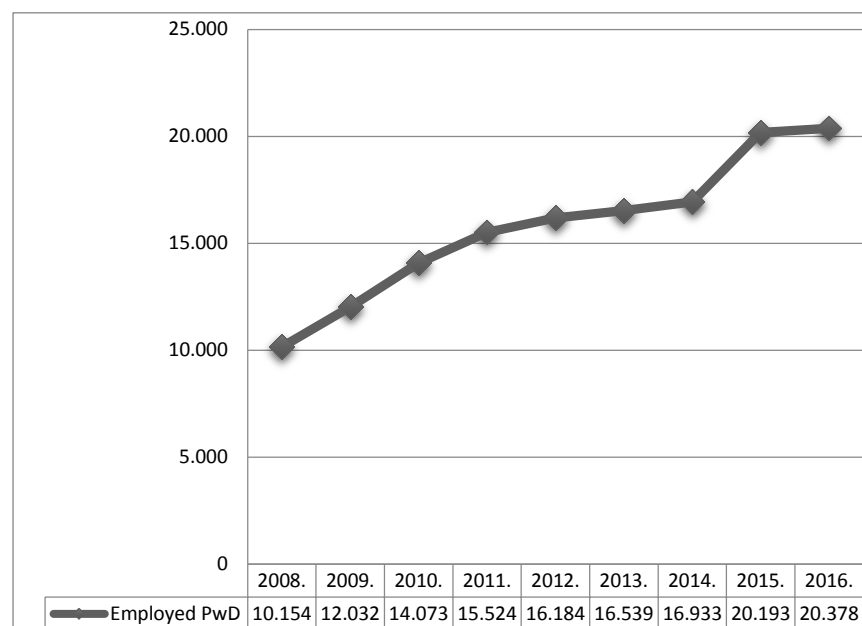


Figure 1: The number of employed persons with disabilities (PwD) in Croatia from 2008 to 2016 (Croatian Institute of Public Health, 2017b)

The same law also defines a person with a disability with residual work capacity as a person whose disability has the consequence of reduced ability to be trained and recruited in comparison to the abilities of persons without disabilities of equal or similar age, education, performing equal tasks in equal work conditions. Persons with disabilities with residual work capacity can also be persons with disabilities, whose work performance is within the limits of the expected, but on the basis of reduced actual and estimated general abilities of such a person it is estimated that this is in the interest of preserving her or his physical, sensory and mental abilities (Law on Vocational Rehabilitation and Employment of Persons with Disabilities, 2013). In order to determine the degree of disability, medical documentation is submitted to the Croatian Pension Insurance Institute, which sends it to the Institute for Disability Certification, Vocational Rehabilitation and Employment of Persons with Disabilities (Croatian Pension Insurance Institute, 2017). Persons with disabilities with residual work capacity have the right to professional rehabilitation or use of the services of the Center for Vocational Rehabilitation established by the individual professional rehabilitation plan.

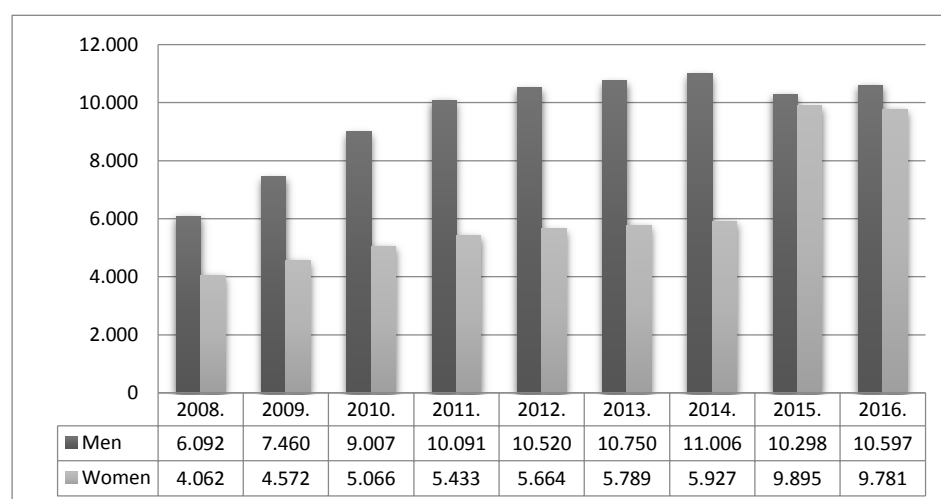


Figure 2: The number of employed persons with disabilities according to gender in Croatia from 2008 to 2016 (Croatian Institute of Public Health, 2017b)

In Croatia, there are 511,850 persons with disabilities, out of which 60.16% are men. (Croatian Institute of Public Health, 2017a). In Croatia, persons with disabilities account for 12.18% of the total population of the Republic of Croatia, i.e. 9.38% of women and 15.18% of men are persons with disabilities. If we look at the age structure, at age 0 to 19 there were 39,055 persons with disabilities, in the age group 20 to 64 there were 243,206 persons with disabilities, and at the age of 65 and over there were 229,589 persons with disabilities. In the Republic of Croatia, 63% of persons with disabilities did not finish primary school or have only primary school education, 28% have secondary education, while only 3% of persons with disabilities have higher qualifications. Special education have 6% of persons with disabilities.

Figure 1 shows the number of employed persons with disabilities in Croatia for the last nine years which is constantly growing. The largest increase in the number of employed persons with disabilities is observed in 2015 because of the implementation of the new Law on Vocational Rehabilitation and Employment of Persons with Disabilities (Croatian Employment Service, 2016).

In Figure 2 it is shown that each year more men were employed than women. However, in the last two years, the number of employed women with disabilities is almost equal to the number of employed men with disabilities.

Persons with disabilities can be employed in the open labor market or under special conditions with the employer's obligation to adapt the workplace to the person with disability to be as equal with others as possible. In addition to the job adaptation, the employer is required to adapt working hours, professional supervision and assessment of the work ability to the individual needs of the employed person with a disability and to provide paid vacation of at least five weeks (Law on Vocational Rehabilitation and Employment of Persons with Disabilities, 2013).

### Active employment policies for persons with disabilities

The Croatian Employment Service is implementing a range of active employment policies for people with disabilities. In the period from 1<sup>st</sup> January to 30<sup>th</sup> June 2017, 267 persons with disabilities were included (Croatian Employment Service, 2017). The active employment policy measures for persons with disabilities are: public jobs, employment grants, vocational training without commencement of employment and self-employment grants. The results of active employment policy measures for persons with disabilities from the 1<sup>st</sup> January 2017 to the 30<sup>th</sup> June 2017 are presented in Table 1.

*Table 1: The results of active employment policy measures for persons with disabilities from the 1<sup>st</sup> January 2017 to the 30<sup>th</sup> June 2017 (Croatian Employment Service, 2017)*

Measure	Number of persons with disabilities included	Men	Women
Public jobs	192	123	69
Employment grants	54	34	20
Vocational training without commencement of employment	16	6	10
Self-employment grants	5	4	1
Total	267	167	100

According to the Ordinance on Incentives for the Employment of Persons with Disabilities (2017) to the employer who employs a person with a disability the Institute for Disability Certification, Vocational Rehabilitation and Employment of Persons with Disabilities subsidises for a year 75% of the annual gross salary of person with a disability and co-finances: the cost of adjusting the workplace, costs of adjusting work conditions, education costs, professional support costs, interests for loans intended for the purchase of machinery, equipment, tools or equipment needed to hire a person with a disability and co-finances special funds for innovative employment programs. The exact amounts of these incentives depend on the weekly working time of the person with a disability.

In addition, the employers employing at least 20 employees are from 1<sup>st</sup> January 2015 obliged to employ persons with disabilities as 3% of their total number of employees regardless of the activity they perform (Ordinance on Amendments to the Ordinance on Setting Quotas for Employment of Persons with Disabilities, 2015). Instead of employment, an employer may fulfil the quota by providing internship to the students with disabilities or to the persons with disabilities who are in the process of professional rehabilitation, by ensuring vocational training without commencement of employment, providing one or more scholarships for regular education of persons with disabilities, concluding one or more work contracts with a student with disability who has the status of a regular student, concluding one or more business cooperation agreements with a person with disability who is self-employed, concluding one or more business cooperation agreements with a protective workshop and an integrative

workshop, or any company, co-operative or non-governmental organization where persons with disability make more than half of the employees.

If the employer fails to meet the quota, the company is required to pay a monthly monetary fee amounting 30% of the minimum wage for each person with disability the company was required to employ in order to meet the prescribed quota (Ordinance on Setting Quotas for Employment of Persons with Disabilities, 2014). On the other hand, if the employer employs more persons with disabilities than the prescribed quota requires or an employer employs fewer than 20 employees, among which are persons with disabilities, the employer is entitled to a monetary reward amounting 15% of the minimum monthly wage for each person with disability that represents an excess in relation to the prescribed quota. However, an employer can only achieve the award for a period of up to six months continuously for the particular person with disability that the company employs (Ordinance on Setting Quotas for Employment of Persons with Disabilities, 2014).

The study from 2010 (Matković et al., 2010) shows that persons with disabilities during the process of employment and later in the company's work encounter various forms of discrimination and are the group that is the most susceptible to discrimination in the Republic of Croatia. The research has shown that Croatian employers, especially small and medium entrepreneurs, are not sufficiently educated about the prohibition of discrimination and are not aware of the mistakes they do when employing already during the selection process. Most Croatian companies do not have a declared policy of equal opportunities (Matković et al., 2010). The same study shows that, apart from various forms of discrimination, the most frequent problems of persons with disabilities during their work are problems in communication with the co-workers, the problems during the realization of the given tasks and problems with accessibility of the workplace.

## Methodology

In the research that was carried out for the purpose of this paper, the psychological, social and material benefits that persons with disabilities gain when working in a social enterprise have been identified. Also, in the focus of interest was the work efficiency of persons with disabilities from the employer's perspective in a social enterprise. Thus, a Croatian social enterprise was chosen in which more than half of employees are persons with disabilities. The authors performed three in-depth interviews with the social entrepreneur, the procurator and an employee with a disability in order to gain a complete picture of the work of persons with disabilities in a particular social enterprise.

## Results

The analysis of the collected textual data showed that the social entrepreneur founded the enterprise due to the recognized disadvantaged position of persons with disabilities in the labour market. Both the social entrepreneur and the employee with a disability said that the employees with disabilities are very satisfied with their jobs. The interviewed employee worked in the company for two years as her first job. She said that she is more than satisfied with her job. Regarding the work environment, she said that the people she works with are wonderful and nice to work with. The procurator mentioned that the jobs in the company are highly sought, about 30 applications at one job position.

The social entrepreneur said that the company is completely satisfied with its employees and their working performance and has emphasized that the person who monitors the work of employees with disabilities has to have a high degree of sensibility for people with disabilities and that this is the case in their company. The employee confirmed that there is a good atmosphere in the company and that the co-workers are always ready to help one another.

As the advantages of employing persons with disabilities the social entrepreneur listed responsibility, motivation, discipline, efficiency, diligence, satisfaction with the working environment and reduced number of absenteeism due to the sick leave. The procurator said that employees with disabilities are hardworking and interested in the work. However, they needed to learn a lot at the beginning in order to be able to produce the products of a high quality. According to the procurator, employees know that everything that is earned will be reinvested in them and this fact motivates them. The company made profit each year and it was distributed to the workers for Christmas and Easter and was invested into production equipment to make the production process easier.

According to the social entrepreneur, absenteeism is very rare and long-term sick leave has never happened which was confirmed by the procurator. In the case of such event, the social entrepreneur said that another person with a disability would be employed. The procurator emphasized that for the company it is important that employees attend their medical examinations regularly and thus they can always arrange time off for the doctors' appointments.

Regarding whether employees participate in making business decisions and whether their opinions and suggestions are appreciated, the social entrepreneur answered that their opinions are appreciated as they should be in a social enterprise. The procurator confirmed that they have internal meetings two to three times a week where they communicate about everything as a kind of a family and they try to help one another both with business and private issues. The employee confirmed that she participates in the decision-making and that she can give suggestions that are usually accepted.

The procurator said that the wages in the company are average for the industry. The employee argued that her wage is appropriate for the job she performs and that her personal finances improved after the employment so she can financially contribute to her family. The procurator said that overtime working hours are rare, but they are needed when large orders are received. The employee confirmed that the working hours are eight hours a day, and rarely one hour or two hours longer. Overtime hours do not present a problem to the interviewed employee with a disability.

Regarding the impact of work on the physical and mental health, the employee said that there is no stress or other negative impacts. On the contrary, many impacts are positive. She likes to go to work and working makes her happy. The job position also helped her to be more included in the society. There is more networking due to the job itself and she also hangs out with her co-workers in her free time.

## Conclusion

Based on the performed interviews it can be concluded that social enterprises are an important part of the work integration for persons with disabilities. In the particular company, both the social entrepreneur and the employee with a disability are satisfied with the social and financial effects of doing business. The company has employed persons with disabilities who make more than half of the total number of employees and it has achieved financial sustainability.

The employee with a disability confirmed that since she got the job in this social enterprise her financial status improved, her social contacts grew in number and her overall well-being has also improved. The employees in the company have a sense of value and they work normal shifts for the appropriate wage. The sense of value is strengthened by the supportive management who pays attention to the employees' needs and tries to help them to solve their problems and also by the fact that the surplus of the revenues over the costs is distributed to the employees through the stimulations or is invested in the production equipment. Thus, the employees perceive the company as their own and are highly motivated to work and even overtime hours do not present a burden.

Both the social entrepreneur and the procurator emphasized that persons with disabilities are highly committed to their work, effective and reliable and that they use sick leave to a lesser extent than the rest. The employees can also arrange time off for the doctors' appointments whenever it is necessary.

In this particular case, the experience of employing persons with disabilities was positive both for the employer and the employees and the fact that the company is a social enterprise has helped to achieve that. The future research should encompass at least more than half of the social enterprises that employ persons with disabilities in Croatia in order to gain a deeper understanding of the problems that might occur. Also, future research should investigate the advantages and disadvantages of self-employment of persons with disabilities.

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## Social Media Assisted Group Project Management for Higher Education in India

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### Introduction

India is presently moving fast in the path of digitalization. One important field of digitalization is education. Using of social media in group works seems to be an effective solution for that. Group projects are an inevitable component for almost all graduate programs in India. They are aimed at making students getting a direct exposure to real world scenarios and make them capable enough to handle them. Impact of social media assisted group project management in India could positively impact critical thinking, independent learning and tutor technology facilitation. A model which uses social media assistance for group projects was designed to ensure that the objectives of group projects is achieved. The model is implemented by making a group of students from a renowned institution of India and asking them to do their group project as per the proposed model. The group was observed to perform better in their project work, presentation and viva as all members had a clear idea of all parts of project. In addition the effectiveness of the proposal was analysed using a survey conducted among 29 students from the same institution using a questionnaire designed to obtain the view of students on the effectiveness of using social media assistance in doing group projects.

### Related Work

The use of social media and modern technology for aiding the effectiveness of education was researched from years before. The researches have started with the aim of potential for using instant messaging services like Short Message Service (SMS) in improving the student learning by enabling critical thinking and independent learning.

In 2011, Hayati and Mashhadi studied on the effectiveness of using SMS services for teaching English Idioms to EFL students. They compared efficiency of SMS based instructions on English idioms in contrast with two other instruction modes, contextual learning and self-study simultaneously. This was one of earliest researches on Mobile Learning(m-learning). A deep understanding of the mobile devices used and the possibilities associated with them is needed in order to better design the mobile learning (m-learning) activities. In the same year Goh and Chen had a better quantitative and qualitative analysis on the impact of persuasive SMS on self-regulated learning of students using a set of Questionnaire for the same. They found out that the intervention had a positive impact on made students more interested on various ideas of the course. Timmis in 2012 studied the use of instant messaging conversations as sustainable supportive study structures among undergraduate peers, which clearly showed the positive impact in support and labour division between the peer groups. Rambe and Bere in 2013 propose the Framework for the Rational Analysis of Mobile Education (FRAME) model for a better use of M-learning using Mobile Instant Messaging.

Later with evolution of instant messaging, services like WhatsApp and WeChat started gaining more attention and acceptance and the number of users of these increased very rapidly due to its advantages as discussed by Church and Oliveira in 2013. In this scenario research started to focus on these newer services. In 2015, Najafi and Tridane conducted a study on using WhatsApp to improve instructor-student communication. The preliminary data analysis of this pilot study shows that students are already using WhatsApp to communicate among themselves in the college context, and they are willing to have a WhatsApp class account to improve communication in their classes. Later in 2015, Smit researched on using whatsapp to enable the students to answer questions while away from campus and to enable better student learning. This research also showed a positive output. In research by Simon in 2016 on using such services on supporting teaching and learning in higher education showed that due to wide use of instant messaging apps like WhatsApp ensure that instruction of info sent through them gather more attention than those given through SMS or paper notices. Also their research has thrown light on the vast positive impacts of using these services on learning even in higher education. In 2016 Keung Ng and group researched on use of WeChat in improving academic performance and which also had positive impacts. These researches had given inspiration for doing the research on Social Media Assisted Group Project Management For Higher Education in India.

In this paper the use of social media in group project done during higher education in India because group projects are inevitable part of higher education in India and in most cases students fail in achieving the main objectives of doing them like labor division, critical thinking and independent learning. Research done by Seufert and group in 2016 showed that WhatsApp makes group chats very effective, so using such social media for group projects can be

having positive outputs. For this purpose a model for research is designed based on the information from these researchers discussed here and the results of the implementation of the model is identified by randomly choosing set of 29 students from a renowned college in India and comparing the results of surveys conducted among on experience and results of groups of those who adopted the methodology and those who did not. Also way of using the model for tutor technology facilitation is discussed during the course of research.

### Model

In India group projects are inevitable part in the course of higher education. They enables students to have real life experience on certain topics and enables them to bring innovation to their studies. The main objectives of doing group projects are:

- **Division of Work:** The works should be divided equally among the members of group to ensure all receive the use of the project which is exposure to real life scenarios and give all students a chance to express their thoughts and ideas.
- **Critical Thinking & Independent Learning:** Critical thinking is not a generalized ability or skill. It is a process of making sense (internal cognitive process) of external experiences through analysis of issues and information. During projects students will have more doubts and thoughts which forces them to do independent learning were they learn facts and gain knowledge by their own.
- **Time Keeping:** The project should be completed on time without compromising on its qualitative and quantitative features.
- **Group Spirit:** Students should be made to work in group and made capable to care and help for the group. Also these projects let students to express their leadership qualities and strict monitoring can improve moral qualities of students too.

In most cases these objectives are not achieved during higher education in India due to unequal distribution of work or paid projects where professionals would be doing the work leaving students without having in hand experiences. In this Scenario use of Social Media like WhatsApp for creating group conversation for each of the project group is a good way of ensuring that the objectives of project are achieved. The task is accomplished by the instructor or project guide being one of the group member and giving strict guidelines to students on the activities in the group. In this case there is problem of collision with the use of Social Media in Campus by some educational institutions in India. This problem can be solved by making the institution provide its own chat platform similar to popular social media like WhatsApp as a mobile application to its students with features like Group Chat and instant notifications. Such a platform can even be used for close communication between students and teacher and enable tutor training facilitation as it can give the teacher more knowledge from student about their interest, views, and talent.

The proper implementation of the method requires a well-defined sequential set of steps to be taken which are listed as follows:

- Selecting groups of students
- Asking them for adopting the method
- Provide guidelines
- Analyzing results by comparing results of groups who followed and those who did not.
- Effectiveness Testing by doing comparative survey on experience of students who done with social media assistance and those who done without.

### Implementation

In the research, a group of students from a renowned institution of India were asked to do their project with help of Social Media and as per guidelines given to them. They have accepted the proposal and have done the project as per the guidelines given to them. The following guidelines were given for doing the project:

- A group conversation with all group members and project guide has to be created and maintained by the project guide.

- The whole project has to be divided equally among the members.
- Time for working together if needed has to be estimated and scheduled properly.
- All these should be posted in the group making all members aware of these and letting them view these anytime.
- All members have to send their daily progress into the group as text message and weekly update as audio or video as this makes the work clear and makes others understand better. This also avoids faking in any sort and loss of schedule.
- When having real meetings the progress during those should also be posted in the group. This avoids wastage of time and also lets the guide and those who could not attend them have clear understanding of what was done.
- Also the project guide and group leader were entitled to monitor the regular updates by all students and ensure that the project is not lagging at any point of time. Also the guide can clear doubts and give corrections in real time.
- While making project report, the group was asked to maintain a Google doc shared between all members so that each member can make their report for their part of the project while others are doing theirs.

The group completed their project on "Life Cycle Analysis of Building Integrated Photovoltaic" in time and was able to perform better than others as they could complete early and had time to do some extra research and each group member was aware of each part of the project. On comparing the performance and results the following was found:

- Group which used Social media had all members know well about all parts of the project while members of other groups were having clear idea about their own role only.
- Group which used Social media had all members perform equally well in viva and demonstration while leader of other groups were performing better.
- Group which used Social media had more contact and were close with the guide while members of other groups were not so.
- Guide of group which used Social media required less time to evaluate while guides of other groups required more time.
- Group which used Social media had all members possess great confidence about their project while members of other groups were not so.

For a better idea on the effectiveness of the proposal, a survey was done on all students on their opinion about the proposal and the results were obtained.

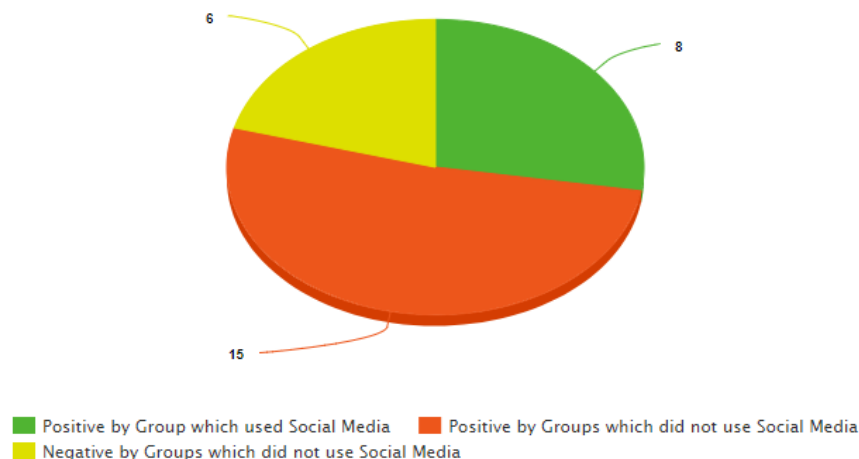
## Results

Though the group which adopted the proposal of using social media assistance in the course of the project was able to perform better than others, for a better idea on the effectiveness of the proposal, a survey was done using a questionnaire consisting of 10 yes or no questions on a set of 29 students including 8 members in the group which used the proposal. The questionnaire is as follows:

1. Do you think use of Social Media can be useful for improving your project activities done in a group by enabling members to interact more?
2. Do you think use of Social Media in group projects can ensure the equal division of works?
3. Do you think use of Social Media in group projects can help in completing the project on time?
4. Do you think use of Social Media in group projects can ensure that all members will have clear idea about all parts of the project?
5. Do you think use of Social Media in group projects can help in reducing the time required for completing the project?
6. Do you think use of Social Media in group projects can make the members more confident about the project?
7. Do you think use of Social Media in group projects can help the guide in monitoring the project activities?

8. Do you think use of Social Media in group projects can reduce the pressure on members while doing the project?
  9. Do you think use of Social Media in group projects will help in making all members aware of progress?
  10. Do you think use of Social Media can enable better teacher student interaction for overall academic activities?
- Getting a Yes for these questions are in favor of the given proposal and No is against.

The result of the survey is represented using a pie chart as follows:



The results shows that all members of the group which once used social media for their group project replied positively to the proposal and majority of members of other groups too has a positive view towards the proposal. This clearly shows that the proposal if implemented will be effective one with great user acceptance.

## Conclusion

Group Projects are an inevitable part of higher education in India which aims at achieving objectives like team spirit, leadership qualities, time bound working, critical thinking and independent learning. In most cases these are not achieved usually. Use of M-learning where use of mobile technology by using assistance of social media is an effective solution for this. There have been researches going on from past on use of M-Learning on education which have lately focused on instant messaging apps like WhatsApp. In the case of group projects, use of Social media like WhatsApp or institution provided platform with group chat interface is an effective solution. Here a group of students in a renowned institution of India was asked to do their project with assistance of social media and following certain guidelines. The group was able to finish the project on time and perform better than others. Still for analyzing the effectiveness of the proposal, a survey was done on 29 students which showed that all members of group which use the proposal and majority other students replied in favor of the proposal. Thus using assistance of social media in group projects with proper guidelines is effective and useful in higher education in India.

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## Legislation on Lead poisoning in India

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### Abstract

*Lead is the major toxic heavy metal globally considered as number one environmental poison and health hazard affecting millions of people in all age groups. Lead has maximum effect during growth and development of children as there is no placental and blood brain barrier. With its deleterious effects on all organs in the human body, lead poisoning is widely recognized as a major public health*

*problem all over the world. Children and women are found most vulnerable to lead poisoning especially in developing countries. Unlike other health hazards, lead poisoning is hundred per cent preventable in certain age group when appropriate legislation is in place. The main objective of this paper is to look at the existing legislations in India, which could help prevent further lead poisoning in India, and suggest new measures to check lead poisoning.*

### Introduction

Lead poisoning is one of the most common diseases of toxic environmental origin and accounts for about 0.6% of the global burden of disease. Lead is a naturally occurring heavy metal found in the earth's crust. It is soft, malleable, and melts at a relatively low temperature. It is easily moulded and can be combined with other metals to form alloys.

It is widely used in many products such as lead-acid batteries for motor vehicles, pigments, paints, solder, stained glass, lead crystal glassware, ammunition, ceramic glazes, jewellery, and toys and in some cosmetics and traditional medicines.

Mining, smelting, manufacturing and recycling activities, and the continued use of leaded paint, leaded gasoline, and leaded aviation fuel (in some countries) are important sources responsible for environmental contamination. Drinking water supplied through lead pipes or pipes joined with lead solder may contain lead. Widespread use of lead has resulted in to extensive environmental contamination and health problems in many parts of the world.

Lead is a cumulative toxicant (increasing in quantity in the body over many years) that affects multiple body systems (neurologic, hematologic, gastrointestinal, cardiovascular, and renal systems). Young children are more susceptible to toxic effects of lead and can suffer with permanent adverse effects on their health. Adults exposed to lead are at increased risk of developing high blood pressure and kidney damage. Exposure of pregnant women to high levels of lead can cause miscarriage, stillbirth, premature birth and low birth weight and malformations.

Once lead enters the body, it is distributed to organs such as the brain, kidneys, liver and bones. The body stores lead in the teeth and bones where it accumulates over time. Lead stored in bone may be remobilized into the blood during pregnancy, thus exposing the fetus. Undernourished children are more susceptible to lead because their bodies absorb more lead if other nutrients, such as calcium, are lacking. Children at highest risk are the very young (including the developing fetus) and the impoverished. In particular lead can affect children's brain development resulting in reduced intelligence quotient (IQ), behavioural changes such as reduced attention span and increased antisocial behaviour, and reduced educational attainment.

Lead has no essential role in the human body. No safe level of lead exposure has so far been established. Even blood lead concentrations as low as 5 µg/dl may result in decreased intelligence in children, behavioural difficulties and learning problems; therefore prevention from exposure is important.

### Sources and routes of exposure

People can become exposed to lead through occupational and environmental sources. This mainly results from:

- inhalation of lead particles generated by burning materials containing lead, for example, during smelting, recycling, stripping leaded paint, and using leaded gasoline or leaded aviation fuel; and
- Ingestion of lead-contaminated dust, water (from leaded pipes), and food (from lead-glazed or lead-soldered containers).

The use of some traditional cosmetics and medicines can also result in lead exposure.

Encouragingly, the successful phasing out of leaded gasoline in most countries, together with other lead control measures, has resulted in a significant decline in population-level blood lead concentrations. There are now only few countries that continue to use leaded fuel <sup>1</sup>.

### Burden of disease from lead exposure

The Institute for Health Metrics and Evaluation (IHME) has estimated that, based on 2015 data, lead exposure accounted for 494 550 deaths and loss of 9.3 million disability-adjusted life years (DALYs) due to long-term effects on health. The highest burden is in low- and middle-income countries. IHME also estimated that lead exposure accounted for 12.4% of the global burden of idiopathic developmental intellectual disability, 2.5% of the global burden of ischaemic heart disease and 2.4% of the global burden of stroke <sup>2</sup>.

### Materials and methods

A review of literature was conducted to explore the available legislations regarding lead poisoning in India.

### Results

WHO has identified lead as 1 of 10 chemicals of major public health concern, needing action by Member States to protect the health of workers, children and women of reproductive age.

WHO has made available through its website a range of information on lead, including information for policy makers, technical guidance and advocacy materials.

WHO is currently developing guidelines on the prevention and management of lead poisoning, which will provide policy-makers, public health authorities and health professionals with evidence-based guidance on the measures that they can take to protect the health of children and adults from lead exposure.

### Lead in paint

Since leaded paint is a continuing source of exposure in many countries, WHO has joined with United Nations Environment Programme to form the Global Alliance to Eliminate Lead Paint. This is a cooperative initiative to focus and catalyse efforts to achieve international goals to prevent children's exposure to lead from leaded paints and to minimize occupational exposures to such paint. Its broad objective is to promote a phase-out of the manufacture and sale of paints containing lead and eventually eliminate the risks that such paints pose<sup>3</sup>

The Ministry of Environment, Forest and Climate Change (MOEFCC), Government of India has passed a notification in November 2016 as "**Regulation on Lead contents in Household and Decorative Paints Rules, 2016**" and has prohibited manufacture, trade, import as well as export of household and decorative paints containing lead or lead compounds in excess of 90 parts per million (ppm). This rule was made in exercise of the powers conferred by section 3 and section 6 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 13 of the Environment (Protection) Rules, 1986. Efforts should be made to create public awareness about precautionary measures to be taken to prevent lead poisoning.

All kinds of paints, paint pigments and solvents should be brought under the rule to prevent lead poisoning that affects 6,00,000 people every year as per WHO records. Mandatory 90 ppm lead content rule should be fixed for all imported paints, pigments and finished products as well," said Dr Thuppil Venkatesh, also known as the Lead Man of India, referring to the Regulations on Lead Contents in Households and Decorative Paints Rules, 2016. The internationally accepted limit for all kinds of paints is lead content 90 ppm.

Dr Venkatesh was also involved with Karnataka State Pollution Control Board to bring out the mandatory requirement for unpainted Ganesha and its immersion policies which was adopted by west Bengal for Drugs

Lead used in paints for its glossy effect can now be achieved using titanium, which makes the cost of paints more expensive by 5 to 10 per cent. According to experts, this is an alternative that most developed countries have adopted. Protection of metals from corrosion that lead performs in industrial paints can also now be achieved using titanium-based paints.

### Lead in petrol

Tetraethyllead (commonly styled tetraethyl lead), abbreviated TEL, is an organolead compound with the formula  $(\text{CH}_3\text{CH}_2)_4\text{Pb}$ .

TEL is a petro-fuel additive; first being mixed with gasoline (petrol) beginning in the 1920s as a patented octane rating booster that allowed engine compression to be raised substantially. This in turn caused increased vehicle performance (fuel economy).<sup>4,5</sup> TEL had been identified chemically in the mid-19th Century, but its antiknock effectiveness was discovered in 1921 by the General Motors research laboratory, which had spent several years attempting to find an additive that was both highly effective and inexpensive. Among those GM also considered was ethanol, which was known to be widely available and inexpensive, but TEL was promoted because it was uniquely profitable to the patent holders and because the oil industry was generally hostile to ethanol.<sup>6</sup>

TEL was extensively used as a gasoline additive beginning in the 1920s,<sup>7</sup> wherein it served as an effective antiknock agent and prevented exhaust valve and valve seat wear. Concerns were raised in reputable journals almost immediately of likely health outcomes of fine particles of lead in the atmosphere.<sup>8</sup>

In most industrialized countries, a phase out of TEL from road vehicle fuels was completed by the early 2000s because of concerns over air and soil lead levels and the accumulative neurotoxicity of lead.

In India, the legal foundation for enforcing automotive fuel standards is based on several laws:

- The Essential Commodities Act, 1955 gives state governments the right to ensure that all essential commodities, including petroleum products, are easily available to the public and meet government standards. It also calls for fines, imprisonment up to one year, and forfeiture of the right to do business for those who violate the act.
- The Air (Prevention and Control of Pollution) Act, 1981 gives State Pollution Control Boards (SPCBs) the right to prohibit the production or burning of any fuel that is determined to lead to air pollution.<sup>9</sup>
- The Environment (Protection) Act, 1986 does not specifically mention fuels, but does authorize the central and the state governments to regulate activities that can harm the environment, under which the burning of fossil fuels could be included.<sup>10</sup>
- The Petroleum and Natural Gas Rules (PNGR), 2002 list specific guidelines to be followed for the importation and/or refinement of fuel in India, and the transport of fuel within the country.
- The Petroleum and Natural Gas Regulatory Board Act, 2006 created the Petroleum and Natural Gas Regulatory Board (PNGRB), under MoPNG, and is responsible for ensuring fuel quality standards, from import or production through retail sales. PNGRB is charged with ensuring that the PNGR are followed. The PNGRB is also authorized to resolve all disputes that may arise among producers, transporters, retailers, and consumers over fuel related issues and has legal authority to enforce fuel quality standards at retail outlets<sup>11</sup>
- The Workmen's Compensation Act, 1923 provides for payment of compensation to workmen and their dependants in case of injury and accident (including certain occupational disease) arising out of and in the course of employment and resulting in disablement or death. The Act applies to railway servants and persons employed in any such capacity as is specified in Schedule II of the Act. The schedule II includes persons employed in factories, mines, plantations, mechanically propelled vehicles, construction works and certain other hazardous occupations<sup>12</sup>

Unleaded petrol was made mandatory in India in March 2000.

### Lead in Ayurvedic medicines

On December 15, 2004 Dr Saper and colleagues published an article in the *Journal of the American Medical Association* stating that they found out that 20% of the Ayurvedic medicines purchased in Boston contained high concentrations of lead or arsenic or mercury. The article elicited strong reactions. Shortly, the Government of India of India notified that the labels of the medicines must disclose their metallic content.<sup>13</sup>

Saper's finding was nothing new. Dr.K.S.V.Nambi and his colleagues from the Bhabha Atomic Research Centre listed the lead content ranging from 0.4 to 2,61,200 microgramme/gm in 14 Ayurvedic drugs in the *Journal Energy Environment Monitor*.<sup>14</sup>

Dr Venkatesh, was involved in starting a certificate and accreditation program for Shush medicines to mandatorily introduce lead and other toxic heavy metal content and to provide composition from all branded manufacturers. This was done through Quality Control India in 2010.

The National Referral Centre for Lead Poisoning Prevention in India (NRCLPI) established by The George Foundation with St.John's National Institute of Health Sciences, Bangalore has now become the nodal referral centre in India. Several sub centres are being setup in Andhra pradesh, Kerala and other states. NRCLPI conducts blood lead tests, awareness creation efforts and communication with lead-based industries to reduce lead contamination.

### Lead in Battery

Lead and lead dioxide, the active materials on the battery's plates, react with sulfuric acid in the electrolyte to form lead sulfate. The lead sulfate first forms in a finely divided, amorphous state, and easily reverts to lead, lead dioxide and sulfuric acid when the battery recharges.

Adults are mainly exposed to lead at their workplaces through inhalation of lead laden particles, poor personal hygiene, water and food also contribute to the exposure.

The exposed workers could be compensated under the The Workmen's Compensation Act, 1923 and protected under Environment Protection Act, 1986.

### Discussion and Conclusion

In the US, the following laws are in force to prevent lead poisoning.

Lead is a pollutant regulated by many laws administered by U.S. Environmental Protection Agency, including the

- Toxic Substances Control Act (TSCA)
- Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Safe Drinking Water Act (SDWA)
- Resource Conservation and Recovery Act (RCRA),
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Occupational Safety and Health Administration ensure that workers have a right to a safe workplace. The law requires employers to provide their employees with safe and healthful workplaces. The OSHA law also prohibits employers from retaliating against employees for exercising their rights under the law (including the right to raise a health and safety concern or report an injury).

The US Occupational Safety and Health Administration (OSHA) lead standards require workers to be removed from lead exposure when their blood lead level is equal or above 60 µg/dL (general industry). Workers may return to work only when the BLL is below 40 µg/dL.<sup>15</sup>

India doesn't have an overarching law on occupational safety and health covering all sectors of the economy that would make it mandatory for all employers to observe occupational safety standards. Though India has legislations in place for pollution, there are not many specific laws framed for lead toxicity as in other western countries.

More emphasis could be given to adopting preventive measures to control lead poisoning. A study conducted by Kuruvilla et.al (2008)<sup>16</sup> has highlighted the use of activated carbon fabric masks to be used among battery workers

to prevent lead absorption. This mask could be used by all occupationally exposed groups after conducting further study and it is mandatory for the legislation in India to have specific laws to curb lead poisoning.

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## Processes of Cultural Changes of The Etnia *Tsa'Chila* and Contributions of The Ethnotourism to the Cultural Preservation of the Chigüilpe Community, Santo Domingo De Los Tsa'Chilas, Ecuador

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### Abstract

*The research focused on historical and current documentation of the cultural manifestations of the Tsáchila ethnic group of Ecuador. For the historical documentation, the works carried out by [1], [2], [3] and [4] compiling information from 1534 to 1992 were reviewed. Current documentation was established semi-structured interviews, it should be noted that Tsáchilas informants from the Chigüilpe community were selected through an intentional sample that allows to identify the typology of the informants. Using historical and current information the set of symbolic elements was determined: language, economy, social organization, housing, clothing, worldview and festivals, information, that was related to each other, to determine 8 factors immersed in the political, social and economic environment, that have caused changes in the symbolic elements.*

**Keywords:** Culture / Tsa'chilas / ethnotourism / cultural events / symbolic elements

### Introduction

The *Tsa'chilas* are one of the fourteen indigenous nationals of Ecuador. According to data from the 2010 population census, 2956 people identified themselves as members of this nationality throughout the country, currently they are organized unevenly in seven communes; Chigüilpe, Congóma, Buá, Naranjos, Poste, Peripa and Otongo Mapalí, geographically divided in the rural area of Santo Domingo de los Tsa'chilas province in northwestern Ecuador [5].

The *Tsa'chilas* represent one of the oldest peoples of America (pre-Inca) characterized by being a peaceful people, heirs of the ancient Yumbos<sup>1</sup>[1]. The configuration of the ethnic territory is the product of the gradual colonization promoted by the State, which began in the last quarter of the nineteenth century and intensified in the second half of the twentieth century with the opening of the first carriageway Quito-Santo Domingo in 1953 [6].

Many years ago the *tsa'chila* were still identified through their lifestyle, customs, clothing, housing, rituals and worldview. However, over time the cultures undergo different modifications, adapting to the new realities [7], having to subject themselves to political, social and economic powers, the reduction of their territories due to the invasion by settlers and among other influential factors.

Concerned about rescuing their cultural traditions, the Chigüilpe community has adopted ethnotourism as a strategy to revalue its culture and diversify its economy. However, relations with tourists and their closest mestizo, white, indigenous and black neighbors may cause the commercialization of their cultural heritage, putting at risk not only the authenticity of said heritage, but the extinction or deterioration of those who created it [8].

In this context, this article aims to compile historical information on cultural expressions of the *Tsa'chila* ethnic group, contrast with current cultural expressions of the Chigüilpe Community, and determine the factors that have influenced the sociocultural changes of this community, as well as highlighting the adoption of ethnotourism as a strategy to preserve its culture.

### Methodology

The methodology used proposes a qualitative approach and the use of ethnographic tools for the collection of field information on cultural expressions, as well as the review of historical documents. The identification of actors is based on the population of the Chigüilpe community according to data from the 2010 population census. The tools for the field study were flexible instruments such as semi-structured interviews, focus groups and participatory observation, it should be noted that the informants were selected by means of an intentional sample that allows to identify the typology of the informants.

## Results

For the period of the conquest of the Americas, in fact in 1592 the religious order Company of Jesus or Jesuits knew the *Tsa'chilas* in the missions that they carried out, and when they saw that the face and body were painted with achiote (*Bixa orellana*) and Huito began calling them *Colorados* [1], a pejorative term that persists to this day.

However, the use of achiote is not a unique cultural trait, since lifestyle, customs, clothing, housing, rituals and worldview have constituted the *tsa'chila* identity. A tracking of historical sources and the perception of the members of the nationality have allowed interpreting the cultural changes to which they have submitted. For this, it was necessary to follow a common thread that takes us from the historical data to the contemporary *tsa'chilas*, and identifies the factors that have influenced their process of acculturation.

According to the perception of the informants of the Chigüilpe community, eight factors have been determined that have had an integral impact on the acculturation process.

- The colonization
- The influence of the development of cities
- The new economic activities
- The new policies of the National State
- The deterioration of the environment
- Insecurity
- The mestizo education
- The intervention of the Catholic religion

Next, the description of the symbolic elements of the *Tsa'chila* nationality is synthesized, emphasizing the adoption of new customs to their cultural expressions.

## Language

The mother tongue is Tsafiki and the word *Tsa'chila* means "real people" [9]. Historical data show that the attitude of the leaders kept the group illiterate [4].

However, the colonization and the relations with other white-mestizo ethnic groups had their immediate consequences in the linguistic composition of the ethnic group. It is evident that the acculturation experienced by the *tsa'chilas* is accompanied by the loss of their mother tongue, they currently have a high level of bilingualism, as they have adopted Spanish as a second language. The Ministry of Public Education has inserted itself with its mestizo pedagogical instances, nevertheless, it is necessary to point out that there is a linguistic persistence in the formation within the homes.

## Economy

The subsistence economy was based on fishing, gathering fruits and hunting, coexisting in perfect harmony with nature. According to the versions of the inhabitants, the new economic activities, the pollution of the rivers and the cutting of forests to expand areas of cultivation of cocoa, cassava, corn and plantain, made agriculture and the commercialization of the products its main economic activity, that significantly displaced subsistence activities. With the use of darts and spears, the shotgun was incorporated as a modern tool.

This also transformed the mystical relationship of man and the gods found in nature, the shamans were connected to the other worlds, thanks to *Nepi*, a drink based on ayahuasca (*Banisteriopsis caapi*), to direct activities such as birth, marriage based on agreements established between the parents of the parties of 6 or 8 years of age, in a ceremony of death to send the spirit to *Pipua* the sun god. Currently, these activities mimic normal mestizo activities.

## Social organization

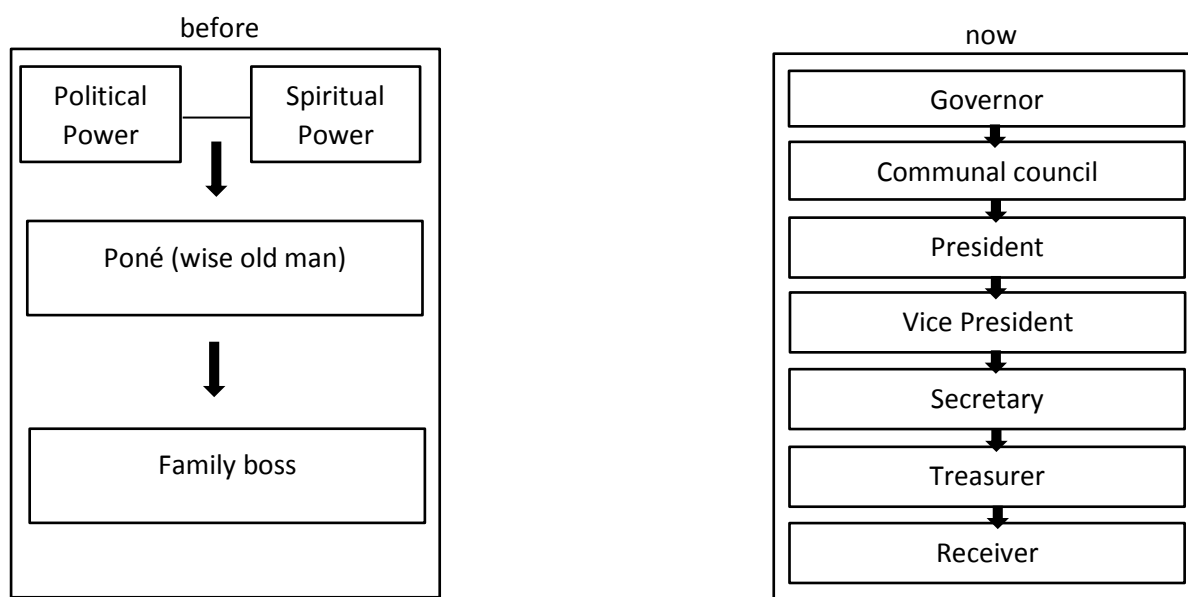
According to the research of [10] in 1924 the family organization was not very strict, each family is completely independent of other families and there is no common boss. Already by 1939 there is talk of family units linked through marriage, the elder governs the domestic unit, the tribe lacks leadership, but the law is established, distributed among the shamans of the various districts (Von Hagen, 1939). The *Tsa'chilas* recognized as boss a *Poné*, a prestigious shaman in the tribe, as they associated political power with spiritual power.

Formerly, "the choice of the couple was made by the parents of the groom at an early age, when the commitment was formalized the young man had to give presents to the parents of the bride. The couple lived in the house of the parents of the groom until the birth of the first child, during this time the man had to work his farm to support his family" story of Henry Calazacón member of the commune Chiguilpe.

Towards 1957 the Ministry of Agriculture and Livestock authorized the conformation of a maximum political-administrative organ of the nationality, that sewed in a *tsa'chila* Governor, backed by a lieutenant of each one of the seven communes. Joaquín Zaracay became the first Governor of the *Tsa'chilas* [4]. This process of social organization was a strategy of defense of the ancestral territory and radically modified its original pattern of dispersed settlement to the conformation of communes.

Currently the organization of *tsa'chila* nationality is constituted hierarchically by the General Assembly, the Governing Council and the Communal Councils (Table 1).

Table 1 Comparison of the hierarchical organization of *Tsáchila* nationality



## Dwelling

The house was built collectively, with materials from the area such as the wood of the pambil (*Iriantea deltoidea*) for the pillars, the same ones that serve as the base for the house, the uncovered walls of guadua (*Guadua angustifolia*), bijao leaves are placed on the roof (*Calathea lutea* A.). Interwoven to be waterproof, housing was always rectangular maintaining the ratio between its length and width, its dimensions being variable depending on the case [2]. The house was divided into two sections, one for the social part and family reunions, the other that included the *Nifu* or kitchen area and the *Tamo* or the bedroom área.

At present the typical *tsa'chilas* houses can only be seen in the tourist centers of the Chiguilpe community and are intended as community hostels. The insecurity and the influence of the development of the cities brought with it concepts of modernization, urbanization and *tsa'chila* architecture has been modified, using materials such as brick, block, cement and zinc for the roof. In addition, this type of construction has been promoted by the Ministry of Urban Development and Housing of the Government through the Housing Bond.

## Typical dress

The man's dress consisted of a small rectangular piece of cotton with blue and white horizontal stripes known in tsafiki as *umbatsompa*, which was wrapped like a loincloth that went down to the knees. They wore a red cotton belt called *cendore* that held the *umbatsompa* [11]. They used to cut their hair at the nape of the neck, leaving a "helmet" of hair coated with achiote, giving it the shape of a red visor.

In the case of the women, they wore on their shoulders a colorful handkerchief with flowers, the chest was kept uncovered, they only knotted a shawl around called *Panu*. The lower part of the body is covered by the *Tunan*, identical to the *umbathersompa* of the men, but more long and of various colors. Its main adornments were the *bitade*, that is a kind of handle, the *bipoe* or necklace, which is the most complicated adornment that distinguishes *tsa'chila* women, the *sopé*, the one who longer uses it, a kind of nose piece that could be made of silver or wood, the rod of 2 cm [1].

The *tsa'chilas* denote that the influence of the development of cities, mestizo education has led to the disuse of certain traditional pieces of clothing. Men currently wear trousers, shirts and rubber boots, the painting of achiote that is applied in the Hair is kept only for government meetings. Of the traditional attire of the women only the *Tunán* skirt is maintained, the rest of their attire in nothing distinguishes them from the mestizo women, they wear bra, blouse, nylon stockings, jeans, high or low-heeled shoes and their hair arranged in different ways, plus accessories such as backstage earrings to complete personal arrangement. The only time in which they ensure that both men, women and children are dressed in traditional clothes is in the *Kasama* and for presentations in tourist activities.

## Worldview

One of the most important characteristics of the culture is the *Poné* or shaman for its high spiritual knowledge and use of medicinal plants [12]. *Poné* need a long learning process to be able to exercise, a process that includes limitations in the current development of social, sexual and food life. They learn and heal through the *ayahuasca* (*Banisteriopsis caapi*), the hallucinogenic plant that allows them to travel through their cosmology [12].

The *Poné* was the intermediary between group and spirits, it was he who favored a good hunting and fishing, the birth of a child, marriage, death and sending a spirit to *pipua*<sup>2</sup>. The intervention of the catholic religion, who had the mission in charge to evangelize the Indians, incorporated new gods to their beliefs, now they have the notion of a supreme creator of the world whom they call *Diochi*, in Spanish *Dios* [1].

The accelerated contact with the national society and the relations of exchange with the mestizo and Andean curandería have promoted that nowadays these men are no longer recognized as *Poné*, but they are called *vegetalistas*, because they have knowledge of the properties and curative uses of many plants to treat various diseases and ailments.

The use of achiote (*Bixa orellana*) as a vegetable dye used in facial and body painting is a cultural feature that characterizes *tsa'chilas*. Its use was in years before the conquest and the first decades of Spanish colonization. The first Spaniards, who visited the region, found that its inhabitants were dyed red, to which the exonym "colorados" is attributed.

The oral history of contemporary *Tsa'chilas* is more explicit when associating the use of achiote with the protection of epidemics, especially smallpox.

*Henry Calazacón tells that 450 years ago the epidemic of smallpox spread in the tribe. I put them made infusions with herbs, but the fever did not disappear, so they decided to consult the spirits of nature, who guided them to the achiote trees, their ancestors were placed throughout the body and thus they were cured.*

The use of achiote during epidemic outbreaks is justified, because of its therapeutic properties, basically of a scarring, antiviral and anti-inflammatory type [13]. Specifically, it has been shown that the aqueous ethanolic extract of the *Bixa orellana* fruit exerts an antiviral activity on the smallpox virus and is an effective cicatrizant [14].

The first epidemic of smallpox took place between 1524 and 1528 and the last in 1585 [15], according to tradition the last epidemic would have caused a gradual demographic reduction of the *Colorados*. Since then, as a symbol of life, the head is painted with achiote and the face with lines and black dots in homage to the more than 6000 aborigines who died from the epidemic.

### Typical celebrations

The most representative festival is the *Kasama*, a tsafiki word. "*Kasa*" means new and "*ma*" means day, that is the beginning of a new day, dawn or the beginning of a new year, a traditional festival of great importance in the *tsa'chila* and that coincides with the Sabbath of Glory for the Catholic religion. Formerly the celebration was characterized by music in marimba, ceremony of the sacred drink ayahuasca or *nepi* to connect the two worlds, the spiritual and the earthly. Traditions that have been disappearing with time, Agustín Calzacón comments that for the 40s when the *tsa'chila* land colonization process began, the celebration stopped being celebrated. Abraham Calzacón (1909-1981), a *poné*, rescued the traditional *Kasama* festival with the incorporation of other cultural nuances such as the Quito Band of Music. Nowadays this festival is a means to rescue the customs and traditions of the ethnic group, convenes and visitors for the demonstration of dance, handicrafts, chants in the tsáfique language and the election of *Moina Sona* (Queen of Nationality). The typical lunch is grilled fish served in bijao leaf with a green bullet without salt, roasted mayonnaise and they offer it with *malá*<sup>3</sup>.

### Tourism tsa'chila

For a nationality that has historically been the victim of a process of reduction and territorial affectation as well as socio-cultural discrimination, tourism emerges as a strategy to strengthen and preserve the socio-cultural values of the *Tsa'chilas* ethnic group. In the Chigüilpe community, more than a decade ago, the *Tsa'chila* Ethnographic Museum project and the Tolón Pele Cultural Center, a project formed and managed by 61 *Tsa'chilas* families, were created. Henry Calzacón mentions that about USD 30,000 was invested in resources to build the tourist center and train young people of the commune who are the tour guides of the place.

The tourism complex is made up of 12 cabins where tourists are exposed to trades and ancestral traditions, as well as a wide range of services and activities that include a shamanism ceremony, excursions to know the sacred plants, dance demonstration, crafts, typical food and lodging. The costs to enter the tourist complex are USD 5 or tourist packages of USD 50, the tourist can enjoy an experiential tourism in the *Tsa'chila* territory.

This ethnotourism initiative proposes a dynamic of tourism planning and management from the indigenous worldview, where most of the members of the community participate actively in the tourism business, and according to their abilities and talents are responsible for guiding, preparing food, making handicrafts, presenting music and dance, logistics, reservations and accounting activities.

The needs of the current tourism market include more awareness of the environmental damage that is being built, hence many tourists are excited to embrace the *tsa'chila* mythological tree, or give importance to *nepi* or ayahuasca, because they are experiences that go beyond Western logic. The resources generated by tourist spending are divided both for the individual benefit, as well as for the reinvestment in the maintenance and improvement of the tourism project, in addition to the allocation of community benefit funds.

### Conclusions

At present, Ecuador through a constitutional principle evidences the recognition of the diverse cultures and identities that coexist in the national territory, and promotes respect and cultural non-discrimination.

Historical data and accounts of contemporary *tsa'chilas* evidence that the *Tsa'chilas* have been characterized by their character and willingness to self-defense of the territory and its identity, despite the processes of colonization, the influence of the growing Western world, the economic transformations in course, Catholicism, the deterioration of the environment, insecurity and the emergence of a new political and social structure, which has inevitably changed their way of life. However, this nationality has demonstrated over the centuries a capacity to adapt to new challenges, in this struggle to preserve their culture they have been inserted into tourism activities, achieving visibility and strengthening their cultural identity.

The tourism management model proposed by the *Tsa'chila* Ethnographic Museum and the Tolón Pele Cultural Center show the active role and protagonist of all the members of the community, a tourism initiative that did not arise precisely from the economic, but from the cultural and social need, and that goes beyond an encounter and cultural recognition, because it promotes an educational process of true *Tsa'chila* identity.

Finally, this article provides inputs to reflect on proposals for tourism as an alternative for the development of ethnic groups and indigenous communities, that seek to "rescue" their culture. Rethinking from a critical intercultural vision allows tourism managers not to commercialize their cultural heritage, and have the ability

to innovate and generate sustainable tourism projects for the welfare of tourism and community development.

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## Social Responsibility and Management Development: An Analysis of Socially Responsible Companies

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### Abstract

*This paper addresses the relationship between corporate social responsibility (CSR) and corporate citizenship (CC) and a firm's management development program. In this context, family firms are known for being very committed to society. For this reason, differences between family influenced (FF) and non-influenced family firms (NFF) are investigated with respect to their social commitment and methods and contents of their management development programs. The theoretical part uses socio-emotional wealth (SEW) and the Upper-Echelon theory to reveal some differences between the two types of firms. A qualitative study-design which surveys two FF and two NFF in problem-centered expert interviews is used to compare differences between them. In addition, the survey of top management and human-resource (HR) managers is designed to derive new propositions in this field. The study found no differences between the firms according to their understanding of responsibility for society. However, family firms are implementing far more local initiatives in their globally distributed locations. As a result, family firms are more engaged in CSR and CC. The reputation benefits of social responsibility is less important for FF. In the area of management development (MMD) the results show that all surveyed companies use different leadership development methods but FF derived content of MMD partially from their values and mission statements. Moreover, the study concludes that the top management of FF influences methods and content of the MMD program. Another finding was that management training influences the behavior and attitudes of corporate decision makers. The study provides a baseline in this field of study and supports a better understanding of the postulated relations.*

**Keywords:** corporate social responsibility, corporate citizenship, family firms, management development, training

**Main Conference Topics:** Education and Challenges of Teaching Professionals; Sustainability, Environment and Risk Management; IT Challenges and Solutions; Economy, Entrepreneurship and Tourism

### Introduction

Commercial enterprises are an important part of society. Up to now, quite a lot of economists assume that businesses merely exert their social responsibility by paying taxes and employing employees. Already in the 1950s the "social ecologist" and "business thinker" Peter Drucker challenged this point of view. He demanded a substantially higher involvement of business organizations in the social discourse of society and a higher commitment in social responsibility through commercial enterprises (Drucker, 1985).

The discussion about the social responsibility of companies has increased in recent years. As an example, most of the firms which are listed in the stock exchange publish information about their social actions under collective terms "**Corporate Social Responsibility**" and "**Corporate Citizenship**". In the case of **Corporate Social Responsibility** the European Commission defines CSR as "the responsibility of enterprises for their impact on society" (Europäische Kommission, 2011, p. 7). The second term **Corporate Citizenship** covers the voluntarily commitment of companies in society. The core issue of CC is the role of a company in shaping social and political concerns. In reality, it's not easy to separate both concepts (Braun & Backhaus-Maul, 2010). Hence the term "social responsibility of companies" is used to cover all measures which involve both CSR and CC activities in this study.

Contemporary society is faced with a variety of huge challenges. Besides actual refugee issues, there are long-term social developments and megatrends like demographic change, digitalization, climate change and globalization which are influencing the danger of social inequality. For overcoming these challenges, commercial enterprises are increasingly considered as social actors which possess a shared responsibility for a well-functioning society as well as a participating role in changing public facilities (Bertelsmann Stiftung, 2016).

With the increasing importance of social responsibility of companies, one may ask the justified question whether the in-house education and training has changed and whether new contents and methods found their way into management development. Family owned firms have a particular role in this study. Generally, they are assumed to be very engaged for the welfare of society. Thus they will be at the center of the current study (Keese,

Tänzler & Hauer, 2010). Finally, the study will look to see if there are differences between family and non-family firms and if these results could be used for management development improvements.

### Related Work

There is an ongoing controversial discussion in the scientific sector, especially in economic sciences about the social responsibility of companies. The economist and Nobel Prize winner Milton Friedman (1912 – 2006) strongly believe that making profits is the only responsibility of a firm. In his work “Capitalism and Freedom” he made the much discussed statement: “there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits” (Friedman, 1962, p. 133). Related to the quote of Friedman, the profit maximization of every business can be understood as moral obligation. However, the model of Friedman can be seen as an ideal-type construct which displays reality very imperfectly. Lack of market transparency and bounded reality of market players are solely two potential defects of his model. Further there aren't complete contracts and legal conditions in today's globalized world (Homann, 2004).

### Peter Drucker and Social Responsibility

The structure of social institutions has changed significantly in recent decades. Especially the importance of companies as actors in the economic sector has increased as a result of globalization. The “social ecologist”, as Peter Drucker<sup>1</sup> (1909 - 2005) described himself, therefore dealt with this topic over thirty years ago and recognized the social importance of the company management as leadership elite. This role is given to management primarily because it determines the use of the resources of a society (Drucker, 1985).

Drucker recognized the fundamental task of a business enterprise as the economic performance of the organization (Drucker, 2009). This statement coincides with Friedman's position. In contrast to Friedman's claims, the social aspects of an organization also play an important role for Peter Drucker. Therefore, companies must be seen as part of a society whose social impact inevitably exceeds the specific economic contribution they make (Braun & Backhaus-Maul, 2010; Quazi, 2003; Göbel, 1992). According to Drucker, the challenge of a pluralistic society is that each institution has to fulfill its own specific goals like the provision of economic goods and services while maintaining the responsibility for the quality of life and the human and social environment of modern mankind (Drucker, 2009, pp. 76-77). The author further argues that with the increasing size of today's governments, they are losing significant efficiency in the performance of social tasks. This also makes companies carriers of social values and goals. One consequence for business enterprises of this is that they find themselves in the role of (political) designers of a society.

The role of the manager in a company is also different from the classical business definitions. According to Peter Drucker, the ethics of the manager is very pragmatic. It is based on the more than 2400 year old model of the Hippocratic Oath: *Primum non nocere* – first, do no harm (Hippocrates, Transl. 2005). This ethics of responsibility are especially important for managers who are part of the social elite of a society (Drucker, 2009).

### Family Firms and Social Responsibility

In public opinion, family businesses are considered to be highly socially committed in comparison to non-family businesses. Furthermore, companies with higher family influence perceive their social commitment rather as part of their overall business orientation than just a corporate obligation (Keese et al., 2010).

The term “family business” is defined differently depending on the purpose. As a consequence, Astrachan, Klein and Smyrnios have developed a scale that measures the degree of family influence with the dimension *power, experience* and *culture* (2002). Thus, organizations can be divided into companies with little or no family influence up to companies with a very high family influence. This is done by the so-called F-PEC value (Astrachan et al., 2002).

Several recent studies create the impression that companies with a high family influence are particularly concerned with the well-being of society. For example, in a 2010 study, the authors Keese et al. examined the question whether there are significant differences between family businesses and non-family businesses with regard to their social commitment. The study results showed that companies perceive training as an investment in the future which

results in lower contract costs and turnover rates as well as a potential improvement in their reputation. The results of the study truly show that there are differences between company types (2010).

A number of theoretical considerations can be used as an explanation for the social responsibility of family businesses. A well-known research area in the field of social responsibility of family businesses is postulated by the authors Dyer and Whetten. They use the categories *Corporate Identity, Image & Reputation* and *Identification* with the Organization of Enterprises as explanation of the differences between the two types (2006). The argument of the two authors follows the approach that companies act socially responsible because they fear a loss of reputation. According to Whetten and Mackey, the *identity* of a company is closely connected to its reputation and image (2002). The corporate identity answers the question “who are we as an organization?” and consists of the two sub-concepts *reputation and image* (Dyer & Whetten, 2006; Whetten & Mackey, 2002). The influence of a positive perception of the company as socially responsible (in the eye of the public) towards the financial success of the enterprise is mainly explained in the literature by these two constructs (Whetten & Mackey, 2002). The company founder has a significant impact on corporate identity, not only in terms of image and reputation. Family entrepreneurs see their own company more as an extension of themselves (Schein, 1986). In an effort to leave something to posterity they are concerned about their social impact. Reputation and image losses which are resulting from the failure of social due diligence, like environmental disasters resulting from the company's products and services, will fall back on the family name and the personality of the founder (Post, 1993). In contrast, other studies showed that family businesses perceive their efforts as a means of realizing good deeds in society. Here, the belief in a higher purpose was the key driver of social commitment (Dyer & Whetten, 2006).

Furthermore, the *identification* of the members with the organization plays a role in family businesses. The theory originated from social identity theory which was formulated by Tajfel and Turner (1986). In an organizational context, the members are closely connected with their respective company. Since a bad image of the company or a negative reputation *ceteris paribus* falls back on the individual, the members will change the organization. However, family owners cannot simply change the company, as they constitute the company themselves or are very strongly associated with it. Therefore, they will be interested in maintaining a positive image in society and keeping the family together. In contrast to the high identification of the founders and their following family owners and managers, studies show that identification with the company is less likely in non-family businesses. This weaker connection between the manager as a person and the company can result in a lower commitment for society, because the manager does not need to defend himself against a negative reputation (Dyer & Whetten, 2006).

In the last years, another approach has received more and more attention in research. The concept of “socio-emotional wealth” (SEW) is cited by a lot of authors as the main differentiation reason between family businesses and non-family businesses. This approach which is characterized among other things by Luis Gómez-Mejía is based on behavioral theory and also integrates the aforementioned categories *identification with the organization* and *corporate reputation* into a larger construct.

Some studies have already shown that there is a difference between the decisions of family businesses and non-family businesses (Gómez-Mejía, Cruz, Berrone & De Castro, 2011). This difference is explained by the fact that owners of family business firms benefit from the consideration of non-economic aspects. These benefits are called “socio-emotional wealth” and originates from the non-financial aspects of the business. The emotional needs of the owner family are met by these benefits. This includes the corporate identity or the continuation of the company within the family dynasty. As a result, family firms want to maintain the family influence in the company, even if it means to accept a worse performance. Kalm and Gómez-Mejía note the example of an employment of a less experienced family member as a manager in the company (2016) or a rejection of a very lucrative cooperation with other companies (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson & Moyano-Fuentes, 2007). However, they also behave more conservatively with regard to decisions that could jeopardize the company's performance and thus the existence of the company (Gómez-Mejía et al., 2007). Therefore, family businesses are motivated to preserve their socio-emotional wealth. In this context the risk function of the companies is not clear. On the one hand, family firms are willing to take greater monetary risks if they think that the socio-emotional wealth is in danger. On the other hand organizations can be highly risk averse when it comes to the future of the business. As a consequence the risk aversion is dependent on the fact that intensive decisions influence the SEW in both directions: positively or negatively (Kalm & Gómez-Mejía, 2016). An improvement or deterioration of the SEW represents the central reference point for important strategic decisions of the companies (Berrone, Cruz & Gómez-Mejía, 2012). As a result, executives in family businesses face entrepreneurial decisions that affect both financial aspects and the preservation of the SEW, while non-family businesses are more likely to face almost financial decisions (Kalm & Gómez-Mejía, 2016). These findings are in contrast to the classic principal-agent theory, as family businesses are quite willing to make strategic decisions that can lead to financial losses (Berrone et al.,

2012).

In their article from 2012, Berrone et al. define the SEW construct as an approach that describes the emotional capital of family entrepreneurs. This approach is multi-faceted and contains five dimensions (Kalm & Gómez-Mejía, 2016; Berrone et al., 2012). The first dimension involves the *influence and control* of the entrepreneurial family. The control of strategic decisions as well as the influence of family members are integral to the maintenance of socio-emotional wealth. Financial considerations play a subordinate role (Gómez-Mejía et al., 2007). The *identification* of family members with the company is the second dimension. Owners see their company as an extension of themselves and strive to maintain their positive reputation. This also promises a greater social commitment of family firms (Kalm & Gómez-Mejía, 2016; Berrone, Cruz, Gómez-Mejía & Larraz-Kintana, 2010; Dyer & Whetten, 2006). The third dimension refers to *binding social ties*. Not only family members but also employees share a sense of belonging and identification with the company. The extended family relationships also create stable relationships with the direct environment of the company. Family businesses are often shown to be very socially engaged in this immediate area due to their strong roots in local communities (Berrone et al., 2010). The *emotional attachment* to the company is also of importance. A usually long history as well as shared experiences influence today's business activities and relations of the organization (Berrone et al., 2012). The fifth and final dimension describes *the renewal of family bonds to the firm through dynastic succession*. The cross-generational transfer of the family business has been mentioned as one of the central aspects of socio-emotional wealth (Zellweger, Nason & Nordquist, 2011). For example, the time horizon of decisions is much larger. Family members perceive the company as a long-term family investment which should be bequeathed to the descendants (Berrone et al., 2010). In addition, this dimension includes the transfer of certain (family) values to the next generation (Berrone et al., 2012; Sirmon & Hitt, 2003).

### Management Development and Companies

Executives play an important, if not the most important role in companies. Almost seventy years ago, Peter Drucker described the manager as "[...] the dynamic, life-giving element in every business" (Drucker, 2006, p. 3). Thereby the survival of the company depends very much on the quality and performance of today's executives (Wexley & Baldwin, 1986). The execution of social responsibility within business enterprises is also attributed to the management. The top management symbolizes the component of the enterprise which influences the basic character of an organization through their personal convictions (Göbel, 1992).

The common belief that leaders are born was refuted several years ago. An insight of leadership research is rather that knowledge about management as well as skills and abilities for successful leadership can be learned and expanded to a certain extent. Under the broad term "management development" (MMD) a wealth of literature and articles has emerged (Wexley & Baldwin, 1986, p. 277). Management development can be described as a process which includes all processes in which knowledge about leadership and management is learned. The acquisition of new and the promotion of already existing skills and abilities in the practice of leadership are also located into the field of management development (Keys & Wolfe, 1988; Wexley & Baldwin, 1986). The long-term goal must be that the MMD motivates executives and helps them to gain new insights from their previous experience in a continuous learning process (Mailick & Stumpf, 1998).

An important observation which is associated with globalization is that multinationals today dominate the business world, transcending cultural, religious, linguistic and social boundaries. This development requires leaders who find themselves in a variety of very different situations to successfully master them. For example the authors Karakas, Sarigollu and Manisalıgil argue that ethical and social leadership principles must be anchored in managers as a cornerstone of management and thus also be included in management development programs (2013; Davis, 2014).

For the examination of the relationship between management development and family businesses, which are considered to be highly socially committed, two types of relationships are examined. First, the relationship between the impact of training on the behavior of the manager and the associated social commitment of the organization is described. The other relationship investigates how the type of business (family business versus non-family business) can influence the methods and content of management development programs.

### Management Training and the Behavior of Companies

A theory explaining the influence of top management on the overall direction of the company was published in 1984 by Hambrick and Mason. In the “Upper-Echelon” theory, strategic decisions of companies are explained by demographic and cognitive features of top management. The term “Upper-Echelon” characterizes the leadership elite of the organization (Michl, Welp, Spörrle & Picot, 2010; Hambrick, 2007; Hambrick & Mason, 1984). Thereby strategic decisions also include the general orientation of the company and reflect the respective characteristics, values and principles of the firm’s decision makers. In the model, these Upper- Echelon characteristics are described on the one hand by psychological characteristics such as cognitions and values and on the other hand by observable characteristics such as age, functional area, work experience, education, socio-demographic variables, financial position and group characteristics (Hambrick & Mason, 1984). In turn, these variables influence the strategic decisions of companies that deal with social commitment. For MMD cognitions play a special role since they are influenced by training or further development measures. Some studies already confirm this assumption (Michl et al., 2010).

Already in the late 1980s, a study in which a thousand American companies were surveyed, found that the central motives for the training of senior leaders is the expansion of the horizons and the development of new perspectives. In addition, the survey showed that topics like globalization and leadership ethics are seen as two of the most important training contents for the future (forecast horizon: five years) at the current time (Saari, Johnson, McLaughlin & Zimmerle, 1988). Pless, Maak and Stahl argue similarly in a study which was conducted 25 years later (2012). A study by Quazi revealed that a specific training influenced participants’ attitudes towards a positive perception of CSR (2003).

The influence of methods and contents of various development measures on the emotions, cognitions and behavior of managers has already been explained in the previous sections. In this area, some researchers have come to empirical results. This section of the paper now attempts to shed light on the reversal of the direction. So whether the business type “family firm” influences the management development programs. As already explained, family businesses can be particularly socially engaged for a variety of reasons. As a reference point, the already mentioned Upper-Echelon theory can be used as an explanation (Hambrick, 2007). In this context, management training does not influence the takeover of social responsibility, but the values and attitudes of managers influence the methods and content of development programs. The personal beliefs of business owners regarding decisions in this area is characterized by a (in the view of the manager) less rational approach. Decisions are rather influenced by personal beliefs and values (Garavan, Watson, Carbery & OBrien, 2016, pp. 877- 878). Especially family entrepreneurs, who have got their own ideas about the general corporate orientation and the social commitment of the organization, could differ from non-family entrepreneurs. Many influencing factors, which are summarized under the umbrella of socio- emotional wealth (e.g. owner identification, emotional attachment, reputation of the family business) offer the opportunity for decision makers to affect the management development in their family businesses.

In addition, Edwards, Elliot, Iszatt-White and Schedlitzki argue that MMD must be promoted by the top management. Also it has to be anchored in the company’s strategy and should reflect the culture of the company (2013). The culture of a company can therefore also influence the management development program. Some contributions have mainly dealt with the influence of the working environment (Baldwin & Ford, 1988) or corporate culture (Elangovan & Karakowsky, 1999) on the transfer of training content. However, how this affects the methods and content of management development has been less of a topic so far. Schein (1986) argues that culture significantly influences the mindsets of decision-makers. In turn, in the context of the Upper-Echelon theory, this could influence the management development programs of family firms. A 2016 study by Garavan et al. provides an initial indication for this relationship. They were able to demonstrate that executives who were also owners of the company incorporated their beliefs, attitudes and behaviors into the decision-making process. Moreover, they’ve selected management development measures based on their personal beliefs (Garavan et al., 2016).

### Data and Methods

The study’s access was chosen through a qualitative research approach. In contrast to quantitative methods, qualitative social research offers the advantage that it captures far more complex structures. The qualitative approach of the study is particularly useful in the context of less investigated research areas, as it is open to new information out of the field and does not examine pre-formulated hypotheses (Lamnek, 2010; Edmondson & McManus 2007).

## Literature Review

The literature review demonstrated the state of the current research. The classification of the study into the research context was also carried out. In this case, the study not only examines the economic perspective of companies, but also focuses on insights from other scientific disciplines. For this purpose, the study takes an interdisciplinary socio-economic perspective, which sets the economic activity of companies in relation to social and political processes and also examines them in this context. The aim of the study is a better understanding of the economic, social and political reality of companies. Therefore, the focus of the literature research was not only notably economic journals such as *Entrepreneurship Theory and Practice*, *Academy of Management Review*, *Personnel Psychology*, *Academy of Management Annals* and the *Journal of Management*, but also selected works by Peter Drucker who unites various scientific movements in his considerations.

## Research Design

The strategy of the study follows an inductive, theory-generating approach in which causal mechanisms are sought. The data of the study were collected by the method of the qualitative expert interview. This method is very suitable for the development of new theories and propositions, since standardized, quantitative methods would not measure the specific knowledge of the respondent. Reconstructing social situations involves intensive analysis of the collected data, so only a small number of cases are investigated at the same time (Gläser & Laudel, 2010). The access to the research object was chosen through a problem-centered interview, because the interview situation has to be largely open, although theoretical considerations have already been made (Lamnek, 2010). Hypotheses or propositions are already partially available and can be checked in the interviews. However, the interview guide was also created to allow for new content.

## Research Setting and Sample

The research setting consisted of four companies based in Germany. In order to ensure comparability between the companies, two family businesses and two non-family businesses were surveyed. The attempt was to interview two larger companies (annual revenue > € 500 million) and two smaller companies (€ 100 million > annual revenue > € 500 million) in order to integrate the size of the company into the study<sup>2</sup>. According to Eisenhardt (1989) among four to ten cases are required to achieve theoretical saturation. The present study examines four companies operating in various industries in Germany (see Table 1). The determination of the family influence was made on the simplified F-PEC scale (Astrachan et al., 2002) according to Keese et al., (2010). In the three categories of power, experience and culture, a very strong family influence was observed for companies A and B. According to the organizations, they also refer themselves as a family business. Companies C and D have low to very low family influence and do not call themselves family businesses. The expert interviews<sup>3</sup> are not the only survey method in this study. In order to compensate for possible weaknesses of expert interviews the approach of triangulation is used (Gläser & Laudel, 2010). In addition to conduct two interviews per company<sup>4</sup>, this study also evaluated corporate materials such as mission statements, chronicles and slides from corporate development programs.

Table 1 Sample overview

Case	Company Type	Size Category	Branch	Interviewee	Capacity
A	Family firm	small	Lumber Industry	A1; A2	Head of (HR) development Director
B	Family firm	large	Automotive Industry	B1; B2	Head of HR Director
C	Non-family firm	large	Energy Supply Industry	C1	Head of HR and board member
D	Non-family firm	large	Media Industry	D1	Head of HR development

<sup>2</sup>Company D was planned as a NFF with the size "small". However, no small NFFF could be found for the study. A detailed explanation follows in the section limitations.

<sup>3</sup>The file with all transcribed interviews is submitted separately. The transcripts are written in German, because the interviews were also conducted in German.

<sup>4</sup>Only one interviewee per company could be found in the NFF category.

## Data Collection and Analysis

The data was collected by means of qualitative interviews and other data sources in order to generate data saturation and to ensure method triangulation. However, the main data source were the transcripts of the problem-centered expert interviews. In total, six interviews were conducted in four companies. The study design follows a theory-generating, inductive approach. Therefore, an interview guide with open questions was developed. In addition, the guide was adapted according to the company and the interview partner.

The technique “summary and inductive category formation” was used for the present study (Mayring, 2010). The final coding scheme consisted of six main categories and 31 subcategories and was created through an iterative approach

## Results

### Perception of Social Responsibility

The profitability of the organizations is of paramount importance for all objects (FF & NFF) studied (for example B2, p. 3; C1, p. 10). The surveyed companies thus confirm Peter Drucker's hypothesis that an organization has primarily an economic responsibility (2009). All companies (FF & NFF) are aware of a social responsibility for their decisions (e.g. A1, p. 4; A2, p. 4; B2, p. 6; C1, p. 5; D1, p. 3). However, family firms called many more local initiatives that they have implemented in less developed countries and also worldwide:

Table 2 *Family firms and social commitment worldwide*

Interviewee	Quotations
A2, p. 11 Director	“What concerns Bulgaria, where we already have nearly 900 employees there, is certainly a certain responsibility, an attempt to implement standards. There we set up employee cafeterias. There we are also trying to get involved in the social field, every year we support the hospital a bit, e.g. that they can buy new devices. We're already trying to realize this type of responsibility in a small area.”
A1, p. 6 Head of HR development	“[...] just in Bulgaria, we want to be a role model there. We want to show our employees an ethically correct way there. Although we do not say now that we own the correctness of ethics, but we speak of a European community of values and of course we represent it in all [areas].”
B2, p. 7 Director	[B2 asked for the implementation of worldwide uniform standards] “[...] Since it is not a choice for us to do something like that, we just did it the way it should have been. And that describes the principle a bit. We are in cities in China where you do not need to have wastewater treatment. But we have one, because we have a wastewater treatment at each site. We have a specific situation for all our employees. That means dressing rooms or something else. And we have them everywhere, even if you do not need that. These are just fundamental principles that we implement, even if the requirements are less in this country.”
B1, p. 8 Head of HR	[B1 asked about the implementation of worldwide uniform standards] “Good. Yes. It is, where is that the case? For working conditions, of course. That we say our factories have any quality standards, any safety standards that we implement worldwide, even if local regulations are lower. Clear. Or there is a minimum wage that is so low that you would be ashamed to pay them to the employees there.”

Thus the assumption arises:

**Proposition 1.** *Family firms have a higher social commitment than non-family firms.*

Very clear statements were made by all firms for their political responsibilities at home and abroad. Thus, both family businesses and non-family businesses position themselves largely as politically neutral or ascribe the implementation in this area to the state and the international community. It is also clear for the FF that they are very restrained regarding clear political opinions nationally and internationally (e.g. B2, pp. 7-8; B1, p.8; A2, pp. 2, 4; A1, pp. 3, 8).

### Family Firms and Socio-Emotional Wealth

For a better understanding, the structures of the two surveyed family businesses are shown here. Company A is led by two descendants of the company founder as authorized directors (father & son). In company B, a non-family member is responsible for the management. However, each of the two founding families have got a representative on a strategic level in the company.

The results of the interviews are presented below using the described dimensions of the SEW:

Maintaining the SEW through *influence and control* were described by all four surveyed experts of the family firms. In company B, an even stronger family influence becomes apparent. According to the mission statement in B, the representatives of the founding families are only involved at a strategic level. Personnel manager B1, however, makes clear that a much greater influence is apparent: "[The authorized representatives of the families] are sometimes more involved in the operating business. [...] they interfere with more in the operative business than it is perhaps the case in a larger business group" (B1, p. 15).

The *identification* of family members with the company is also part of the study. Specifically, the interviewees were asked whether the family members perceive a reputational damage to the company name as damage to their own name. The interview extracts show that this assumption can also be confirmed in the study (e.g. A2, pp. 8, 9; B1, p.15; B2, p.11). As a consequence, a relation between family names and the company's reputation in society emerged from the survey. In this context, the area of image and reputation gains was also present in the interviews. Thus, the companies confirmed the thesis that they also expect a certain benefit from their social commitment but family businesses communicate very little to the outside world about this topic (e.g. A2, p.5, A1, pp. 2, 5; B1, pp. 4, 7; B2, p. 9). This leads to the following conclusion:

**Proposition 2.** *The realization of image and reputation benefits through takeover of social responsibility is of minor concern for family businesses.*

Statements on *binding social ties* (third dimension) can also be found in the transcripts of the expert discussions. The category deals with an increased local commitment. CEO of company A describes this as: "But family business actually means that understanding that one perceives the employees, the customers, and thus all the stakeholders, as a kind of big family. So if we do events with the staff, we also [...] [invite] the families of the staff, e.g. we celebrated an employee party with 1000, 1400 employees and their partners [...] where we celebrated together. Also this "we-feeling", family as a reservoir, for the big family. [...] Also partly with employees who have been in the company for generations; the second, third, fourth generation. That's all part of it" (A2, p. 6) and "[...] for our 150th anniversary celebration, we had also asked our customers to donate, instead of gifts, and we collected about 30,000.00 Euros from the customers. We have rounded up to the 100.000,00 Euros and then give it to each of the communities here in the area where our employees come from, then split it according to the key of the number of employees [...]. There was a car bought then for food delivery to needy people. This is what the communities determine on their own" (A2, pp. 5-6). Company B is also very involved in the same area: "[...] up to bigger things like sponsoring sports teams like [the local basketball team]. We do that too. Basketball, national league. [...] Or just the city run or just things that [...] are offered in a company. Such as a heavily subsidized company restaurant, so that each salary can in principle afford food equally. From small production employee up to the board. That's something we put money into [...] at most locations. [...]. And for example, we have a nursery, a crib, such things [...]" (B1, pp. 1-2). It becomes clear that both family businesses are strongly associated with the region and are also involved locally.

The fourth dimension, which means *emotional attachment* to the company, was mentioned by the two FF at several points in the study (e.g. A2, p. 7; B1, p. 6; B2, p. 10). A long-term time horizon and the transfer of the family business are to be assigned to the fifth and last category. They are subsumed under the concept of *inheritance*. Both companies provided detailed information on this category (A2, pp. 6, 9; B2, p. 1).

The explanations show that all the dimensions illustrated in the theoretical part and queried in the discussions with the executives are actually present in the family business. Thus, the hypothesis that FF and NFF differ by the presence of socio-emotional wealth can be confirmed for this study.

### Instruments of Social Responsibility

In addition to the general sense of responsibility, the focus of the study are the instruments of corporate social responsibility. The purpose of this area was to identify potential patterns between family businesses and non-family businesses regarding their used instruments.

The first step is to present an overview of the embedding of these instruments in the area of non-family firms. Both, media company D and energy company C indicated that they have institutionalized their activities. This was done either through a corporate advisory board (D) or via the company's internal compliance guidelines (C) (D1, p. 1; C1, pp. 1-2, 4). The study showed that NFF have set a framework for the taken actions. In addition, the NFF use a wide range of different instruments (D1, p. 1). The most frequently cited instrument were donations (corporate giving). Corporate volunteering is also one of the most common tools (for example, C1, p. 3; D1, p. 2). Family firms also show that the instruments of donation and employee exemption play a role (for example, A1, p. 3). Similar to NFF, both FF use a wide range of instruments (B2, p. 5; A1, p. 2).

With regard to the institutionalization of instruments, FF differ from NFF. Both family businesses either did not provide information on institutionalization or describe a contrary move. Company B has a very clear position here: "So there are companies [...] who have really professionalized this [...]. And we do not have that. So I believe we do where we believe, where we want to interfere, we [...] join in, if that makes sense for us [...]. What is obvious and important to us, or what is brought to us, we filter out what we want to participate in" (B1, p. 4). "We are sitting up here together and then we decide quickly on such topics [...]. This is, I think, the big difference - it is a bit shorter and faster" (B1, p. 5) and [B1 tells something about a social project] "Then we go and offer her a company apartment, get the woman a job, although she cannot actually perform any job, and see that it all works out. Well, I think that's also part of the social responsibility on a very small scale, and I think that such a family business is unlikely to be a corporation, where the CEO or the supervisory board says, we'll do that now, we help now" (B1, p. 4).

Expert interviews have shown that both FF and NFF use the full range of social responsibility tools. Differences in organizational embedding have emerged in this study between the two types of companies. Here family businesses describe their activities as much more spontaneous and less embedded in a fixed organizational framework. The statements in this chapter suggest the following:

**Proposition 3.** *Corporate social commitment is less institutionalized in family businesses than in non-family businesses.*

**Proposition 4.** *Family businesses make use of social responsibility instruments much more spontaneously.*

### Management Development and Family Firms

Are family businesses and non-family businesses different in terms of their content and methods of management development? To what extent does the top management influence the in-house management development? How are managers influenced by different trainings in their daily work? And, do the managers of the surveyed companies perceive themselves as role models? These questions are in the focus and were a fundamental part of the expert interviews.

#### Management Development Content

For the family companies the main objectives of their development programs were to enable their executives to act effectively by selecting relevant leadership topics with a highly practical orientation (A1, p. 12; B2, p. 12).

A central theme of the development programs for the interview partners is the willingness to change. The empowerment of executives to carry out organizational change was mentioned several times by all respondents (FF & NFF). In this context, managing the information overload by executives poses an additional challenge for the surveyed companies. In addition, another factor that plays a role for the managers is the speed of change, which, according to all interviewed organizations, has increased and is therefore of high importance in management development (e.g. A1, pp. 11-12; B1, pp. 9, 10; B2, p. 12; C1, p. 10; D1, pp. 4-5).

In addition to these common topics of all surveyed companies, there was also a central commonality that were only named by family businesses. In the interviews, companies were asked about ethical or moral training content

and where its origin lies. Both FF answered similarly here. They derive this content from their corporate mission statements or compliance programs, which in turn result from the values and attitudes of family entrepreneurs:

Table 3 *Derivation of MMD content from mission statement & values of FF*

Interviewee	Quotations
A1, pp. 13, 20 Head of HR development	"[...] Of course, our guiding principles and the corporate mission statement are always the binding framework. [...] we train them [the managers] very intensively [...]."
"We generate this from our mission statement. We are very clear on the subject of responsibility, sustainability, but of course there is also the information in the context of the training, why we do it that way for our executives [...]."	
B1, pp. 14, 18 Head of HR	"We don't do anything that doesn't fit into the business strategy. So everything we do has [...] always to do with the fact that we want to achieve certain goals. That means we always relate the issues we have in leadership development programs to our business strategy [...]. The business strategy is ultimately adopted by the company management."
[B1 asked about the impact of corporate culture on MMD content] "We have partners with whom we do this, but we always do that in cooperation. So what I never did and never will do is we say we have the topic twelve, dear consultancy X, do it for us. Because that has nothing to do with the company, nothing with the strategy, because you could do this management training at another company. That would not make a difference. [...] I always say that we have to adapt everything [to the corporate image]. And make it relevant for the company."	
B2, pp. 8, 10, 14 Director	"So when we rolled out the new strategy a few years ago and there we also described the [company] values. Of course we went back and looked what was at some time described as our values? And in that sense, we believe that this description of these [...] values is actually an evolutionary step from what one has thought and how it has simply been adapted and transmitted over time into the modern age."
"So we are active to teach what we have described as [corporate] values. And we also want people to live [these values] and implement it, no matter where [...]."	
[B2 asked about ethical content in management development] "That really doesn't matter in the development program. But it doesn't matter in the development program, because it is such a fundamental thing. We have our own compliance program and our own compliance training [...]. But I would put that in a separate category, because that's one of those famous "no negotiables" and we also deal with such things [infringements against compliance] in such cases, yes, quite relentlessly and very strictly."	

The quoted passages show clearly that the values and beliefs regarding ethical behavior of companies are also significant for the content of management development. According to its CEO, company B goes one step further and places this content in a separate training course, which is mandatory for all executives. This observation allows for the following assumption for the study:

**Proposition 5.** *Family firms derive ethical or moral content of MMD from their corporate mission statements & values.*

In this context, there is also the question whether the top management influences the content of MMD and whether the family members directly influence the content of MMD:

Table 4 *Influence of family members on MMD content*

Interviewee	Quotations
A2, p. 12 Director	[A2 as the bearer of the family name asked if he influences the content of the MMD] "Yes, [...] certainly, if you do something like this external training [...], but that was very connected, very strong again to our mission statement and leadership principles [...]. That there is the same understanding [...]."

B1, p. 12 Head of HR	[B1 asked about the influence of family tribes] "They are, and I think that's the big difference, even to a [...] DAX corporation, or a stock corporation, or any other construct, that they're obviously closer to the company. [...] Or take a bit more in the operative business than might be the case in a concern. And of course they hold up the flag for the families who are ultimately behind it and who own the [company] here. They are representatives [...]. I assume that a [Representative Family Tree I] or a [Representative Family Tree II], if they feel that the Human Resources Department is doing anything that harms Company B and thus the families, they would come to me and would ask me some questions. That's what I'm expecting."
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Table 4 shows that family members influence MMD content. This influence is not only indirectly characterized by corporate mission statements (see Table 3), but also through a direct influence of top management. On one hand, this shows that the development programs are related to the corporate strategy and the related values and beliefs. On the other hand, the hypothesis that the beliefs of the company founders / owners influence the development content can be confirmed. The starting point for this hypothesis was the Upper-Echelon theory. From the citation tables 3 and 4 as well as the preceding ninth proposition follows:

**Proposition 6.** *Family entrepreneurs and family members influence the content of management development.*

### Methods of Management Development

"[...] [There] are a thousand basics that one can do" (B1, p. 13). This quote from a human resource manager characterizes the use of management development methods as very good for the present study. Thus, as well as the contents of the MMD programs, the methods used are also characterized by a very broad application. None of the organizations limit themselves to just one particular method. Rather, they either explicitly named the use of multiple methods or expressed this implicitly by enumerating different methods. Depending on the size and type of company, one or more methods were highlighted.

In addition to classical knowledge transfer via frontal teaching (e.g. A1, p. 14 & D1, p.6) the two development methods "mentoring" and "coaching" can be found in all four companies (B1, pp. 13-14; C1, p. 14; D1, p. 6). On the other hand, there is a development method that is explicitly named by both family firms: the instrument of "role playing" (A1, p. 15; B1, p. 14). The high significance of this method is shown by a quote of B1: "It is a training, where we use role-playing to practice the expectations and basics of leadership, also kindly saying "hello", respectful interaction, speaking clearly, listening and understanding before the solution comes, and doing things like that. These are simple basics, but it's about people who are confronted with it for the first time. It's always easy to understand that in an intellectual way. However, in the second time if the first employee comes along and howls [...] then it is much more difficult" (B1, p. 14).

In addition to role-playing, the two FF place particular importance on the "networking" development method. For company A, networking and its discussions are one of the most important development methods (A1, p. 15; A2, p. 15). This leads to the following assumption:

**Proposition 7.** *Family and non-family firms use partially different management development methods.*

### Ethical Decisions and the Role Model Function of Executives

Managers shape the object "enterprise" (Göbel, 1992). The influence of management training on managers' behaviors and attitudes was discussed in the theoretical part of this study. The executives interviewed confirmed this assumption (e.g. B1, p. 18; B2, p. 15; C1, p. 15). The manager of company B made a very appropriate statement about the influence of training on executives: "And in the end, the key is to have heard so much that one for themselves, [...] out of all these things [contents of the attended MMD trainings] have packed their own rucksack, because in the end, for me, the principle is always "you just better". And not "you but different" (B2, p. 15). The attitudes and values of the executives are either brought into the companies by themselves or they are influenced by development measures. In this area, the question of decision-making according to ethical-moral aspects and the role-model function of the executives, which can also be influenced by training, are in the focus. All surveyed companies were characterized by a very large willingness to provide information:

Table 5 Role model function &amp; decision making

Interviewee	Quotations
A1, p. 11 Head of HR development	"For me, management is this: One thing is, you need a good, well-grounded knowledge of many things [...]. But you also need high moral values that you believe in and that you represent."
A2, p. 10 Director	"[...] As a manager I think it is important to be aware of the role model function, and that one also has a certain type of stringency. Not exactly only during working hours, also to behave in the same way in the free time [...] to represent a [...] coherent picture of himself. As the saying goes: not to preach water and drink wine."
B2, pp. 15-16 Director	[B2 asked for the role model function of the manager] "In the sense that it is authentic, effective and necessary, it is about the saying that you only "drink wine and preach water", or vice versa. I mean, you also have to be aware of how to act in public, how to be in everyone's eyes and under what observation you are there, and in the long run, you can only be what you are and how you really are. People will find out relative quickly, and that's why there's no way to separate both areas from each other."
C1, p. 17 Board member	"Well, I believe that the subject of the discourse and the value of the argument is something important. I think we are already experiencing a certain crisis in democracy because we or because society has a certain problem with a mistrust in the elites. [...] And to recognize one's own limits, where one can say, with a clear conscience, I can actually make a decision after weighing up and where do I actually just follow my gut feeling? And there, where I follow my gut feeling [...] we must be very careful that we do not lose the connection to people, because the reason of the confidence crisis of the elites is that the population no longer feels that the economy serves their interests. They think there is a club [...] which decides, but not in the best sense, just in their sense [...]."
D1, p. 8 Head of HR development	[D1 asked about the fostering of humanity through MMD] "We are a firm with a high diversity. We have over 50 nations here on campus who work together [...] and the way we interact with each other, I think, reflects much of what you're talking about in terms of acceptance and tolerance, equality [...]. It is already anchored in different directions for us, so that we have signed the Diversity Charter. And with regard to such questions we have already very clear positions."

Table 5 shows the role model function of executives is a key issue for all companies. Any differences between the two types of businesses haven't been found. For this part of the study, no clear statement can be made for or against a higher commitment of family businesses. This results in the following proposition:

**Proposition 8.** *Family businesses and non-family businesses do not differ in terms of their perceived function of managers as role models and their decision-making.*

## Discussion

### Implications

In order to answer the question of the study it was first necessary to examine the fundamental understanding of the social commitment of the surveyed companies. Here a clear agreement with the hypotheses of Peter Drucker can be made. For example, the profitability of the company is most important for companies. However, another finding of the study is that all companies, whether FF or NFF, are aware of their social responsibility, even though the FF emphasized their responsibility to society in the interviews more. Image and reputation benefits played a subordinate role for both types and so Milton Friedman's thesis that companies are only socially committed for their own sake cannot be accepted for this study. The main reason for differentiation between the two types is that companies' initiatives are uncoordinated, locally embedded and not coordinated with their competitors. In this context, also an ambivalence in the area of political responsibility became clear: Thus, the participants of the study declared themselves on the one hand as non-political organizations that do not want to interfere in the political and social events. Almost all participants made rather reluctant and neutral statements. On the other hand, they are practicing this kind of responsibility in the context of the refugee crisis, even more implicitly and unconsciously. Thus, almost all companies surveyed are very concerned about the integration of refugees. In addition, companies are also involved in informing the public about important social issues, such as environmental action and sustainability.

The differences between family businesses and non-family businesses became apparent against the background of

socio-emotional wealth. Although the FF confirmed that they receive some economic benefit of their social commitment, the preservation of the SEW is more important to them than the (short-term) improvement of their financial performance. In addition to this general finding (Gómez-Mejía et al., 2011), the formulated dimensions of the SEW by Berrone et al. (2012) can be confirmed. The close relationship of the family businesses to the (local) setting was a special recognition that has also come to light. So the social impact of this type of business (FF) is very limited to the immediate environment. Furthermore, the FF try not only to get involved at the headquarters in the region, but also locally at the company locations around the world. The hypothesis of Dyer and Whetten (2006) that a socially irresponsible action can always harm the reputation of the family or the personal reputation was also confirmed by the family firms. However, further findings of the study on FF have been that companies communicate much less about their commitment and perception of social responsibility in public, and that they decide for a certain social activity far more spontaneously. They are aware of their social responsibility, but have no set of guidelines or their own department for this area. They often decide very quickly and spontaneously, which instrument of action fits to them as a family business, their culture and associated values.

There were also some noteworthy findings in the area of management development. During the study, two very important contents of the MMD programs emerged. For one thing, it was the ability of managers to deal with the information overload. For all companies surveyed, this also involves mastering complexity and rapid change in their day-to-day business. In terms of development content, a difference between FF and NFF was also found. Thus, the majority of family businesses stated that the ethical or moral content of their management development is derived from corporate mission statements and values (Proposition 5). This observation cannot be confirmed for non-family businesses. Consequently, the two types differ here in the contents of the MMD programs. This observation was confirmed with the finding that the management of the FF explicitly influence the content of MMD. This result confirms once again the postulated relationship from the Upper-Echelon theory about the influence of the family members on the business activity. In addition, the contents of the development programs were very heterogeneous and difficult to compare since each company sets other priorities. The change of MMD content over time was also the subject of the guideline-based expert interviews. In terms of leadership, all interviewees stated that they haven't noticed a change and affirm the statement that the content did not change significantly, just the name under which the topics are taught or learned have been changed.

In the area of development methods, the study generated a similar variety of results. The study revealed that the focus of the surveyed companies was mainly on the two methods mentoring and coaching. They described them as a very effective means. The method of networking has also been mentioned many times. In addition to networking, role-playing is also of central importance to both family businesses. This leads to the conclusion that FF partly use other developmental methods (Proposition 7). The dominance of a single method regarding FF and NFF could not be confirmed.

All executives confirmed the impact of the training on their attitudes and behaviors in the study. Thereby, the role model function and the value orientation of managers are pivotal to their (further) training.

Despite some differences between family and non-family businesses, there were some similarities in the study. Since both, content and methods are characterized by a broad distribution of statements, we would like to refer to the quotation made by the managing director of B, which summarizes the results of the management development section: "You have to try to reach as many executives as possible with your program. This can be attained in one case through a coaching, in the other case through feedback, in the other case through a mentor [...]. You just have to take care of and then you have to convey that you really want to take care. Then the success rate or the chance of success is greatest" (B2, p. 13).

## Limitations

The primary limitation of the study is the sample size, which restricts the generalization of the findings. The survey was limited to four companies. Within the selected sample, two executives could be interviewed in the case of the family-owned companies (managing director and human resources manager), with NFF only one person at a time. This limitation was the result of the NFF's willingness to participate in an interview and time constraints involved in conducting the study. This resulted in less data being collected in the NFF area. Therefore, in order to make the results more generalizable, it would be desirable for following investigations to use a larger sample size. In addition, it was impossible to sift through actual training material. All participants assured access to this material but did not respond even after several requests. As a result, the researcher had to rely on the truthful statements of the experts regarding the content of the development programs. For a deeper understanding of the training content and further studies in this

area, access to this material is required in any case.

The selection of the NFF as part of a comparison can also be considered as a limitation. Thus, both companies, C as an energy supplier and D as a media company have got a special role in society. Both companies already possess a high level of responsibility in society through their core activities (energy supply (C) with almost all citizens as customers and company D as an opinion-forming company, which is committed to media regulation). It could be true that the similarities regarding the perception of social responsibility could originate from this fact. In addition, comparability of results between FF and NFF would be higher if NFF would be located in the same industry as the FF. Another point that would have improved comparability would be a consistent ratio of company size. Company D was originally planned to be a "small" NFF, but had to be replaced by a much larger NFF due to the limited choice of available companies. Improving the design of the study in the area of management development could also have revealed various personal characteristics of the managers. Thus, it would have been possible to differentiate between skills and abilities that executives bring into the company and those who are learned or influenced by leadership training. It would also clarify whether family businesses attract executives with particular social attitudes and behaviors. A combination of quantitative (e.g. questionnaire on managerial characteristics and used MMD methods) and qualitative (e.g. expert interviews) research methods could compensate for the limitations of the present study.

## Conclusion

By integrating sociological and economic findings, the present work enables a comprehensive understanding of the social responsibility of companies and their management development programs. Therefore, the wealth of data allows for drawing some conclusions.

A key finding of the study is that Drucker's statement about the social responsibility of a firm can be fully confirmed. Thus, all surveyed companies and executives are aware that they have a social responsibility. Family businesses become aware of this responsibility to (local) society through their history. However, they barely communicate their social commitment. In terms of management development, companies use a variety of methods, also to impart ethical content. Especially family businesses are guided by their mission statements and values of their common past. For both, methods and content of any kind, the study has generated initial indications for further research.

Finally, the perception of the exemplary role of the surveyed executives as part of the social elite, which was formulated by the CEO of company B and which expresses the essential content of all statements of the surveyed companies, should be pointed out again:

*"[...] in the long run, you can only be what you are and how you really are. People will find out relative quickly, and that's why [the promotion of humanity, democratic values, and the responsibility of the manager] there is no way to separate both areas from each other"* (B2, p. 16).

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## Brief Biographies of the authors

### Lars Laechele

Master of Science in “management and technology” at the TUM School of Management. He finished his studies with his master thesis called “Social Responsibility and Management Development: An Analysis of Socially Responsible Companies”. His main fields of interest include corporate social responsibility and organizational development as well as leadership related topics.

### Peter Paschek

Graduated in social and economic sciences at the Ruhr-University Bochum (Study places: Germany, Great Britain and the USA). Since 1979 Peter Paschek is working as a management consultant. He has been active in teaching at the University of St. Gallen (up to 2013) and the TU Munich.

## English as a Medium of Instruction in Oman's Higher Education Institutions: Implications for International Engagement

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### Abstract

*English is today the international community's dominant lingua franca, with more than a quarter of the world's population being able to communicate, to some degree, in the language. Accompanying this reach is a focus among an increasing number of international tertiary institutions on programs where English is the medium of instruction (EMI). This phenomenon can be witnessed in Outer and Expanding Circle nations as more and more higher education institutions offer EMI in countries across Europe, sub-Saharan Africa, Asia, and the Middle East and North Africa. The same is true of the Sultanate of Oman where English has been taught as a subject in schools since at least the time the nation's modern "renaissance" began in 1970, and where it has been adopted as the dominant medium of instruction in almost all higher education institutions. Within this context, this paper presents the results of a study exploring student and teacher perspectives of EMI at the tertiary level to gain a clearer picture of the social and educational challenges and opportunities associated with its implementation. This investigation involves data collected through a 31-item Likert response scale questionnaire administered in English and Arabic to 415 students and 55 instructors, in addition to semi-structured, one-on-one interviews with 26 student and 9 teacher participants in several tertiary-level institutions from around Oman. Results indicate that student and teacher participants identify a number of advantages associated with EMI, such as preparing students for the demands of the workforce, allowing greater access to the latest development in their fields, and encouraging the adoption of more globalized perspectives that can enhance their sense of identity. However, a number of significant challenges, such as limited content understanding and the possible incompatibility of English's associated socio-cultural values with Omani traditions and beliefs, are also present. The implications of these findings for Oman's education system, especially as they relate to the official objective of increased engagement in the international community, are discussed.*

## Leadership Through Service-The Scindia Model

Saraswath M D

Scindia School, Gwalior, India

### Abstract

We at The Scindia School believe that real education is primarily about providing the correct references and appropriate stimulants for the inherent goodness to express itself on its own.

Meaningful and continuous engagement in community development programmes is one part of that process at our school since the 1940s. Currently, each boy spends 2 hours per week for the entire year on some kind of service activity. Students engage themselves in maintaining greenery, digging pits for tree-plantation, campus-cleaning, maintaining age-old water reservoirs and preserving ancient techniques of water conservation which have been in use for centuries. All this is done under the aegis of the 'Social Service League' through which all service activities are routed in the school. For example, on 2nd October each year, the entire Service Staff of the school is served a meal by the students; on 26th January every year we organize Shramjeevi Diwas, wherein a sports extravaganza for the entire service staff and their families is organized in school campus. In February each year we celebrate Sonsa Day in our adopted village of Sonsa and invite members of nearby villages to participate in the same. On this day, the entire village community is encouraged to play sports and in the end everybody shares a sumptuous meal. During Founder's Day, all the boys engage in cleaning and decoration of their respective boarding Houses. This culture is promoted to cultivate respect for menial work in the boys. We also run some community service projects of our own in Thiksey (Ladakh, J & K), Sonsa (M.P) and Nathon-Ka-Pura (M.P). Our Service projects primarily aim to promote gender equality, skill-enhancement for gainful employment, children's education and infrastructural development. The Ladakh Service project is the most recent one and has taken an international dimension with student delegates arriving from across the world.

We've seen an interesting pattern emerge as a corollary to what's written above. Once these youngsters have imbibed the value of 'Service' through these community development programmes, their attitude towards society, and perspective with regard to leadership is altered forever. It is proved by the fact that our Old Boys network, known as the Scindia Old Boys Association (SOBA) also engages in similar activities. In the last few years, through one of its programmes titled 'Able the Disabled', Old Boys have donated about 52 wheelchairs and 8 stretchers at various Railway Stations, Airports & one Old Age Home across the country. In the last two years alone, across ten cities in India our Old Boys and their relatives have donated 1000 units of blood.

This brings us to the last point that exposure to community service at a young age inculcates the ideology of 'Servant leadership' in our students. It is a deep philosophy and set of practices that enriches the lives of individuals, teams, society and ultimately creates a more just and caring world.

## **PERSONAL E-DIETITIAN - Your companion to better health is just a click away**

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### **Abstract**

*We are living in an era where diseases dictate our diet and lifestyle. What is more surprising is that most diseases are due to an evolved food culture. We propose technology where a mobile app can act as a personal e-dietitian effectively. Its intent to ensure people's fitness and prevent them from any diseases is at the forefront.*

*With personal e-dietitian app, one can scan their food items with a mobile camera which will return food item's compatibility with user's ideal diet, side effects and nutrition factor. This app utilizes Data Mining and Artificial Intelligence(in the form of meal recognition). Once the meal is recognised, the app mines its metadata in context with one's personal diet. A search is conducted over a large set of authentic data provided by top physicians and dietitians. The app also considers user's medication to reflect side effects, if any, which one should be aware of.*

*Consider an apple to exemplify the technology. Let us assume that user has already stored their height, weight, body type, medication and existing diseases in the app. Before consuming the apple, a user will have to open the app and either scan it using their mobile camera(by chance if they don't know its name) or enter the name. The App will next detect it is an Apple and search through its database and let the user know several details like the nutrients contained in Apple, the advantages of consuming Apple considering the specific user context, whether Apple will have any side effects with respect to the medicines user is taking, etc. This enables anyone using this app to know more about the food before consuming and then take a call on whether this fits one's diet and medication. To make user's decision easier, app also provides the calculated percentage of food's compatibility with one's diet and medication. We believe that this proposed technology can help in spreading awareness among people about their diet and health which can result in an effective drop in the rate of diseases and paving the way for a healthier generation and sustainable choices.*

## Being a reflective and Researching teacher: Challenges. Value and Importance

Burnell, Kerrin

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### Abstract

*The ultimate goal of this presentation is to consider the challenges, value and importance of being both a reflective and researching practitioner in higher education contexts, especially in this era of rapid social and professional change. First, the literature related to the importance of being a reflective practitioner and a researching practitioner in higher education settings are discussed separately and some key terms defined. Due to the interconnected, complementary nature of these roles, they cannot be fully disentangled; even though they are presented in separate sections, there is considerable overlap. The connection between theory and practice is very important to this discussion because, as Dewey states, theory by itself is sterile and unable to manifest itself and practice without theory is 'arid' (1929). Moreover, as the local contexts in which higher education is taking place is increasingly impacted upon by globalization in the form of information exchange, communications technologies use, student and teacher mobility, and the broadening of professional networks across countries, the ways in which the theories and practices related to these two ideas inform each other has an important impact upon the achievement of higher education outcomes. The implications of this situation for higher education in a university in Oman will be discussed.*

## Predicting Intention of University Students to Visit Mongolia Using an Extended Theory of Planned Behavior

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### **Abstract:**

*This research extends the Theory of Planned Behavior (TPB) by incorporating the destination image construct to predict the intention of university students to visit Mongolia. A conceptual model was proposed to investigate the relationship among destination image, attitude, subjective norms, perceived behavioral control and intention to visit Mongolia. The extended model was empirically tested using 230 questionnaire survey data collected from university students. All the hypothesized relationships were positive and significant. The results reveal that destination image were positively associated with attitude, subjective norms and perceived behavioral control. On the other hand, attitude, subjective norms and perceived behavioral control were also positively associated with intention to visit Mongolia. The study concludes that extended model of TPB clarifies our understanding of university students' intention to visit Mongolia.*

## **White privilege and its impact on Global Economy**

**Roseanne, M., Evans, D.**

*University of Wisconsin Parkside, USA*

### **Abstract**

*White privilege has been a part of American academic discourse since 1989, with the publication of Peggy McIntosh's seminal article: "White Privilege: Unpacking the Invisible Knapsack." Since then, the concept and its implications have grown to include many aspects of American culture, including language, politics, and sports. One aspect of privilege that is seldom mentioned is global white privilege. This workshop will explore that concept and its impact on economic systems. Global white privilege works to maintain the continuation of this system through maintenance of empire, white corporate profits, and aggrieved white victimhood.*

## **A Study on Community Perspective on Ecotourism in the Valley of Kashmir**

**Dr. Iqbal Ahmad Bhat, Nazish Hena Khan**

### **Abstract**

*The Valley of Kashmir which is nestled in the North-Western Himalayan range is often termed as 'paradise on earth'. Tourism is synonymous with the overall development and prosperity of the people of Kashmir. With the emergence of new trends in tourism, the paradigm has now shifted from mass tourism towards sustainable development of tourism. Ecotourism not only sustains the well-being of the local people, but also involves conservation of biodiversity and education. Kashmir is seen as an important ecotourism destination with all sorts of diversity and resource base. But the concept is still in its nascent stage, and needs more attention at the local level. Community understanding of the concept and its apparent benefits play a vital role in the promotion of ecotourism in the Kashmir Valley.*

## The Psychology Behind the Impact of Business Experience on Sustainable Orientation

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### Abstract

*Entrepreneurship no longer relies solely on economic success. Optimal entrepreneurial behavior in the twenty-first century requires a balance of various aspects of business behaviors such as economic health, social justice and environmental sustainability. No matter one's role in entrepreneurship, be it running the business or playing a small role in the company, entrepreneurship and sustainability are not necessarily incongruous. By bringing together the emerging fields of the psychology of sustainability and business, one can comprehend how this merger can be used for a greater understanding of the inner-workings of organizations, whether one's orientation to sustainability makes a difference to their entrepreneurial intentions and how individual sustainability has the potential to expand social and policy changes. With business experience comes happiness and other positive feelings that can be used to steer sustainable orientation.*

*This literature review aims to analyze this contribution of the psychology of sustainability and use it to try to understand the impact one's sustainable orientation has on business. The possibility for further research and interventions are also discussed, especially on how one can, through the use of psychology, understand human behavior and in turn, empower sustainability.*

## Complementarities and Contradictions of "Sustainable Globalization"

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### **Abstract**

*This paper takes the two words that frame the conference -- "Sustainable" and "Globalization" -- and poses the question: are they complimentary or contradictory? "Sustainability" is usually seen in purely environmental terms and gauged by measures like "carbon footprint". But is it possible to conceive of sustainability in a more encompassing way? Similarly, "globalization" is usually taken to mean the free flow of goods and services across national borders. But what happens when various other trans-national flows are brought within the ambit of that term? And what are the complementarities and contradictions that result when these expanded notions of "sustainability" and "globalization" are brought together? This paper is an exploration of these issues.*



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