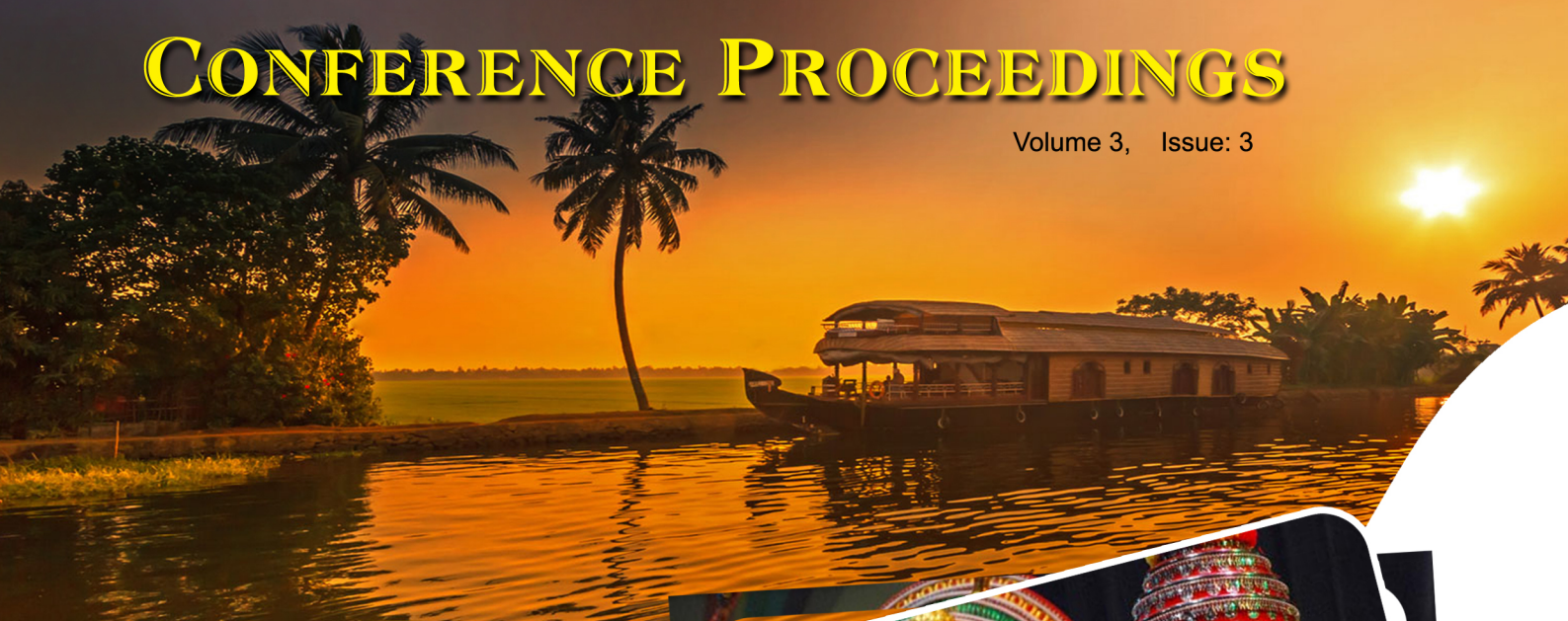




3rd
International Conference on
SUSTAINABLE GLOBALIZATION 2020

CONFERENCE PROCEEDINGS

Volume 3, Issue: 3



ICSG 2020
in association with



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ACCREDITATION COUNCIL
FOR ENTREPRENEURIAL &
ENGAGED UNIVERSITIES



9-11 January 2020
Marriott Hotel, Kochi, Kerala



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Wissenschaften



SAINT-PETERSBURG
STATE UNIVERSITY
OF ECONOMICS

International Conference on Sustainable Globalization

January 09-11, 2020 Kochi, India

Editors

Robinet Jacob Ph.D.
School of Tourism Studies
Mahatma Gandhi University
India

Abey Kuruvilla Ph.D.
University of Wisconsin - Parkside Wisconsin (Kenosha),
USA

Hedda Sander Ph.D.
Ostfalia University
Germany

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Committee Chairs

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Foreword

After a successful Inaugural conference in January 2018, followed by a second one in January 2019 that brought in 86 submissions from 14 countries and an overwhelming vote to hold the conference again in Kerala, India, the ICSG board is delighted to welcome you to the 3rd International Conference on Sustainable Globalization. This conference is broader in scope and participation - faculty, administrators, entrepreneurs and students that are participating across various disciplines of academia and industry will attend. The discussion on sustainable globalization continues to have even greater immediacy and urgency this year.

Stakeholders from higher education, K-12, industry and Govt can work even closer together, learn from each other and collaborate to achieve common goals. We thank each of you again for believing in the idea of the conference and coming together from all over the world. And we are thrilled with the partnerships that this conference has already generated and will continue to generate.

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. Just like we desired last year, our team has expanded even more:

Abey Kuruvilla

General/Program Chair, Budget, Sponsorships, Speakers

Robinet Jacob

Conference/Organizing Chair, Operations, Logistics, Volunteers, Sessions

Hedda Sander

Review Chair, Editing, Research and Technical Sessions

Mriganko Ghosh

Website Creation and Development

Toney K. Thomas, Anita T. A. & Aju K Asok

Conference proceedings, program scheduling

Arun P

Technology and media

We are thrilled with this year's lineup of speakers and participants and invite you to partner with us in advancing the objectives of this conference every year towards a more sustainable world.

Thank you and welcome to ICSG 2020

ICSG Executive Board

Robinet Jacob

India

Dr. Abey Kuruvilla

USA

Hedda Sander

Germany



Inaugural Keynote Address

Higher Education in the U.S.: Sustainability and Strategic Partnerships



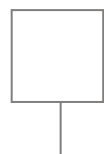
Dr. Rob Ducoffe

Provost & Vice Chancellor

University of Wisconsin-Parkside

Dr. Rob Ducoffe

Dr. Rob Ducoffe has served as the Provost & Vice Chancellor at the University of Wisconsin- Parkside since April of 2016. Previously, he was Dean and Professor of marketing in the Judd Leighton School of Business and Economics at Indiana University South Bend. Rob is the State of Wisconsin lead for Complete College America, serves on the Steering Committee and is co-chair of the Health, Education, and Leadership Advisory Council for the Academies of Racine, and is a board member for Racine Area Manufacturer and Commerce. His spouse, Dr. Sandy Ducoffe, is an adjunct marketing professor and Sandy and Rob have five children. Provost Ducoffe will speak about High Impact Practices and Strategies for Sustainable practices in higher education.



Plenary Keynote Address

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



Prof. Dr. Thorsten Kliewe

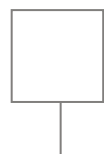
Founder and Chair
Accreditation Council for Entrepreneurial and Engaged Universities

Prof. Dr. Thorsten Kliewe

Prof. Dr. Thorsten Kliewe is an international expert on the topics of entrepreneurial and engaged universities, collaborative innovation and change management in higher education institutions. He is passionate about fostering the interaction between academia and business to create economic and social impact.

Professor Kliewe is the Founder and Chair of the Accreditation Council for Entrepreneurial and Engaged Universities (ACEEU, www.aceeu.org) which promotes cultural change and organisational development in higher education institutions by offering the world's first accreditation system for entrepreneurship and engagement at institutional level.

He is a Full Professor for Innovation Management and Business Development at Münster Business School at Münster University of Applied Sciences (MUAS) in Germany and the Deputy Director of the Science-to-Business Marketing Research Centre (S2BMRC, www.science-marketing.com) at MUAS. The S2BMRC is a worldwide recognised research centre that conducts research and develops new models and tools for successful science-business engagement.



Program Committee Chair

Abey Kuruvilla

University of Wisconsin - Parkside
Wisconsin (Kenosha), USA

Organizing Committee Chair

Robinet Jacob

Mahatma Gandhi University, India

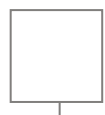
Review Committee Chair

Hedda Sander

Ostfalia University, Germany

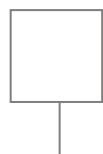
ICSG Organising Team

Toney K. Thomas, Sindhu R. Babu, Anita TA, Arun P, Aju K. Asok, Jishnu P.
Thampy, Mahadevan P.



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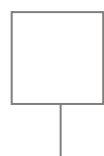
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Higher Education in the U.S.: Sustainability and Strategic Partnerships

Robert H. Ducoffe

*Provost and Vice Chancellor, Academic and Student Affairs
University of Wisconsin-Parkside*

Abstract

This essay touches on the current operating context of higher education in the United States characterized by slowing or decreasing enrollments of traditional-aged students, financial pressures on institutions, and, generally, their slow-to-adapt efforts to serve the needs of today's growing numbers of life-long learners. A description of how University of Wisconsin-Parkside is relying on strategic partnerships to flourish is provided. Ten specific partnerships are discussed.

Keywords: Higher education, sustainability and strategic partnerships

The Context for Higher Education in the U.S.

Higher education in the United States grew as the population did throughout the 20th century. Additionally, as waves of (mostly) young men returned home from wars fought across the globe from the 1940s onward, American universities multiplied across the nation to meet the demand for individuals with education beyond high school. Hundreds of regional public universities with missions like the University of Wisconsin-Parkside were formed to offer students, living mostly within commuting distance of their campuses, access to high quality undergraduate and master's programs. With the financial support of the U.S. federal government that covered public university tuition and expenses for returning soldiers, the higher education sector in the nation expanded rapidly.

As a result, "until just a few years ago, colleges could anticipate classes of high school graduates each bigger than the last." (Grawe, 2018) At a macro-level, however, overall population growth in the U.S. has slowed growing by 0.7 percent in the last year, the smallest annual expansion in 80 years. (Chokshi, 2016) High school enrollment has slowed as well. Enrollment in grades 9–12 grew 7 percent from 2002 to 2015 and is projected to slow to an increase of 3 percent between 2015 and 2027. (U.S. Department of Education, 2019) A similar pattern is evident at the university level. Total enrollment in degree-granting postsecondary institutions increased 19 percent from 2002 to 2016, a period of 14 years;

and is projected to increase just 3 percent from 2016 to 2027, a period of 11 years.(U.S. Department of Education, 2019) Slowing enrollment has led to a decrease in the number of higher education institutions in the nation from a peak of 7,253 in 2012-2013 to 6,138 in the 2018-2019 academic year, (Lederman, 2019) a decrease of 15 percent!

Some observers of these trends warn of trouble ahead for the higher education sector. Clayton M. Christensen and Michael B. Horn forecast that 25 to 50 percent of colleges will close or merge as many are increasingly unable to bring in enough revenue to cover their costs. (Christensen and Horn, 2019) An article in Forbes predicted that up to 500 private colleges and universities offering 4-year degrees will close by 2040. (Blount, 2019)

Weise and Christensen contend that, "...(t)he business models of most traditional schools make them structurally incapable of responding to changes in the markets that they serve.... (S)tudents are inevitably beginning to question the return on their higher education investments because the costs of a college degree continue to rise and the gulf continues to widen between degree holders and the jobs available today." (Weise and Christensen, 2014) The cost to attend a university increased nearly eight times faster than wages did in the U.S. between 1989 and 2016. (Moldonado, 2018)

The current system of higher education in the U.S. seems still to fit a former industrial economy that needed fewer college graduates and focused on educating young people for their first 18 to 25 years. Today, the global economy, rapidly evolving knowledge, and longer lifespans with more career transitions suggests that higher education must evolve to serve learners from before they arrive in college through after they retire. (Lambert, 2019)

The importance of college training, in spite of the increased number of voices critical of its length, cost, and relevance, is borne out by robust market acceptance of those with college educations. Workers with at least some college education captured 11.5 million of the 11.6 million net new jobs created in the U.S. during the recovery from the Great Recession that began in 2008. While jobs are back, they are not the same jobs as those lost during the recession. The Great Recession decimated low-skill blue-collar and clerical jobs, whereas the recovery added primarily high-skill managerial and professional jobs. (Carnevale, Jayasundera, and GulishAmerica, 2016) So, it seems likely that individuals in the future will need more, rather than less education and the strategic challenge is to *adapt* to better serve their needs.

University of Wisconsin-Parkside's Context

The University of Wisconsin-Parkside, one of 13 universities in the University of Wisconsin System, is a public, regional, comprehensive university referring, respectively, to the subsidies it receives mostly through State government, the geographic footprint from which most of its students come, and the array of undergraduate and master's degree programs it offers. UW-Parkside is 51 years old, has about 4,500 students of which 88 percent are undergraduates and 12 percent enroll in professional master's programs. Typically, 80 percent of its students commute to campus and the remaining reside in campus housing.

UW-Parkside's region, the southeastern portion of the state and the northern border counties of Illinois, is subject to the national demographic and educational trends described above though perhaps even more challenging due to its location. Wisconsin is a Midwestern state, a region whose overall population growth was less than half the rate for the U.S. from 1958-2018. (U.S. Department of Commerce, 2019) Further, the percent of high school graduates that attend college in the University's region is lower than in other parts of the state. (WISEDash, 2019)

To add to these challenges, spending by the State of Wisconsin in support of public higher education decreased by an inflation-adjusted amount of \$466 per student from 2008 to 2018, placing it 45th of 50 states in the U.S. in the rate increase/decrease in funding in the most recent 10-year period. (Hess, 2019) From 2009 to 2018, overall enrollment in University of Wisconsin System campuses decreased from 178,909 to 171,636, a decline of 4.1 percent. (University of Wisconsin System, 2019)

The pressures to do more with less are leading universities like UW-Parkside to form partnerships to help accomplish institutional goals. Partnerships are likely to become more important as universities attempt to adapt and thrive amid economic volatility, political change, demographic shifts and technological developments. (AASCU, 2018).

Strategic Partnerships to Sustain UW-Parkside's Business Model

UW-Parkside is thriving. It increased enrollment by 4.1% in the most recent year, increased its graduation rates in the last three years to 70 percent above its historic average (with a record high each year), produced more graduates in last 10 years than during any other period in its history, significantly increased support for faculty and staff development, and implemented additional compensation increases for colleagues who are underpaid relative to peers.

Institutional progress has benefited from continuity and effectiveness in leadership, maturing strategic planning, a funding model described elsewhere that incentivizes enrollment growth, (Wood, Ducoffe, and Menke, 2018) and the engagement and commitment of talented and hardworking faculty and staff.

Our focus here is on the role that strategic partnerships are playing in helping to strengthen and sustain UW-Parkside's business model. Given the complexity with which we are organized, the importance of our work, and the challenges in our environment, we rely on strategic partners to advance our mission and to achieve our vision and goals. I am using a definition of strategic partnerships as "collaborations that help achieve greater impact than any organization can generate on its own ranging from less integrated associations and coalitions to more highly integrated joint programming, shared services, and legal mergers." (Bridgespan Group, 2018)

Table 1
Strategic Partnerships at UW-Parkside

1. Online collaborative programs
2. Online program manager
3. High-impact practice learning opportunities
4. Regional alliance for talent development
5. Support for faculty research and innovation
6. Corporate relationships
7. College-credit programs for high school students
8. Shared administrative services
9. Improving and preserving the natural habitat on campus
10. International partnerships

The nature and benefits of each of these partnerships, how they permit UW-Parkside to achieve greater impact than would be possible otherwise, are briefly described below.

1. Online collaborative programs

While adult learners comprise 44 percent of U.S. postsecondary students and many millions more need postsecondary credentials to succeed economically, practices and policies continue to favor traditional, financially dependent, 18- to 21-year-old high school graduates who enroll full time. (Kazis et al, 2007). To serve adult students in Wisconsin and beyond, UW Extended Campus (UWEX), an organizational unit of the UW System, coordinates online and adult/professional education on behalf of all 13 of the UW System

campuses. Extended Campus uses a collaborative online program model that individual campuses voluntarily join to offer programs in high demand fields. All 13 UW System campuses are partnering on at least one of 24 such programs, with three campuses partnering in 10 or more. UW-Parkside is a partner in 12.

Enrollment in UWEX-managed programs grew 54 percent over the past five years while enrollments across the UW System shrunk by 2.3 percent overall. Retention rates for these collaborative programs are nearly twice as high as the national average for comparable adult-serving online programs, and average months to graduation for comparable programs is shorter. (Brower, 2019) Collaborating campuses share equally in teaching and in net revenues and benefit from offering programs together that could likely not be offered with existing faculty and staff resources on any single campus. At UW-Parkside, this has permitted launch or planning of 12 new programs at the master's and bachelor's levels in healthcare, information technology, and business fields. In the past five years, student enrollment in these offerings has grown from 171 to 317, an increase of 85 percent.

2. Online program management

Online Program Managers (OPMs) are for-profit companies that help universities develop and manage online programs. They provide services like marketing and recruitment, enrollment management, curriculum development, online course design, student retention support, technology infrastructure, and student and faculty call center support. Some providers offer bundled services in exchange for sharing tuition for the programs they help manage and others offer their services in unbundled formats. (Hill, 2019) Essentially, they perform similar functions to those provided by UW Extended Campus described above that enhance our ability to serve adult students.

UW-Parkside contracted with Academic Partnerships, an OPM firm, to develop a 100 percent online MBA program. Over time, the university's traditional MBA had continuously lost enrollment, as has been the case for similar programs nationally, (Gee, 2019) and faculty and administration concluded jointly that there was a significant interest in redesigning and offering a revised curriculum online. Thus far, the partnership is exceeding expectations. Over 300 online MBA students will be enrolled by the beginning of 2020, a period of 18 months since the program was launched. Two additional online master's programs, one in Sport Management and another in Professional Communication, are under development for launch within 12 months.

3. High-impact practice learning opportunities

The key insight from George Kuh's scholarship on High Impact Practices (HIPs) is that the more time and energy students devote to their university experience, the more likely they are to obtain the desired outcomes of an undergraduate education. (Kuh, 2009) Engagement-building

teaching techniques, known as HIPs, include, for example, undergraduate research, community-based learning, internships, and capstone courses and projects. At UW-Parkside, the campus's goal is to ensure all students have at least two HIPs experiences as undergraduates. Using Kuh's practices categories, currently, 7-in-10 graduates do. We also believe major proportions of performance-oriented curricula in Theater and Music rely on an accepted HIPs category called, "collaborative assignments and projects" and we expect, therefore, that the percentage of our students that benefit from HIPs experiences is significantly higher.

HIPs facilitate learning outside of the classroom (Center for Postsecondary Research, 2019), UW-Parkside partners with numerous organizations external to the university without whom such student experiences would not be possible.

- Community-based learning (CBL) permits students to apply their knowledge and skills to project-based learning experiences while serving their communities. Professors and community partners collaborate on projects that meet identified community needs. Projects cover many professional areas, such as research, marketing plans, strategic plans, graphic design, web design, database design, security audits, GIS mapping, communication plans, personnel training, conflict resolution, and more. Each year, about 50 courses are matched to community organizations and 1,300 students in 25 different majors participate.
- The UW-Parkside App Factory develops mobile apps for community clients throughout southeastern Wisconsin providing conceptual designing and prototype mobile app development services for technology challenges. These paid services are offered by students who are gaining valuable experience and being hired by some of the world's leading technology firms. In a typical semester, about 25 students are employed on client projects in the App Factory.
- UW-Parkside faculty and students have partnered with the Wisconsin Department of Natural Resources in regular sponsored research to study environmental conditions in the Root River that passes through the region served by the university. Fish species studies have been done since the 1970s. Recently, with the decision of

Foxconn to locate in the region and divert water from Lake Michigan to serve its operations, faculty and students have engaged in sampling water quality to establish baselines in advance of planned water usage, filtration, and return by the corporation to the Root River.

4. Regional Alliance for Talent Development

Southeast Wisconsin, and specifically the cities of Milwaukee and Racine, have earned the unfortunate designation as the worst cities in the U.S. to be African American based on an index of eight measures of race-based gaps in socioeconomic outcomes. (Comen, 2019) In response, an unprecedented collaborative of 18 southeastern Wisconsin public and private, two- and four-year colleges and universities and a network of partner organizations, formed the [Higher Education Regional Alliance](#) (HERA) in 2018. HERA is dedicated to increasing college completion, ensuring the collective program array aligns with industry needs, and making it easier to recruit students for internships and full-time positions. Given the critical need to increase development of and access to talent, these varied institutions have banded together to improve educational outcomes, spur economic development, and change the trajectory of the region.

Collaboration across higher education institutions and other sectors to have [collective impact](#) is a particularly challenging task. There is the mutual understanding, however, that no single institution can confront these challenges on its own.

5. Support for faculty research and innovation

UW-Parkside is one of 11 regional, comprehensive, “teaching-focused” universities in the UW System. UW-Madison and UW-Milwaukee, both doctoral, research-intensive institutions, place greater emphasis on scholarship, have smaller teaching loads, and more significant infrastructures to support research and innovation. Never the less, all faculty at UW-Parkside, as is the case for our sister comprehensives, are expected to be active scholars while typically teaching four-courses per semester.

The UW System established a unique and valuable entity called [WiSys](#), to provide academic technology transfer, Intellectual Property protection, contract management, and technology commercialization for the 11 regional comprehensive campuses. Anyone -- faculty, staff, or student -- can work with WiSys to develop an idea, protect their intellectual property, or help bring an innovation to market. WiSys runs or supports various entrepreneurship initiatives among students, awards research grants, and provides staff support and programming for

faculty who wish to pursue sponsored research opportunities. The benefits of this partnership to UW-Parkside and the other UW regional campuses are significant as WiSys operates at a scale impossible for any individual teaching-focused campus. The 2017 Milken Report ranked WiSys 128th out of 225 research institutions in the U.S. ahead of institutions such as Dartmouth, Boston University, Michigan State University and other renowned universities. (Milken Institute, 2018) From 2013-2019, UW-Parkside faculty, staff, and students averaged 5.33 invention disclosures per year and one of our students, Cassie Van Hoof, won the Innovator of the Year Award in 2019 for her products to combat aggressive behavior in cats and dogs. (WiSys, 2019)

6. Corporate relationships

In terms of research and innovation, corporations “want a relationship model – a durable, cooperative model that enables companies to partner with academia in a fashion that allows them to stay continuously connected to early stage research and to accelerate the translation of that research into new products that drive economic growth.” (Lutchen, 2018) For corporations, as well as universities, competitive and environmental pressures are coaxing institutions to collaborate with one another in many other areas including: student and faculty projects, curriculum development, career services, internships and fieldwork, job-market needs, donations, board and committee participation, guest lectures, and continuing education. (Shacklett, 2015)

UW-Parkside maintains relationships with numerous corporations for the reasons above. In some cases, institutional relationships are multi-layered. The university’s relationship with [CNH Industrial](#), a global enterprise in agricultural and construction equipment, trucks, commercial vehicles, buses and specialty vehicles, is a good example.

- CNH classifies UW-Parkside as a “Tier 1” priority university for recruitment and hiring for internship and full-time positions based on proximity to their corporate locations and past success.
- CNH is one of the largest employers of UW-Parkside graduates with approximately 130 alumni currently on staff.
- Business and Operations Management classes make periodic site visits to CNH and host guest lecturers.
- CNH participates in course-based student projects through the Ralph Jaeschke Solutions for Economic Growth (SEG) Center.
- A new alumni affiliate group at CNH will focus on engaging with current students

(mentoring, career development) and being ambassadors for other CNH employees to enroll at UW-Parkside.

- CNH supports scholarships and an Italian exchange program based in Calabria where CNH has operations.

7. College-credit programs for high school students

Concurrent or dual enrollment programs are partnerships that provide high school students the opportunity to take college credit-bearing courses that help them successfully transition to college and reduce the cost of higher education. Processes are in place in accredited programs to ensure college courses offered by high school teachers are as rigorous as courses offered on the college campus. (NACEP, 2019)

The [Parkside Access to College Credit Program \(PACC\)](#), is a concurrent enrollment program allowing eligible high school students to earn college and high school credit by taking designated courses at their high school at one-third the (university) tuition cost. High school teachers and UW-Parkside faculty members collaborate to develop college-level courses within high schools in the Southeastern Wisconsin region. The PACC program, launched in 2016 with one course and 29 students, currently has 12 courses serving 396 students in five high schools. By next year, the number of course offerings is projected to increase by 50 percent.

8. Shared administrative services

Of the countries in the Organisation for Economic Co-operation and Development (OECD), the U.S. charges more in tuition for higher education per master's and per doctoral student than any other country, and more than every country save one at the bachelor's level. (OECD, 2018) While American universities tend to provide more out-of-class services to students than universities in other countries, the main contributor to higher costs in the U.S. is attributable to spending on staff and faculty, about \$23,000 per student per year, more than twice what Finland, Sweden, or Germany spend. (Ripley, 2018) In Wisconsin, the UW System has frozen tuition rates for undergraduate students for eight years to help maintain access to affordable, high-quality undergraduate education for State residents.

Within the UW System, 47.1 percent of total expenditures comprise instruction and research (UW System, 2019), and there is strong interest in controlling costs, especially in non-instructional areas. A newly established unit within the UW System, [UW Shared Services](#), is

leading this effort by focusing on cost reduction, efficiency and service through standardizing, consolidating and streamlining processes and services in areas like human resources, business services, and information technology. Historically, the 13 universities in the UW System have functioned autonomously, even in non-academic areas, and it is anticipated that there will be significant benefits in cost and quality by scaling functions such as student information systems, cybersecurity, and mandatory employee training. At UW-Parkside, for example, a staff member focused on payroll was transferred to UW Shared Services as part of a “system-wide” team with cost savings for the position retained at the campus.

9. Improving and preserving the natural habitat on campus

UW-Parkside is located on over 700 acres of natural prairie and woodland. Aside from its beauty, it is used by faculty, staff, students, and the community for instruction, research, athletic events, community engagement activities, and leisure. In May 2019, UW-Parkside and Kenosha County, the campus’s home county, formed a partnership to improve the ecology and recreational opportunities on 139 acres of university property. UW-Parkside formed a Land Use Committee of faculty who have teaching and research interests in environmental science to advise university administration on partnership activities.

Kenosha County will perform a range of functions over the 50-year term of the agreement in cooperation with the university including:

- Mapping ecological communities and the conditions of vegetation and animal species;
- Improving the ecological condition of the property including removing invasive species and storm water management;
- Collaborating with faculty to develop and offer hands-on instruction and programs for school groups in the community;
- Maintaining, expanding, and managing public hiking and bike trails; and
- Collaborating on grant applications and other funding requests.

10. International Partnerships

According to a 2017 survey of university leaders by the American Council on Education, 77 percent reported having active partnerships overseas with aims including exchanges of faculty and students, research, civic engagement, professional practice, institutional capacity building, societal impact, globalization of student learning (Buck Sutton, 2018), as well as student recruitment.

UW-Parkside has international partnership agreements with 15 universities in India, China, Germany, Italy, Russia, and Nigeria. In a typical semester, there are about 100 international students studying at UW-Parkside as part of agreements that involve degree study at their home campuses that articulate typically with master's programs in business or computer information systems at Parkside. Faculty in partner institutions collaborate in research and in creative activity as well. For example, faculty at UW-Parkside and Ostfalia University of Applied Sciences in Germany created an Algae Estimator, a mobile phone application used for estimating harmful algae blooms. Undergraduate and master's students from both institutions conducted computer coding, water sampling, and app testing and the Algae Estimator earned a national award in Germany. Last year, led by faculty from partner campuses, choirs from Jiangnan University in China and UW-Parkside visited the others' campuses for a week learning about their respective musical and cultural traditions, toured their respective regions, and gave performances to appreciative audiences. The Two Worlds, One Art exchange was a highly successful collaboration.

Conclusion

This essay highlights the challenging environment for higher education in the U.S. It then describes how the University of Wisconsin-Parkside, a public, regional, comprehensive institution is using strategic partnerships to help achieve its aims to serve more students, serve them well, and continue to serve as an anchor institution in Southeastern Wisconsin. While the broader environment is creating headwinds for universities in the U.S., through partnerships with the University of Wisconsin System, companies, non-profits, other universities in the region and overseas, and high schools, UW-Parkside is bolstering its abilities to deliver on its vision to transform lives.

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Brief biography of the author

Robert H. Ducoffe

Dr. Rob Ducoffe has served as the provost & vice chancellor at the University of Wisconsin-Parkside since April of 2016. Previously, he was dean and professor of marketing in the Judd Leighton School of Business and Economics at Indiana University South Bend.

Cultural Diversity Management of Employees in Hotel Industry for Sustainable Development

K.Sathiyabamavathy, Bindu.V.T

Avinashilingam Institute of Home Science and Higher Education for Women

Abstract

India is a country with a long history, and historically many people visit the country for spiritual reasons, bringing in visitors from all over the world. Additionally, the country has 32 national heritage sites bringing in history buffs, and a wide variety of nature reserves and parks for those looking for adventure. The variety of available sites makes India a popular choice for many visitors. This has inspired many hotel chains like Marriott to start working with India to create more hotels within the country. Last few years many star and business hotels were opened in Coimbatore which turning out to be a market that is both challenging and promising. Growth potential comes from several factors such as textiles and foundries, presence of large number of educational institutions and hospitals, location advantage as the gateway to Ooty which is a well known tourist destination and proximity to export hubs such as Tirupur and Karur. These bring visitors to Coimbatore not only from other countries but also from different parts of the country. Hence this study is concentrated over the hotel industry to know the impacts of multi-culture and diversity among employees. 270 samples were collected from the employees of various hotel industry using random sampling procedure in the form of structured questionnaire and the analysis were carried out using SPSS software. The results of the study revealed that work environment, employee welfare practices influences multi-culturalism among employees to enhance the longer engagement of employees in hotel industry. The results of the present study can significantly influence the diverse employee engagement in hotel industry for sustainable development.

Key Words: Employee, Hotel Industry, Diverse Culture, Customer Satisfaction, Sustainable Development

Introduction

Coimbatore is the second largest city by area and population in TamilNadu after Chennai and the 16th largest urban agglomeration in India. It is administered by the Coimbatore municipal Corporation and is the administrative capital of Coimbatore District. Cities rich industrial background brings in business people who are meeting and working with the international companies, thus strengthening the industry. Coimbatore is more a MICE market (meetings, incentives, conferencing and exhibitions). When there is a major conference or exhibition, at least a few hotels see a jump in occupancy. It is a challenging market as it is price-sensitive. Existing hotels need to invest for maintenance, refurbishing and maintaining their brand standards and the main business are from room occupancy. And, many of the overseas business visitors book rooms through their local partners. These partners look at more benefits at a relatively lower price. Culture provides an individual with an awareness of his/her identity, roots, historical background, giving also a sense that one belongs to a certain community. It regulates and controls an individual's attitudes and behaviors. However, problems may occur when people from different cultural backgrounds misunderstand each other, which results not only from language barriers but is also due to cultural differences. Thus it is important not only to speak the foreign language but also be aware of cultural differences which exist in different countries. Many hotel chains are seeking expansion opportunities into overseas markets, the global expansion of hospitality companies may cause that hotel managers are sent by their organizations to fundamentally different culture destinations than their home environment. Continued globalization is increasingly resulting in cultural diversity of the hospitality workforce. Many cultures have to work together and communicate during daily duties. This cooperation and communication is critical in the hospitality business where customers are served by many employees, who in turn have to be supported by other staff.

Hospitality industry is labor-intensive human resource management is more complex and strongly depends on effective communication. Lack of understanding of cultural differences may lead to many communication misunderstandings and ineffective practices. Successful members of the hospitality industry work well with others and can be a productive members of a team. They value the contributions of everyone and make significant contributions to organizations overall success. Key abilities required include being able to work effectively as a team member through taking instructions from others and understanding your own role in servicing the needs of the hospitality customer. Supporting other team members to coordinate activities to achieve quality of team members and seeking their assistance to service the culturally diverse needs of customers. As Coimbatore is one of the fastest budding tier-II cities in India and is a hub of mixture of a variety of

culture and people using the available resources in the city. It has wide number of tourist destination, it is being acknowledged by both local and foreign travelers. Experiencing cultural differences is perceived as one of the most fundamental motivators for travelling, to operate successfully hospitality professionals should understand and empathize with people from different cultural backgrounds. As there is a huge leap in the hospitality industry in Coimbatore this study is more interesting as most of the hotel employ employee of different culture to satisfy the guests.

Objectives of the Study:

- To understand the Cultural diversity in Hospitality Industry of Coimbatore.
- To study the difference between the employees level of expectation and perception on factors like quality of work life, diversity image, behavioral intentions among the employees.
- To analyze the level of employee satisfaction towards the benefits provided by the Management.

Scope of the Study

The present study helps us to find and analyze the factors of cultural diversity among employees in hotel industry, understand the different factors, cultural diversity, job characteristics, rewards and recognition, organizational justice, perceived organizational support. This study also allows us to know about the Multi-cultured environment and its impact over employees in hotel industry. The study can be further extended to different geographical locations so as to understand the diversity inclusion as a whole. It can be beneficial for further researchers as they can understand the various determinants of employee engagement as diversity management in various industry.

Limitation of the Study:

The research is carried out in short span of time with limited sample size. Due to confidentiality of some information accurate response is not revealed by the respondents. There may be biases and prejudices of the respondents in answering the questions. The study is restricted to particular geographical location that is confined to Coimbatore.

Review of Literature:

Issam Ghazzawi et. al., (2016) In his study he explores the links between religious faith and job satisfaction using a multi religion sample of working adults. Data were drawn from 741 employees and managers from Southern California organizations and firms. The sample included non-religious individuals and members of a variety of religions. The intent was to

examine whether and what level of religious commitment impacted workplace attitudes, specifically job satisfaction. In his paper, he compares and contrasts members of the five largest religions, in relation to job satisfaction. It was found that religious commitment does positively impact job satisfaction, though there are differences depending on the type of religion.

Nicholas Peter Aramovich (2013) Workforce diversity has been described as a double-edged sword; it has the potential for positive and negative outcomes. To better understand why and how diversity leads to positive outcomes, he examined the relationship between employee perceptions of diversity climate perceptions and intent to turnover. They explored the role of four psychological outcome variables (organizational commitment, climate for innovation, psychological empowerment, and identity freedom) as possible mediators of this relationship. Racial and gender subgroup differences were also examined. Findings suggest that when employees perceive equal access to opportunities and fair treatment, intent to turn over decreases. Furthermore, these relationships are significantly mediated by psychological outcomes. Implications for diversity management and training are discussed.

Szu-Fang Chuang (2013) This study synthesized the literature findings in relation to both cross-cultural management and international leadership as an initial effort toward identifying essential leadership skills for global leaders to meet the challenges they face now and in the future. In this study, diversity is defined as the differences among a group of people in cultural background, ethnicity, religion, language, gender, age, and occupation.

Harold Andrew Patrick and Vincent Raj Kumar (2012) Declares diversity management as a process intended to create and maintain a positive work environment where the similarities and differences of individuals are valued. The literature on diversity management has mostly emphasized on organization culture; its impact on diversity openness; human resource management practices; institutional environments and organizational contexts to diversity-related pressures, expectations, requirements, and incentives; perceived practices and organizational outcomes related to managing employee diversity; and several other issues. The current study examines the potential barriers to workplace diversity and suggests strategies to enhance workplace diversity and inclusiveness. The study concludes that successfully managing diversity can lead to more committed, better satisfied, better performing employees and potentially better financial performance for an organization.

Eddy S. W. Ng and Rosalie L. Tung (2011) Their paper examines the relationship between ethno-cultural diversity and attitudinal and non-attitudinal measures of organizational performance in a field setting. Data were collected from ninety-eight respondents in seven branches of a leading Canadian bank. As compared to culturally homogeneous branches,

the culturally heterogeneous branches experienced lower levels of absenteeism and achieved higher productivity and financial profitability despite their lower scores on job satisfaction, organizational commitment and workplace coherence, and higher rates of turnover. These relationships were moderated by age, job tenure, organizational position, children's age, location of education and previous employment, birthplace and education level.

Jakob Lauring (2009) His paper aims to identify communicative practices emerging from the management decision to implement English as a corporate language, assessing their implications for social interaction and relationships within the multilingual workplace. An exploratory study based on qualitative research interviews was used. The analysis highlights the discrepancy between a general openness to the use of English as a corporate language in Danish organisations and language users' communicative practice. This leads to the identification of language clustering and thin communication as characteristic behaviours within the multilingual workplace. The research identifies two barriers to employee interaction within the multilingual workplace. This is relevant in relation to language planning as well as diversity management. The paper is original in its application of a sociolinguistic perspective to employees' linguistic practice. This points to the importance of language as a social resource and the possible limitations of corporate language policies.

Jawad Syed and Edwina Pio (2009) Their study sheds light on the mobilisation of Islamic discourses in the lives of working Muslim migrant women and its interaction with Australian society in the context of diversity management as a workplace practice. Informed by a multilevel perspective on diversity management, this paper suggests that focusing exclusively on organisations and holding them solely accountable for diversity policies may be intensely inadequate as diversity management is impacted by both macro-societal and micro-individual issues. Through qualitative research by drawing on interviews with Muslim migrant women employed in the formal economic sector, the findings underscore the need for sophistication in dealing with the complexities presented by migration, ethnicity, religion and gender.

Mary M. Meares (2007) His study examines mistreatment through the perspectives of employees with different cultural backgrounds and positions in order to understand the ways in which some voices are muted and others are privileged. Mistreatment is interactional, distributive, procedural, or systemic abuse of employee standing place at both interpersonal and institutional levels on the basis of cultural diversity..

Dianne Lewis et. al., (2006) until recently, Australians considered themselves as little more than expatriates on an outpost of Great Britain. Until the mid-1960s an official policy of racial

discrimination known as the 'White Australia Policy', aimed at excluding non-Caucasian people, specifically of Asian nationality, ensured that Australia and its workforce remained predominantly white and Anglo-Saxon. However, in the 1970s attitudes towards Asian immigration began to change and today most Australians recognize themselves as living in a multicultural society. Universities now actively recruit Asian students and many families have come to live and work in an environment that they feel will provide more scope and opportunities for themselves and their children than exist in their own home countries.

Thomas Kochan et al., (2003) This article summarizes the results and conclusions reached in studies of the relationships between race and gender diversity and business performance carried out in four large firms by a research consortium known as the Diversity Research Network. These researchers were asked by the BOLD Initiative to conduct this research to test arguments regarding the "business case" for diversity. Few positive or negative direct effects of diversity on performance were observed. Instead a number of different aspects of the organizational context and some group processes moderated diversity-performance relationships. This suggests a more nuanced view of the "business case" for diversity may be appropriate.

Juan M. Madera et. al., (2013) Given the increase of multiculturalism into the hospitality labor force, corporate investments in providing a positive diversity climate at work have increased over the last two decades. However, few studies have focused on managers' perceived diversity climate and how their perceived diversity climate has an impact on their work experience, which is a significant gap in the literature considering that the hospitality workforce is diverse and multiracial. Therefore, the purpose of this study was to examine the effect of hotel managers' perceived diversity climate on three outcomes: role ambiguity, role conflict, and job satisfaction. Survey data were collected from 130 hotel and lodging managers. The results showed that managers who perceived a positive diversity climate also reported less role ambiguity and role conflict, but more job satisfaction. Role ambiguity and role conflict mediated the relationship between perceived diversity climate and job satisfaction.

Research Methodology

In order to address the present aim of the study, the participants were selected using non-probability sampling method. Employees of hotel industry in and around Coimbatore district were selected as population. Samples were selected randomly collected from the employees in hotel industry from Coimbatore which served as main factor for the selection of the

sampling procedure. The sample size for the present study is 270 and was collected from the employees of various star hotels in Coimbatore district. Both primary and secondary data were collected for the study. Primary data was collected using structured questionnaires. The data's collected were analyzed using SPSS software and relevant analysis and interpretation for the present study were presented below.

Analysis and Interpretation

Descriptive research is used to describe the characteristics of objects, peoples, groups, organizations, or environments. Random sampling procedure was used for the study. . The population taken into consideration for the study consists of employees of selected hotels in Coimbatore.

For the present study sample is 270, it was collected from the employees of different star hotels. The entire 270 respondents selected are from the Coimbatore district of Tamil Nadu. The sampling procedure used is random sampling. These employees are selected randomly in and around Coimbatore which served as main factor for the selection of the sampling procedure. Data were analyzed using descriptive statistics, SPSS (Statistical Package for Social Science) version 16.0. The tools used are Percentage Analysis, ANOVA, Coefficient Correlation, Regression Analysis, Descriptive statistics, Paired sample Ttest.

Length of service in current Organization by the Employees

The figure below indicates the employee's length of service in the present organization.

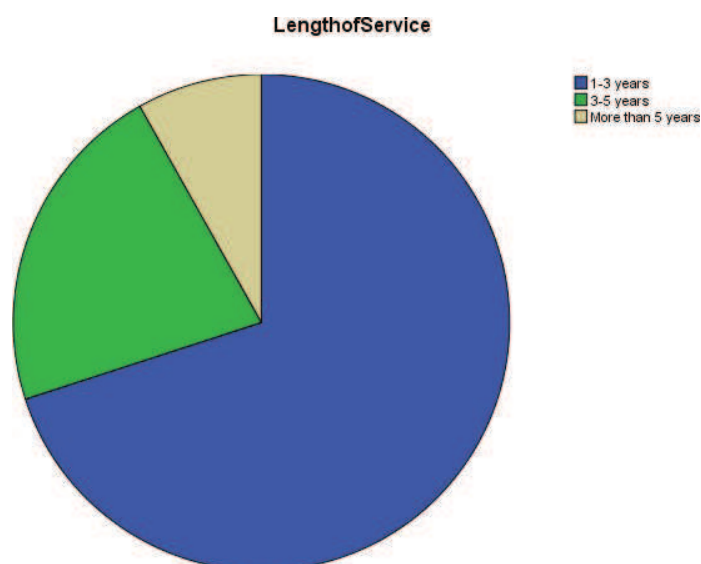


Figure.1

Employees length of service in current organization can be found in the figure.1. 70 percent of the employees are working for 1-3 year time period in the organization. 21.9 percent of the

employees serving the organization for 3-5 years. And a minimal of about 8.1 percent of other employees work in the same organization for more than 5 years. So, the maximum number of employees has 1-3 years of work experience from the hotel industry.

Table.1 Respondents view over Multi-Culturalism:

Table 1 below reveals the respondents' view towards Multi-culturalism in the workplace.

Factor	N	Minimum	Maximum	Mean
Free accommodation is provided	270	1.00	5.00	3.6926
Allowed to consume the food	270	1.00	5.00	4.0593
Culturalism affects performance	270	1.00	5.00	3.1259
Language stands as a barrier	270	1.00	5.00	3.1407
Communicating with customers is difficult	270	1.00	5.00	3.0889
Customers treat employees well	270	1.00	5.00	3.6148
Leave is provided during festivals	270	1.00	5.00	3.5630
Modern dresses give different feel	270	1.00	5.00	3.3704
Change in cuisine affects health	270	1.00	5.00	3.2704
Feels good to stay in multi-culturalism	270	1.00	5.00	4.0444
Hard to stay away from own culture	270	1.00	5.00	3.7111
Valid N (listwise)	270			

From the above table it is understood that the employees strongly agree and disagree for all the factors regarding their view over the multi-cultural organisation. The employees highly agree for the statement with the mean score of 4.05 towards consumption of food. On the same time the employees highly disagree towards the statement that deals with the effect of multi-culturalism over the performance of the employees in the hotel industry with the minimum mean score of 3.12.

Table.2. Respondents Opinion on Employee Welfare Practices in the Organization

Table 2 below represents the employees' view on various factors of employee welfare in the workplace.

Factors	N	Minimum	Maximum	Mean
Receive information regarding work	270	2.00	5.00	4.2926
Excellent follow up	270	2.00	5.00	4.0630
Importance to employee feeling	270	1.00	5.00	3.9074
Right payment method	270	1.00	5.00	4.0111
Sufficient number of holidays	270	1.00	5.00	3.8148
Annual salary hikes	270	1.00	5.00	3.9037
Valid N (listwise)	270			

From the above table it is inferred that the employees have high satisfaction and low level of dissatisfaction for the factors regarding the employee welfare practices offered by the organisation to the employees working in the hotel industry. The employees have high level

of satisfaction with the mean score of 4.2 for receiving the information regarding work on time. On the same time the employees have a low level of satisfaction towards the holidays provided by the organisation, with the minimum means core of 3.8. This shows that the employees are not given a satisfiable number of holidays during their work period. They feel neutral regarding the holidays provided to the employees.

Table 3. Quality of WorkLife

H₀ There is no difference in the level of expectation and level of perception in Quality of Work Life of the employees working in the hotel.

Factors	Mean	N	T	Sig.	Remarks
Expectation	21.1852	270	.000	.000	Rejected
Perception	19.4222				

The significance value less than 0.05, hence null hypothesis is rejected and the alternative hypothesis is accepted. This indicates that there is a statistically significant difference between the Level of Expectation and Level of Perception. From the table it is found that, the mean score of expectation is 21.185 and mean score of perception is 19.422.

Table 4. Diversity Image

H₀ There is no difference in the level of expectation and level of perception in Diversity Image of the employees working in the hotel.

Factors	Mean	N	T	Sig.	Remarks
Expectation	21.2852	270	.000	.000	Rejected
Perception	19.7185				

The significance value less than 0.05, hence null hypothesis is rejected and the alternative hypothesis is accepted. This indicates that there is a statistically significant difference between the Level of Expectation and Level of Perception. It is inferred from the above table that there is a mean difference of 1.5 between expectation and perception in diversity image of employees in hotel industry.

Table 5. Behavioural Intentions

Table 5 below presents employees behavioural intention in their work place

H₀ There is no difference in the level of expectation and level of perception in Behavioural Intentions of the employees working in the hotel.

Factors	Mean	N	T	Sig.	Remarks
Expectation	21.6037	270	.000	.000	Rejected
Perception	20.1074				

The significance value less than 0.05, hence null hypothesis is rejected and the alternative hypothesis is accepted. This indicates that there is a statistically significant difference between the Level of Expectation and Level of Perception. By comparing the mean values, it is concluded that there is a gap between the employees level of expectation and their level of perception. This implies that the hotel industries of Coimbatore couldn't meet the expectations of the employees to some extent.

Table 6 Level of Expectation and Level of Perception of Quality of Work Life with Annual Income

H₀ There is no relationship between Level of Expectation and Level of Perception with Annual Income.

Factor		Sum of Squares	F	Sig	Remarks
Level of Expectation	Between Groups	112.504	5.115	.002	Rejected
	Within Groups	1950.236			
	Total	2062.741			
Level of Perception	Between Groups	9.721	.369	.776	Accepted
	Within Groups	2338.145			
	Total	2347.867			

From the above table, it is found that the significance value is less than 0.05, hence null hypothesis is rejected and the alternative hypothesis is accepted in level of expectation. Meanwhile, the null hypothesis is accepted as the significance value for level of perception is

greater than 0.05. This indicates that there is a statistically significant difference in the mean level of expectation of different annual income groups.

Table. 7. Employee welfare Length of Service

H₀ There is no relationship between Employee Welfare with Length of Service

Factor		Sum of Squares	F	Sig	Remarks
Employee welfare practices	Between Groups	109.834	4.503	.012	Rejected
	Within Groups	3256.151			
	Total	3365.985			

It is inferred from the table 7, that the significance value is less than 0.05, hence null hypothesis is rejected and the alternative hypothesis is accepted by the employees in multicultural organisation. This indicates that there is a statistically significant difference in the mean of employee welfare practices over the annual income of employees in current organisation.

Table.8. Post Hoc for Multiple Comparison

Employee welfare practices		
(I) Length of Service	(J) Length of Service	Mean Difference(I-J)
1-3 years	3-5 years	-1.00170
	More than 5 years	-2.02790 [*]
3-5 years	1-3 years	1.00170
	More than 5 years	-1.02619
More than 5 years	1-3 years	2.02790 [*]
	3-5 years	1.02619

From the table 8 the negative mean values are rejected and the maximum positive means value in comparison of employee welfare practices with length of service of the respondents is noted.

The maximum positive value gives the difference inrespondent. The respondents with more than 5 years of experience have given more positive response to the employee welfare practices offered by the organization with the mean difference of 2.027. The test interprets that the respondents with more than 5 years of experience have high level of satisfaction in employee welfare practices of the hotel industry.

Table .9 Multi-Culturalism with Annual Income

H0 There is no relationship between Multi-Culturalism with Annual Income

Factor		Sum of Squares	F	Sig	Remarks
Multi-Culturalism	Between Groups	407.774	3.499	.016	Rejected
	Within Groups	10332.834			
	Total	10740.607			

It is understood from the above table 9, that the significance value is less than 0.05, hence null hypothesis is rejected and the alternative hypothesis is accepted by the employees in the multi-cultural organisation. This indicates that there is a statistically significant difference in the mean of multi-culturalism over the annual income of employees in current organisation.

Table.10 Post Hoc for Multi-Culturalism

Multi-Culturalism		
(I) Annual Income	(J) Annual Income	Mean Difference(I-J)
Below 1,00,000	1,00,000-3,00,000	.66400
	3,00,000-5,00,000	-.23562
	Above 5,00,000	-3.99091
1,00,000-3,00,000	Below 1,00,000	-.66400
	3,00,000-5,00,000	-.89962
	Above 5,00,000	-4.65491 [*]
3,00,000-5,00,000	Below 1,00,000	.23562
	1,00,000-3,00,000	.89962
	Above 5,00,000	-3.75529
Above 5,00,000	Below 1,00,000	3.99091
	1,00,000-3,00,000	4.65491 [*]
	3,00,000-5,00,000	3.75529

Since there is significance difference among the multi-culturalism of respondents with the annual income, the ANOVA test was performed. From the table10. The negative mean

values are rejected and the maximum positive means value in comparison of level of expectation with annual income of the respondents is noted. The maximum positive value gives the difference in respondent. The respondents with an annual income of 5,00,000 and above have given more positive response to the multi-culturalism factors than that of other income groups. The mean difference between annual income of 5,00,000 and above with other annual group is found to be 4.654. The test interprets that the respondents having annual income above 5,00,000 highly agree to all the multi-cultural factors of the hotel industry.

Table.11. Association between various factors

Correlation is used to determine the strength of the association between different variables.

	Quality of Work Life Expectation	Quality of Work Life Perception	Diversity Image Expectation	Diversity Image Perception	Behavioural Intentions Expectations	Behavioural Intentions Perception
Quality of Work Life Expectation	1 270					
Quality of Work Life Perception	.404* .000 270	1 270				
Diversity Image Expectation	.623* .000 270	.280* .000 270	1 270			
Diversity Image Perception	.479* .000 270	.444* .000 270	.605* .000 270	1 270		
Behavioral Intentions Expectations	.529* .000 270	.300* .000 270	.530* .000 270	.429* .000 270	1 270	
Behavioral Intentions Perception	.406* .000 270	.520* .000 270	.433* .000 270	.555* .000 270	.666* .000 270	1 270

**Correlation is significant.

The factors are expectation and perception of quality of work life, diversity image and behavioural intentions. From the table 11, it is understood that the association between perception of behavioural intention with expectation and perception of quality of work life is

40 percentage and 52 percentage respectively. The relationship between perception of behavioural intention and expectation of diversity image is 43 percentage, there relation between perception of behavioural intention and perception of diversity image is 55 percentage. Likewise, the relation between perception of behavioural intention and expectation of behavioural intention is 66 percentage. This shows that the expectation and perception of quality of work life, diversity image and expectation of behavioural intention are highly correlated to the perception of behavioural intention.

Findings and Suggestions

This study finds out the factors that are influencing the employee's performance in hotel industry because of the variation in culture among the employees. The majority of the respondents were male with the maximum age group of 26-35 years. When descriptive statistics is administered, the mean score of respondents view over multi-culturalism and Employee Welfare practices was high. The employees have high level of satisfaction with the mean score of 4.2 for receiving the information regarding work on time. It is also depicted that the employees highly agree for the statement with the mean score of 4.05 towards consumption of food in the hotel they work. It is found that there is a gap between the employees level of expectation and their level of perception using Paired Samples t Test. Their level of expectation is higher in comparison with level of perception. This gap implies negative gap, which infer there is a need for better improvement in reducing the gap between quality of worklife diversity image and behavioural intention to maintain a standard multi-cultural environment within the hotel industry. When ANOVA was performed, it is found that the factor Employee Welfare practices (sig. 0.012) has much significant difference with the employees having the service of 5 years above in the current hotel industry. This shows that there is a statistical significance at 5% level. When ANOVA was performed, it is found that the factor employees view over multi- culturalism (sig. 0.016) has significant difference with annual income of the respondents of the hotel industry. This shows that there is a statistical significance at 5% level. From the post hoc multiple comparison test it is found that the respondents having annual income above 5,00,000 highly agree to all the multi-cultural factors of the hotel industry.

Suggestions

Even though there is tremendous output from the diversified employees working in the hotel industry, here are few suggestions to make it little more effective. They are, Provision of variable work environment is the main agenda of employees working in hotels is concerned. Care and surrounding problems, top management approach to the employees changes the environment gradually and focusing on the requirements of the employees can be practised

to motivate and increase their value. Employees can be retained by providing essential follow up action, training, rewards and awards, performance appraisals, salary hikes which are the main factors of employee engagement in the hotel. Programmes that are attractive to all type of employees with diverse background helps in developing a good relationship between the employees can be organised by the hotel. Offering innovative services and discounts will attract the employees to work hard to obtain those extra benefits. Equality and friendly gesture from the top management lead to high satisfaction of the employees which in turn lead to high output of the hotel.

Conclusion

Coimbatore is one of the major city in Tamil Nadu and has a wide number of tourist destination, it is being acknowledged by both local and foreign travellers. As there is a high flow of population in and out of the city, large number of hotels are being constructed for the purpose of accommodation providing employment to diversified people. So, there is a need to study the cultural diversity among employees in the hotel industry of Coimbatore. This study focus on various factors influencing the cultural diversity which is of vital. The results of the study shows that the variables have significant impact over the cultural diversity between the employees. Work environment is the important factor for employees working in hotel is concerned. The organisation can also focus on factor like Employee Welfare practices and factors influencing the multi-culturalism among employees to enhance the longer engagement of employees in hotel industry. Employees togetherness can be developed by providing programmes in hotels which will in turn yield a good result in organization growth. Thus, the result of the study acts as guidance when figuring out the factors that will significantly influence the diverse employee engagement in hotel industry for future researchers.

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Adherences to Sustainable Management Criteria in the Responsible Tourism (RT) Classified Resorts of Kumarakom Tourist Destination

Anitha R., Ambeeshmon S.

University of Kerala

Abstract

As part of the Responsible Tourism initiatives; new classification criteria have been implemented in the various accommodation units of Kumarakom in May 2013. Based on the Global Sustainable tourism criteria; these criteria are developed for ensuring sustainability of the tourist destinations, and to contribute significantly to the indigenous populations of the destinations. After many hardships, the Department of tourism in association with the hospitality sector established a linkage with local community, and received measures to implement this unique classification scheme. It has been observed that the presence of healthy linkage between hospitality sector and local community contributed to enormous growth in responsible tourism. Here, the researcher describes the first section of the criteria called sustainable management criteria, and its adherences to the hospitality sector of Kumarakom tourist destination.

Key words: Global Sustainable tourism criteria, responsible tourism, sustainable management criteria

Introduction

As part of the responsible tourism initiative many classification criteria have been introduced by the Department of Tourism, Government of Kerala, for the first time in the hospitality sector of Kumarakom in the year 2013. Out of a total of 1000 points, a minimum of 500 points is required to become an RT branded hotel, a home stay, and a resort or house boat. Properties with scores between 750-1000, 600-749 and 500-599 will be classified as platinum, gold, and silver respectively. The objective of this classification is to minimise the negative impacts and maximise the benefits of the stakeholders, especially the local community through sustainable approaches of tourism. There are four sections for these criteria. In each section a minimum of 50 percent point is required for qualifying RT Brand. The first section is the, sustainable Management criteria.. Here the researcher explores the most adhered criteria of RT branded properties at Kumarakom. The other three criteria are socio cultural RT, Economic RT and Environmental RT.

Objective

To analyse the adherences of sustainable management criteria in the RT branded resorts of Kumarakom tourist destination.

Methodology

The study is descriptive in nature. The first section of the classification criteria introduced by Department of Tourism, Government of Kerala is used for the study. Survey questionnaire method is adopted. Responses from thirteen RT branded resorts are included as samples. Judgement sampling is used for data collection. The close ended questions were only analysed to study the adherences to RT criteria. The primary data were analysed using Binomial Test.

Review of literature

In 1996 the **DEAT** (Department of Environmental and Tourism Affairs) published the white paper on the development of promotion of tourism in South Africa–DEAT. This paper proposed to develop tourism in South Africa in a responsible and sustainable manner and later these initiatives transformed South Africa to become a captain in responsibility oriented environmental practices.

The white paper of the DEAT 1996 defines Responsible tourism as the “Tourism that promotes responsibility to the environment through its sustainable use, responsibility to involve local communities in the tourism industry, responsibility for the safety and security of visitors and responsible government, employees, employers, unions and local committees.” According to DEAT 1996 the key elements of Responsible tourism are to

- Ensure communities are involved in and benefit from tourism.
- Market tourism that is responsible, respecting local, natural and cultural environments.
- Involve the community in planning and decision making.
- Use local resources sustainably.
- Be sensitive to host culture.
- Maintain and encourage natural, economic, social and cultural diversity: and
- Undertake assessment of environmental, social and economic impacts as a prerequisite to developing tourism.

Most of the South African accommodation units followed this elements and it became great success. Later these principles are developed in to triple bottom approaches or the three pillars of the responsibilities. Sustainable management principles were also integrated

in to this concept and today under the threat of global warming this is also quitesessential for the well being of people and planet earth.

Goodwin (2011) says that Jost Krippendorf is the godfather of RT as he in 1987 mentioned for the first time, a new type of tourism which contained the elements of responsibility. This tourism is the one that will bring the greatest possible benefit to all the participants- travellers, the host population and the tourist business, without causing intolerable ecological and social damage.

Goodwin (2011) viewed RT as“Responsible tourism is about everyone involved taking responsibility for making tourism more sustainable”.

RT Classification Criteria

Here the first section of the criteria- ie. Sustainable Management Criteria is only studied to understand the adherences of RT classification scheme in the RT branded hotels.

	Section One		Marks
	Sustainable Management Criteria		200
1.1	Sustainable Management Plan		40
1.1.1	The sustainable Management Plan is communicated to Management and staff	1. Yes	20
		2. No	0
1.1.2	The Sustainability Management Plan is communicated to Clients	1. Yes	10
		2. No	0
1.1.3	Plan is integrated at decision-making level, includes monitoring, analysis/evaluation and adaptive management	1. Yes	10
		2. No	0
1.2	Compliance with Rules and Regulations		30
1.2.1	Records available on the compliance of all relevant legislation and regulations	1. Yes	15
		2. No	0
1.2.2	Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates	1. Yes	15
		2. No	0
1.3	Customer satisfaction is measured and corrective action		20
1.3.1	Customer Satisfaction is measured using a feedback form- Proof of tools and systems	1. Yes	10
		2. No	0
7	A follow up mechanism exist to	1. Yes	10

	implement corrective action taken in at least 3 cases)	2. No	0
1.4	Realistic promotional materials & service delivery		20
1.4.1	Quality of Marketing Materials are high in terms of (1) Completeness (2) Accuracy (3) Addressing Social. Environmental concerns and Local community benefits (4)Effective communication	1. All Four	20
		2. Any three	15
		3. Any Two	10
		4. Any one	5
1.5	Information on & Interpretation of nature and local culture		30
1.5.1	Company has an interpretation program run by a Naturalist, Sociologist, or a designated, trained person on local attractions.	1. Yes	10
		2. No	0
1.5.2	Company has delivery mechanisms for interpretations (collaterals, tour guide, information kiosk/desk)	1. Yes	5
		2. No	0
1.5.3	Number of staff training programme conducted on information and interpretation	1. Yes	5
		2. No	0
1.5.4	Interpretation materials are accurate	1. Yes	5
		2. No	0
1.5.4	Whether local inhabitants lead or guide customers	1. Yes	5
		2. No	0
1.6	Personnel Training & management (Annual)		60
1.6.1	Mechanism for assessing training needs	1. Yes	5
		2. No	0
1.6.2	No. of Training provided to management staff only	1.2. No's more	10
		2.1. No	5
		3. Nil	0
1.6.3	No. of Training provided to management members only	1.2. Nos or more	10
		2.1.No	5
		3.Nil	0
1.6.4	No. Of orientation programmes provided to temporary staff members	1. 2 Nos or more	10
		2. 1 No	5
		3. Nil	0
1.6.5	Percentage of staff covered under the training programs	1. 75-100%	10
		2.50-75%	7.5
		3.25-50%	5
		4. <25%	0
1.6.6	Elements of sustainability are	1. Yes	10

	covered in the training module	2. No	0
1.6.7	Mechanism for assessing post training services	1. Yes	5
		2. No	0
		Total	200

Source: keralatourism.org

Out of the above 19 criteria the close-ended questions were subjected to binomial test and those criteria which have been showing a significant value at 5 percent level of significance are explained below. The criteria number is indicated against the criteria statements in the box.

1. Sustainability Management plan is communicated to the management and staff: The proportion of the sustainability plan is communicated to management and staff. The proportion index is found 1.00 which means all the respondents were informed about the plan. This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. Table 1 gives the results.

Table 1

Sustainability management plan is communicated to management and staff

Criteria 1.1.1	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
The sustainability management plan is communicated to management and staff.	Yes	13	1.00	.50	.000
	No	0	0		
	Total	13	1.00		

Primary Data

2 Sustainability Management plan is communicated to clients: The proportion of the sustainability plan is communicated to clients. The proportion index is found 0.85 which means 85 percent of the respondents were informed about this indicator. (The remaining 15 percent is not adhered to this criterion). This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. The result is depicted in table 2

Table 2**Sustainability Management plan is communicated to clients**

Criteria 1.1.2	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Sustainability plan is communicated to clients:	Yes	11	0.85	.50	.000
	No	2	0.15		
	Total	13	1.00		

Primary Data

3. Records available on the compliance of all relevant legislation and regulation: The proportion of the records available on the compliance of all relevant legislation and regulation is found 1.00 which means all the respondents were informed about the plan. This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. Table 3 gives the result.

Table 3**Records available on the compliance of all relevant legislation and regulation**

Criteria 1.2.1	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
The Records available on the compliance of all relevant legislation and regulation.	Yes	13	1.00	.50	.000
	No	0	0		
	Total	13	1.00		

Primary Data

4. Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates: The proportion of whether the project satisfies all the conditions stipulated in compliance with the permits/certificates, is found 1.00 which means all the respondents were informed about the plan. This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. The result is presented in table 4.

Table 4.

Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates?

Criteria1.2.2	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates	Yes	13	1.00	.50	000
	No	0	0		
	Total	13	1.00		

Primary Data

5. Customer satisfaction is measured using a feedback form-proof of tools and systems

The proportion of the, customer satisfaction is measured using a feedback form-proof of tools and systems. The proportion index is found 0.85 which means 85 percent of the respondents were informed about this indicator. (The remaining 15 percent is not adhered to this criterion). This proportion is found significant at 5 percent level of significance. ie. p value less than 0.05. Table 5 shows the result.

Table 5

Customer satisfaction is measured using a feedback form-proof of tools and systems

Criteria 1.3.1.	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Customer satisfaction is measured using a feedback form-proof of tools and systems,	Yes	11	0.85	.50	0.002
	No	2	0.15		
	Total	13	1.00		

Primary Data

6. A follow up mechanism exist to implement corrective action plan where needed. (To be supported with proof of action taken in at least 3 cases): The proportion of the follow up mechanism exist to implement corrective action plan where needed. (To be supported with proof of action taken in at least 3 case), is found 0.85 which means 85 percent of the respondents were informed about this indicator.

(The remaining 15percent is not adhered to this criterion.) This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. Table 6 gives the result.

Table 6

A follow up mechanism exist to implement corrective action plan where needed

Criteria 1.3.2.	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
A follow up mechanism exist to implement corrective action plan where needed. (To be supported with proof of action taken in at least 3 cases.	Yes	11	0.85	.50	0.002
	No	2	0.15		
	Total	13	1.00		

Primary Data

7. Elements of sustainability are covered in the training module: The proportion of the elements of sustainability is covered in the training module is found 0.85 which means 85 percent of the respondents were informed about the plan. The remaining 15 percent is not adhered to this criterion. This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. Table 7 gives the result.

Table 7**Elements of sustainability are covered in the training module**

Criteria 1.6.6.	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Elements of sustainability are covered in the training module	Yes	11	0.85	.50	0.022
	No	2	0.15		
	Total	13	1.00		

Primary Data

Findings

Out of the 15 close ended questions 7 criteria were found to be well adhered by all of the RT branded properties. Two of the criteria were did not give a positive result and the rest 6 criteria are found to be neither responded or not implemented. Nearly 50% of the criteria are successfully followed by the RT branded units. This is found to be useful in addressing the sustainable issues of the accommodation sector.

Conclusion

When we compare a RT practicing accommodation unit with a non RT practicing unit it was found that the RT classification criteria is successful in mitigating negative impacts and maximizing positive impacts. It is equally beneficial for all the stake holders of tourism industry. The community and the tourists are equally benefited by these practices along with other stake holders. It has been also useful in maintaining the indigenous knowledge and culuture. Initially only 13-16 hotels come under this branding. Today there are more than hundred hotels across Kerala State, under the RT classification scheme excluding houseboats and home stays.

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Biographies of the Authors**Anitha.R**

Published eight national and 3 international papers. Area of interest is sustainable initiatives and related activities. Working as Assistant Professor at Sree Narayana Arts and Science College, Kumarakom, Kerala.

Dr.Ambeeshmon.S

Working as Assistant Professor, Institute of Management in Kerala, University of Kerala. He has published 10 papers at International level and 12 papers at National level.

A Study on Effect of Determinants of Promotion of Tourism on Sustainable Development of Tourism in Madurai District, Tamil Nadu

R.Kannan

Madurai Kamaraj University

Abstract

Nowadays, sustainable development of tourism is a major concern for Indian tourism sector as it attempts to develop tourism with environment and ecology orientation and it is popularized among tourists through different promotional strategies, at the same time, promotion of tourism is determined by various elements. Uniqueness, amenities, price and information are determinants of promotion of tourism. Significant difference is witnessing in determinants of promotion of tourism among demographics of tourists. Uniqueness, amenities and information have significant and positive effect on sustainable development of tourism, while, price has significant and negative effect on sustainable development of tourism. Thus, tourism places should keep their beauty, pleasant atmosphere, cultural values and legacy and the stake holders must improve transport, communication, entertainment, parking and sanitation facilities.

Key Words: Determinants, Promotion, Sustainable Development, Tourism

1. INTRODUCTION

Tourism sector in India is experiencing radical changes in the last 20 years and considerable number of tourists are visiting various tourist places across India. Government of India takes series of measures for promoting tourism and branding of tourist places and India will become most attractive tourism destination in the world in near future (Hannam and Diekmann, 2010). Indian tourism sector is anticipated to grow at 8.20 per cent per annum from the years 2017 to 2025 and it occupies in the third place in global tourism map in the next few years and it generates 50 jobs directly and 90 jobs indirectly per every one million rupees invested in tourism sector (Vijayakumar, 2009).

Promotion of tourism means careful planning of various activities carried out for popularizing tourism places, products, services and features by using different promotional measures and it requires high level of knowledge and skills to response highly dynamic changes in tourism marketing environment (Shukla and Kumar, 2016). In addition, cultural, social, economic and political aspects are also determining promotion of tourism and its related activities (Lafferty and Fossen, 2001).

Nowadays, sustainable development of tourism is a major concern for Indian tourism sector as it attempts to develop tourism with environment and ecology orientation. The sustainable development of tourism is mainly depending on preservation of environmental resources, local culture and communities (Uniyal and Sharma, 2013) and it is popularized among tourists through different promotional strategies and programmes, at the same time, promotion of tourism is determined by various elements. Therefore, it is important to study effect of determinants of promotion of tourism on sustainable development of tourism in Madurai district.

2. REVIEW OF LITERATURE

Jaro and Adamu (2011) found that transportation facility was main contributor of promotion of tourism and security, facilities and social values were also affected promotion of tourism effectively. Zahra (2012) concluded that reputation, social and cultural values, access to products and services were significantly affecting promotion of tourism.

Arionesei and Ivan (2013) revealed that effective public relation, efficient advertisements and direct marketing were promoting tourism among potential tourists. Salehi and Farahbakhsh (2014) indicated that brochures, pamphlets and advertisements through different media were promoting tourism effectively.

Milenkovska et al (2015) showed that heritage values, monuments, printed information on different languages, cultural festivals and traditional food item were used for promotion of tourism. Dogra(2016) found that advertisements in different forms of media, online sources and festivals were influencing promotion of tourism.

Koolrojanapat (2017)concluded that beauty, entertainment, hotels, safety and cultural values were significantly affecting promotion of tourism. Shankar(2018) revealed that availability of information, heritage values, facilities and reputation of tourist place were influencing tourism promotion among tourists.

3. OBJECTIVES OF THE STUDY

1. To discover determinants of promotion of tourism.
2. To scrutinize difference in determinants of promotion of tourism among demographics of tourists.
3. To evaluate effect of determinants of promotion of tourism on sustainable development of tourism.

4. HYPOTHESES OF THE STUDY

1. There is no significant difference in determinants of promotion of tourism among demographics of tourists.
2. There is no significant effect of determinants of promotion of tourism on sustainable development of tourism.

5. METHODOLOGY

The present study is conducted in Madurai district. Tourists are chosen by applying convenience sampling method and data are gathered from 400 tourists through questionnaire. Percentages are used to examine demographics of tourists. An exploratory factor analysis is employed to discover determinants of promotion of tourism. t-test and Analysis of Variance (ANOVA) test are done to scrutinize difference among determinants of promotion of tourism and demographics of tourists. Multiple regression analysis is carried out to evaluate effect of determinants of promotion of tourism on sustainable development of tourism.

6. RESULTS AND DISCUSSION

6.1. DEMOGRAPHICS OF TOURISTS

The demographics of tourists are given in Table-1. The results clarify that 59.50 per cent of tourists are male, while, 40.50 per cent of them are female and 33.25 per cent of them are falling to age category of 31– 40 years, while, 16.50 per cent of them are falling to age category of 51 – 60 years. The results explain that 30.75 per cent of them are possessing undergraduation, while, 20.00 per cent of them are possessing higher secondary and 36.00 per cent of them are receiving monthly income of Rs.25,001 – Rs.35,000, while, 14.50 per cent of them are receiving monthly income of Rs.45,001 – Rs.55,000 and 80.50 per cent of them are married, while, 19.50 per cent of them are unmarried.

Table-1. Demographics of Tourists

Demographics	Number of Tourists	Percentage
Gender		
Male	238	59.50
Female	162	40.50
Age Category		
21 – 30 Years	92	23.00
31– 40 Years	133	33.25
41 – 50 Years	109	27.25
51 – 60 Years	66	16.50
Education		
Higher Secondary	80	20.00
Diploma	89	22.25
Under Graduation	123	30.75
Post Graduation	108	27.00
Monthly Income		
Rs.15,001 – Rs.25,000	69	17.25
Rs.25,001 – Rs.35,000	144	36.00
Rs.35,001 – Rs.45,000	129	32.25
Rs.45,001 – Rs.55,000	58	14.50
Marital Status		
Married	322	80.50
Unmarried	78	19.50

6.2. DETERMINANTS OF PROMOTION OF TOURISM

To discover determinants of promotion of tourism, an exploratory factor analysis is employed and the results are given in Table-2. Value of KMO test (Kaiser-Meyer-Olkin) for measuring adequacy of sampling is 0.872 and Chi-Square value for Bartlett's test of Sphericity is 0.0068 that is significant at one per cent level disclosing method of the factor analysis is apt. Four determinants obtained have 70.81 per cent of variations on variables considered for the study

Table-2. Determinants of Promotion of Tourism

Determinant	Variables	Rotated Factor Loadings	Eigen Value	% of Variation	Determinant Name
I	Beauty	0.71	3.27	26.12	Uniqueness
	Atmosphere	0.67			
	Nature of diversity	0.69			
	Local communities	0.70			
	Cultural values	0.68			
	Attraction	0.66			
	Legacy	0.72			
II	Transport	0.67	1.68	20.25	Amenities
	Communication	0.65			
	Entertainment	0.73			
	Sanitation	0.64			
	Parking	0.70			
	Shopping	0.62			
III	Rent for room	0.69	1.33	14.36	Price
	Cost of food	0.63			
	Cost of drinks	0.68			
	Cost of additional services	0.61			
IV	Pamphlets	0.67	1.05	10.08	Information
	Brochure	0.65			
	Advertisement	0.68			
	Cumulative % of Variation	-	-	70.81	-
	Cronbach's Alpha	-	-	-	0.87

Principal Component Analysis

Varimax Rotation

Converged in 9th iterations

Determinant-I consists of beauty, atmosphere, nature of diversity, local communities, cultural values, attraction and legacy. Thus, this determinant is described as **Uniqueness**.

Determinant-II includes transport, communication, entertainment, sanitation, parking and shopping. Hence, this determinant is stated as **Amenities**.

Determinant-III comprises of Rent for room, Cost of food, Cost of drinks and Cost of additional services. So, this determinant is labeled as **Price**.

Determinant-IV encompasses pamphlets, brochure and advertisement. Therefore, this determinant is labeled as **Information**.

Cronbach's Alpha value is 0.87 explicating that each measure has acceptable level internal consistency. Uniqueness, amenities, price and information are determinants of promotion of tourism.

6.3. DEMOGRAPHICS OF TOURISTS AND DETERMINANTS OF PROMOTION OF TOURISM

To scrutinize difference among determinants of promotion of tourism and demographics of tourists, t-test and ANOVA test are used and the results are given in Table-3.

Table-3. Difference among Determinants of Promotion of Tourism and Demographics of Tourists

Particulars	t-Value / F-Value	Sig.
Gender and Determinants of Promotion of Tourism	5.116** (t-value)	.000
Age Category and Determinants of Promotion of Tourism	8.050** (F-value)	.000
Educational and Determinants of Promotion of Tourism	5.814** (F-value)	.001
Monthly Income and Determinants of Promotion of Tourism	7.962** (F-value)	.000
Marital Status and Determinants of Promotion of Tourism	5.619** (t-value)	.000

** Significant at 1% per cent level

The t-values and F-values are statistically significant revealing that significant difference is prevailing in determinants of promotion of tourism among demographics of tourists at one per cent level. As an outcome, the null hypothesis is not accepted.

6.4. EFFECT OF DETERMINANTS OF PROMOTION OF TOURISM ON SUSTAINABLE DEVELOPMENT OF TOURISM

To evaluate effect of determinants of promotion of tourism on sustainable development of tourism, multiple regression analysis is applied and the results are given in Table-4. R^2 is 0.59 and adjusted R^2 is 0.57 and these values imply that the regression

model has good fit and 57.00 per cent of variation in sustainable development of tourism is shared by determinants of promotion of tourism. F-value of 24.695 is significant demonstrating that the regression model is significant at one per cent level.

Table-4. Effect of Determinants of Promotion of Tourism on Sustainable Development of Tourism

Determinants of Promotion of Tourism	Regression Coefficients	t-value	Sig.
Intercept	1.102**	11.845	.000
Uniqueness (X_1)	.371**	8.974	.000
Amenities (X_2)	.368**	8.102	.000
Price (X_3)	-.325**	7.286	.000
Information (X_4)	.354**	7.630	.000
R^2	0.59	-	-
Adjusted R^2	0.57	-	-
F	24.695	-	.000

** Significant at 1 % level

Uniqueness, amenities and information have significant and positive effect on sustainable development of tourism, while, price has significant and negative effect on sustainable development of tourism at one per cent level. Consequently, the null hypothesis is not accepted.

7. CONCLUSION

The above results explicate that uniqueness, amenities, price and information are determinants of promotion of tourism. Significant difference is witnessing in determinants of promotion of tourism among demographics of tourists. Uniqueness, amenities and information have significant and positive effect on sustainable development of tourism, while, price has significant and negative effect on sustainable development of tourism. Thus, tourism places should keep their beauty, pleasant atmosphere, cultural values and legacy and the tourism providers must improve transport, communication, entertainment, parking and sanitation facilities. Tourism places should ensure reasonable price for hotel rooms, food, drinks and additional services and they must promote themselves through distribution of brochure and pamphlets and they should advertise well to reach various segments of potential tourists.

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Augmenting Kerala's Medical Tourism for Senior Citizen- A Perspective on the Scope of Ayurveda

Anooja Thomas K., Rose Mary Francis and Magna Raison

CMS College, St. Teresa's College

Abstract

A notable trend in global tourism has been the popularity of health care holidays. The tourism industry in India is also making effort to cater to this need. Medical tourism which is the practice of travelling across international borders to obtain health care and medical treatment is slowly catching momentum in Kerala despite less conscious efforts from the authorities. The study becomes relevant as Kerala is an established tourist destination in current scenario wherein a combination of factors has led to the increase in popularity of medical tourism. The study explore the scope of Ayurveda in promoting medical tourism with the objectives to study the preference of Ayurveda that too in Kerala, as a field of 'medicine for wellness and rejuvenation' by tourists especially senior citizen.

The study was conducted in a phased manner in Kochi a world famous tourist destination of Kerala, with a number of famous Ayurvedic centres; using Case study technique. An in depth study of five Ayurvedic Treatment Centres, along with interviews on 40 foreign tourists who are beneficiaries of Ayurveda helped in retrieving relevant data on institutions, foreigners treated, services offered for medical tourists etc. The survey among beneficiaries revealed their age, native, income strata and occupation along with frequency and purpose of their visits, etc. Their opinion about the reasons for opting Kerala as destination for medical treatment was also identified.

Keywords: *Medical Tourism, Ayurveda, Healthcare Destination, Rejuvenation Therapy, Senior Citizen*

INTRODUCTION

World Tourism Organisation defines 'Tourism as which comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business or other purposes'. Health holidays based on Ayurvedic therapy is popular in Kerala which has a fairly ancient Ayurvedic medicinal system, with natural & herbal medicine. Kerala is a world tourism destination and has an immense

potential to develop the scope of medical tourism in the country. Tour operators & tourism industry of Kerala has sensed its potential for fitness and holiday packages and is trying to tap this market. Introduction of Ayurveda as a tourist product has resulted in the vertical growth of income and revival of this indigenous system of medicine. The new tourists who seek adventure in the unknown including different culture, cuisine, lifestyle, health systems etc, has popularized the Ayurvedic health holidays of Kerala all over the world.

Kerala's equable climate, natural abundance of forests with a wealth of herbs and medical plants are a key to the success of Ayurvedic treatments of Kerala. There are various Ayurvedic treatments, the duration of which will vary making it essential for the foreigners who undergo these treatments to opt for extended stay. The 'Karkidaka' treatment offered during monsoon could be marketed as an USP especially among elderly foreigners along with the rejuvenating Kayakalpa Chikithsa (treatment).

Medical Tourism in this study is operationally defined as the "practice of traveling across international borders to obtain health care and medical treatments".

RELEVANCE OF THE STUDY

Medical tourism in Kerala is slowly catching momentum despite less conscious efforts from the Government departments. It was recognized as an opportunity by some sectors, particularly the Ayurveda sector which took some collective effort to convert Kerala as a hub of Ayurveda treatment. A combination of many factors has led to the increase in popularity of medical tourism in Kerala and it is interesting to find out the role of Ayurveda in this.

The study becomes relevant as Kerala is an established tourist destination in current scenario. Ayurveda is also very much popular in Kerala and is recognized as one of the best systems for wellness and rejuvenation. The alternative medicine sector led by Ayurveda has been showing a vibrant growth in recent years pointing to the fact that there is a tremendous scope for medical tourism especially among senior citizen who yearn much for leisure activities.

Aim: To explore the scope of Ayurveda in promoting medical tourism among elderly tourists

Objectives

- To review of functioning of a few prominent Ayurvedic institutions that promotes medical tourism among elderly tourists.
- To identify the facilities provided by the Ayurvedic institutions in attracting medical tourists especially elderly.
- To identify the measures taken by the Ayurvedic institutions in promoting medical tourism.

- To study the preference of Ayurveda as a field of 'medicine for wellness' by tourists.
- To identify the factors that attracts the tourists in selecting Kerala as a medical destination.

RELATED STUDIES

The study on 'Medical Tourism in Kerala—Challenges and Scope' by Cherukara, Joseph & Manalel, James (2008) "Covers the scope of Medical Tourism industry,.....the efforts that the Tourism Department has taken for the growth of Medical Tourism and the effects of these efforts in the growth of Medical Tourism. The high relevance of Medical Tourism is because of the low cost and compatibility of the medical systems in comparison with their home countries where they faced exorbitant fees, especially for patients from the West and the Middle East who have begun looking forward to India and Kerala."

According to Herrick D (2007), the age old health care system (Ayurveda) is very popular for curing various kinds of ailments, like metabolic and stomach problems, nervous disorders, urinary and respiratory troubles. This is also known to promote rejuvenation, beautification and relief from ill effects of chemotherapy, all of which is beneficial to elderly patients.

In an editorial in the *Journal of The Indian Academy of Geriatrics*, Vol. 12, No. 2, June, 2016 on 'Long-Term Care for Elderly: An opportunity for Medical Tourism' Arvind Mathur comments on the opportunities for developing medical tourism for long-term care in our country. He mentions that there is a possibility of raising a new cadre of human resources as Geriatric caregiver workforce in India as it provides an advantage of spirituality (yoga, meditation) and anti-ageing intervention with alternative medicine system (AYUSH) and that we are on the forefront of information technology possibility of using mobile technology improves the quality of care and ease of communication for the visitors. (http://www.jiag.org/jiagpdf/1_editorial_4)

RESEARCH DESIGN

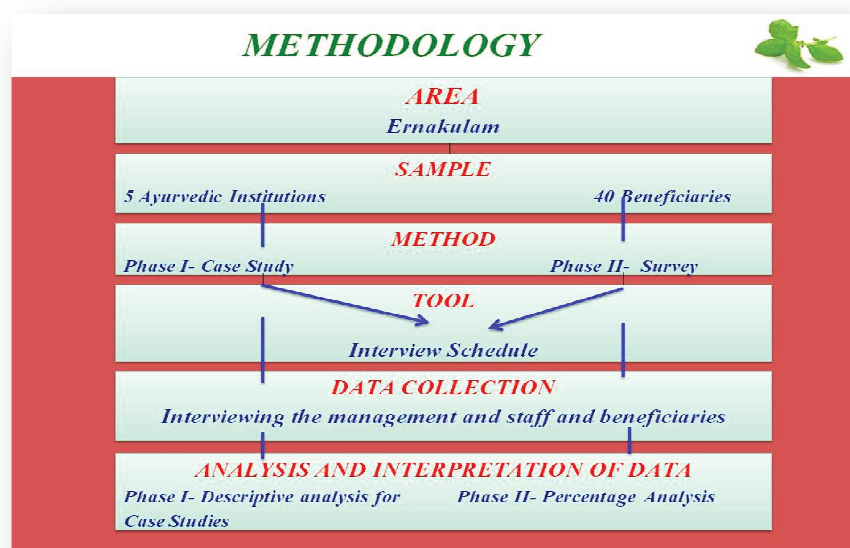


Fig No 1: Procedure of the Research study

MAJOR FINDINGS OF THE STUDY

❖ **FINDINGS OF PHASE 1: CASE STUDY OF AYURVEDA INSTITUTIONS**

PHASE-1 CASE STUDIES

Given below are the 5 Ayurvedic institutions are selected for the case study

- Arya Vaidya Sala (AVS) Kottakkal, Thrikkakkara (PO) Kochi
- Cochin Arya Vaidya Sala Eroor, Tripunithura, Ernakulam.
- Punarnava Ayurveda Hospital Pvt. Ltd, Cochin, Kerala.
- Sreedhary Ayurvedic Centre Near Cochin International Airport, Nedumbassery, Mekkavu, Vappalassery (PO)
- Sudhakaram Ayurveda Hospital & Study Centre, Kadamattom, Kolencherry, Ernakulam

Fig No 2: Ayurvedic Institutes cooperated in the study

- The services offered for medical tourists along with the treatment in the selected institutions are: travel arrangement, arrangement of accommodation, entertainment facilities like TV and music, cultural programs like Kadhakali and Chakyarkooth. The centres also made provision for local tour; pilgrim center visits, arrangements for shopping, communication facility, translators, prayer rooms, food, and safekeeping of belongings.
- Marketing was mostly done through internet and tie ups with travel agents and insurance companies to canvas tourists from abroad. But they also claimed that most the patients from abroad repeatedly came and promoted the centres among their friends.

❖ **FINDINGS OF PHASE 2: BENEFICIARY SURVEY**

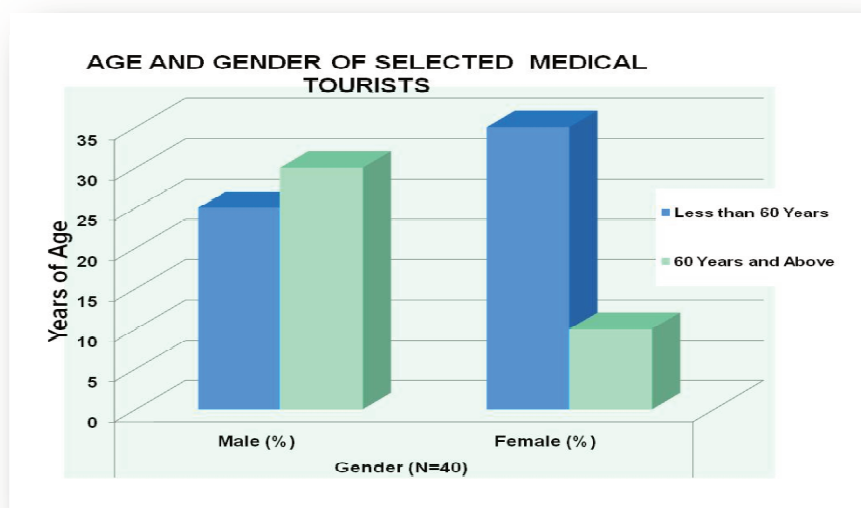


Fig No 3: Age and Gender of Medical Tourists

Nearly an equal number of males and females partook in the survey. Most of the males were above 60 years whereas most of the females belonged to the younger category.

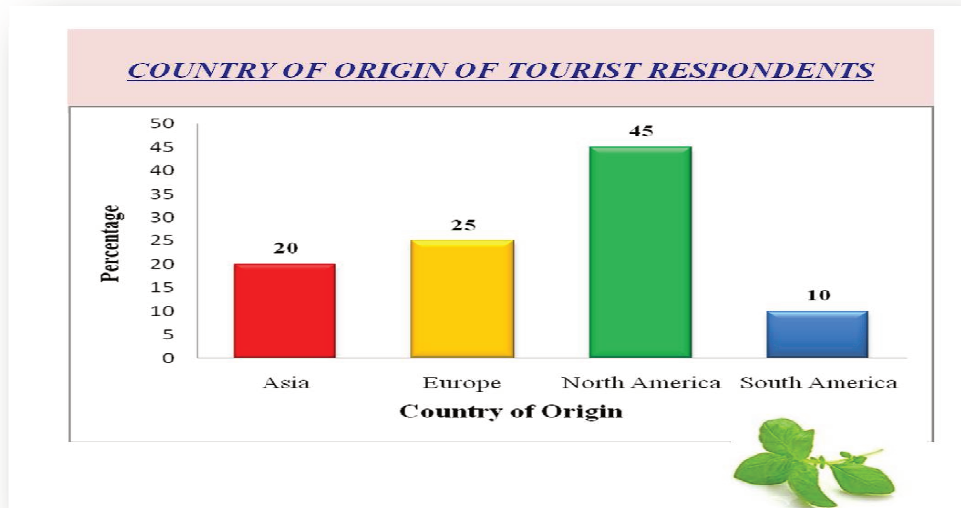


Fig No 4 : Country of Origin of foreign patients

Nearly half of the subjects belonged to North America (Canada, USA). And the rest were from Europe, Asia and South America.

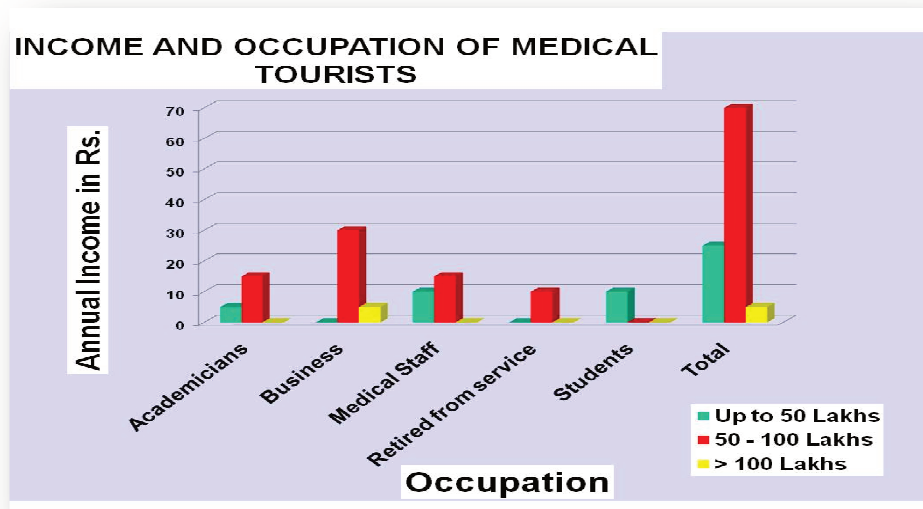


Fig No 5: Annual Income and Occupation of Medical Tourists

Most of the elite class were either retired or business group belonging to the age group of above 60. These elderly were the prospective clients of medical tourism.

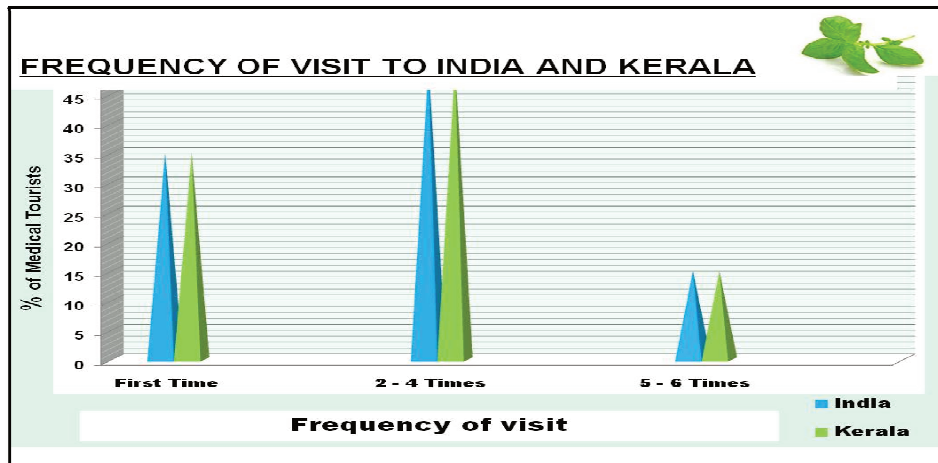


Fig No 6: Frequency of visit to Kerala

Half of the subjects have visited India & Kerala more than twice; mostly for medical purposes.

Average Days and Amount Spent for Ayurvedic Treatment

Particulars	In Kerala (N=40)	For Treatment (N=40)
Days Spent	33 Days	21 Days
Amount Spent	3 lakhs 37 thousand	1 lakhs 60 thousand

Fig No 7: Average days and amount spent

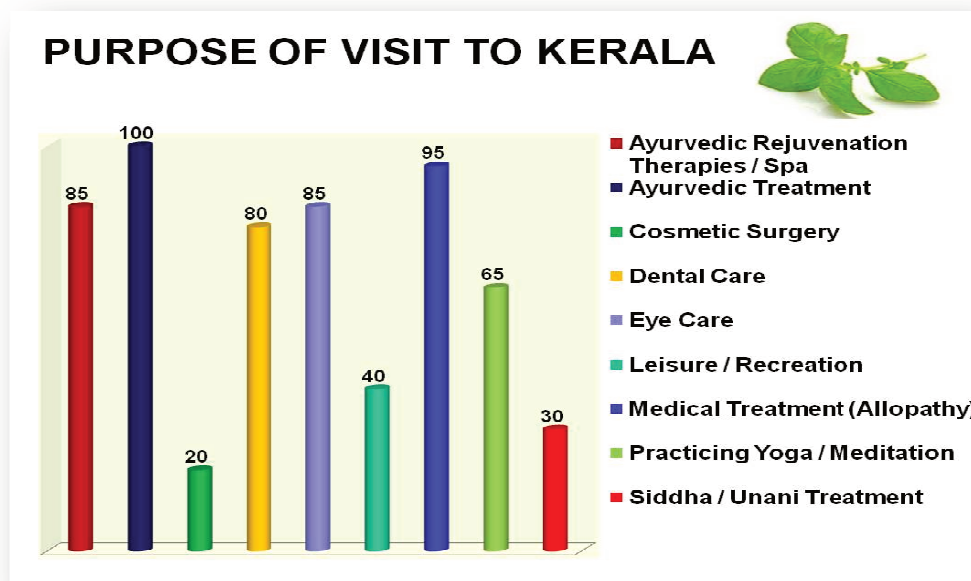


Fig No 8: Purpose of Visit to Kerala

Nearly 3/4th of the respondents always visited to Kerala for medical treatment specially Ayurvedic. Treatments mostly included ayurvedic rejuvenation therapies and spa. All the respondents preferred Ayurvedic Hospitals for the rejuvenation therapies and not any other services providers.

- Almost all (95%) the Tourists interviewed had Ayurvedic treatments from Kerala alone.

REASONS FOR CHOOSING KERALA

REASON FOR CHOOSING KERALA FOR HEALTHCARE TREATMENTS	
Reasons	
<input type="checkbox"/>	Popularity of Ayurvedic rejuvenation therapies / spa
<input type="checkbox"/>	Popularity of Ayurvedic treatments
<input type="checkbox"/>	High costs of treatment in home state
<input type="checkbox"/>	High quality healthcare at low cost
<input type="checkbox"/>	Learning / practicing yoga, meditation
<input type="checkbox"/>	Possibility of combining tourism with healthcare treatment

Fig No 9: Reasons for choosing Kerala for Treatment

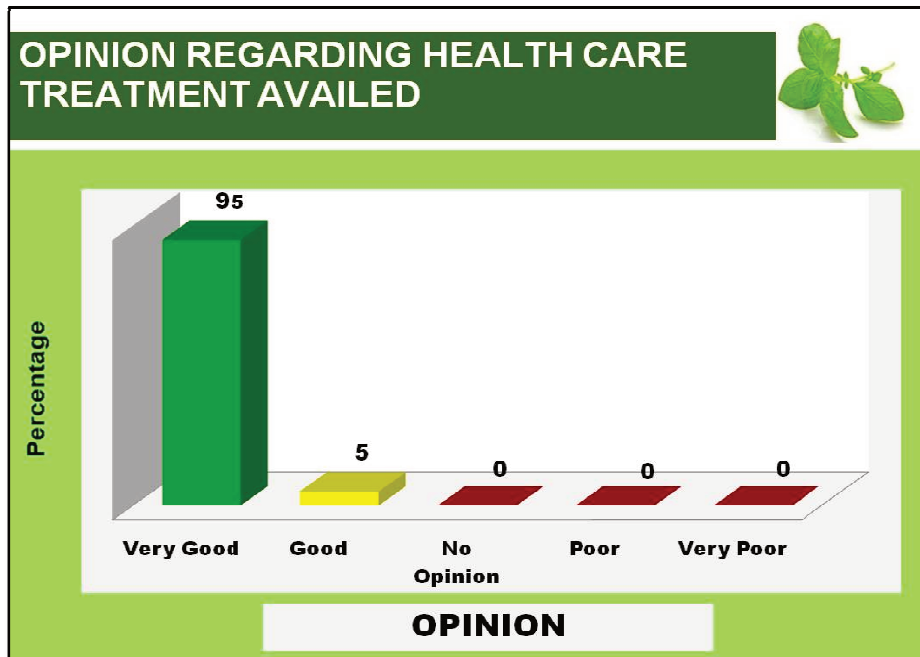


Fig No 10: Opinion regarding Healthcare treatment availed

Significantly almost all respondents had very good opinion regarding health care treatment especially Ayurveda.

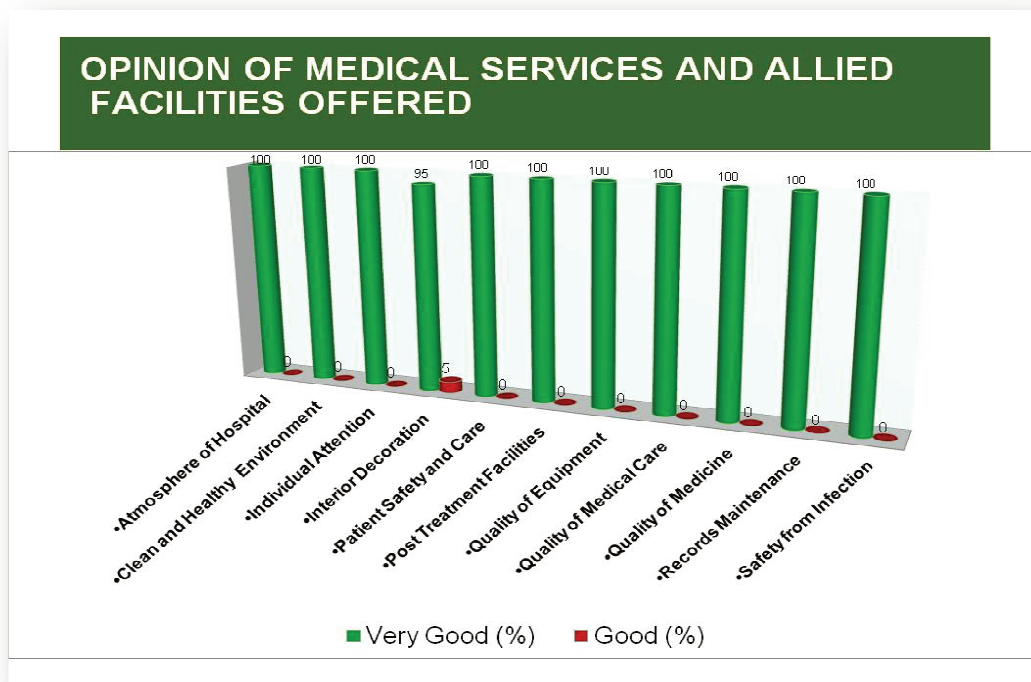


Fig No 10: Opinion on Medical and Allied Services offered at the Centres

All the respondents had very good opinion about the medical services offered by medical tourism provider. A few opined that Interior Décor need to be improved.



Fig No11: Opinion on Hospitality Services offered at the Centres

All of the respondents had very high opinion about hospitality services provided by medical tourism institution such as airport pick-up, food and accommodation and reception.

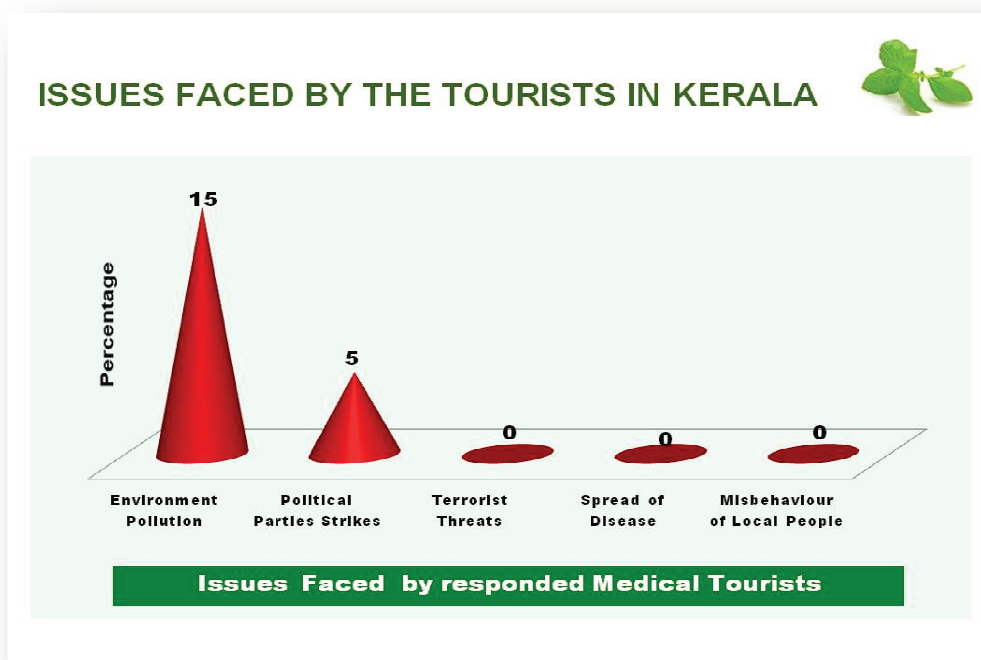


Fig No 12: Issues faced in Kerala

Some of the respondents voiced that environment problems such as pollution and political strikes are major difficulties they faced in Kerala. None of them had any complaints regarding the treatment or the demeanour of the staff of Ayurvedic institute. All the respondents had high regard of the services offered by the institutions especially the behaviour of the staff and medical treatments offered.



Fig No 13: Future Plans of Medical Tourists

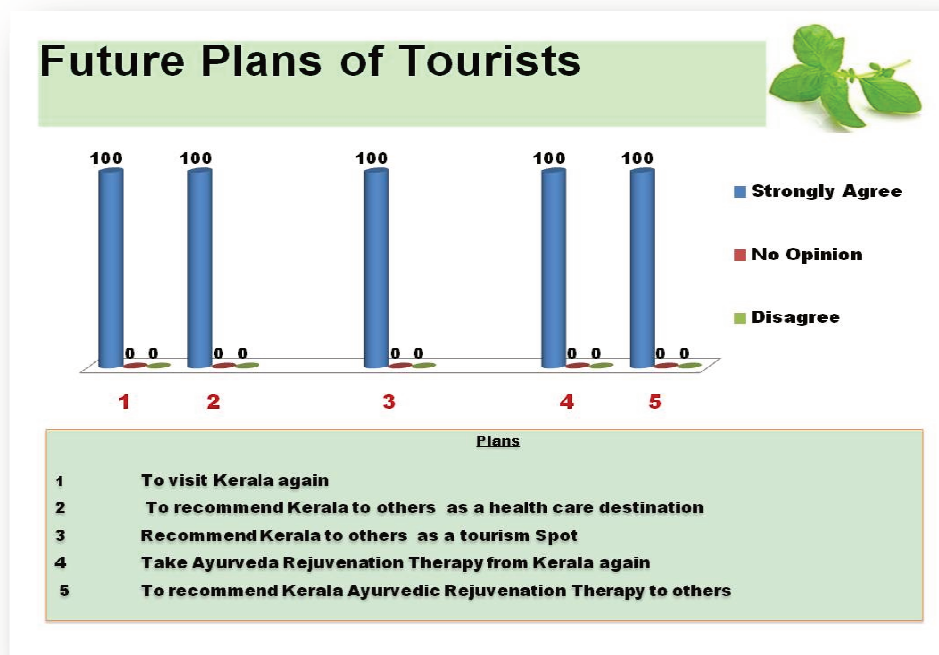


Fig No 14: Opinion regarding Future Plans of Medical Tourists

- This study also evaluated the service quality of health tourism providers of Kerala which was highly appreciated by the beneficiaries as was the claim of the Ayurvedic Institutions studied.

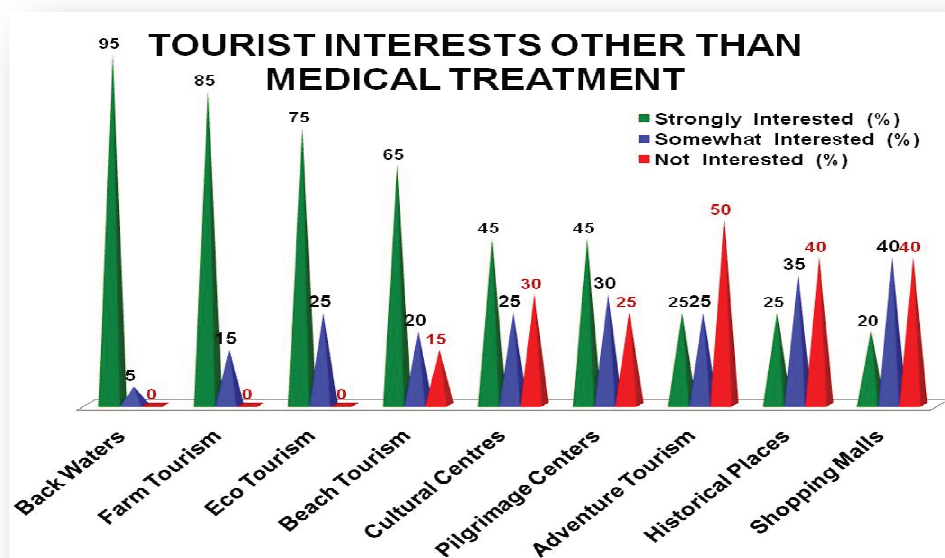


Fig No 15: Other Interests during Medical Tourists

Almost all were interested in Backwaters, followed by Nature, Eco and Beach Tourism. This will bring in additional income to the state.

CONCLUSION

Kerala has enormous potential to emerge as one of the world's best health tourism destinations. It is capable of becoming a haven for 'wellness tourists' by highlighting holistic treatments such as Ayurveda, Siddha, spa, yoga, meditation, naturopathy etc. Kerala's socio-cultural conditions provide a rich soil that helps in healthy growth & flourish of Ayurveda which attracts tourists to frequent this God's Own Country. If only there is ample promotion measures from Government these Ayurvedic centres could go forth with further expansion and inclusion of value added services which will again boost the tourist's influx to Kerala. Satisfied health tourists recommend Kerala as a health tourism destination to their near & dear ones, which is a word of mouth promotion, free of cost. This is also influenced by the health tourism providers; hence they should also try to maintain service quality. Another important aspect is that many senior citizens who have ample dispensable income and leisure time in their hands are frequenting Kerala for Ayurvedic Rejuvenation Therapy and this could be further exploited as a means to generate foreign currency and increase nation's income.

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A Study on Factors Affecting Turnover Intention of Employees of Luxury Hotels in Kochi, Kerala

Mathew.T.P, R. Kannan

Madurai Kamaraj University

Abstract

In hotel sector, employees are main part of guest's experience and higher level of turnover intention among employees creates a very serious problem in functioning of hotels and it also affects development of tourism activities. The findings of this study reveal that work atmosphere, inter-personal relation, complexity and job involvement are factors affecting turnover intention of employees of luxury hotels. Significant difference exists between demographics of employees and factors affecting their turnover intention in luxury hotels. In order to reduce turnover intention of employees, luxury hotels should improve their work atmosphere through providing adequate equipments and tools, power to make decision and sharing various work among their employees and making regular assessment of their work. Luxury hotels must give support to their managers and employees and they should encourage good interaction among them. Besides, luxury hotels should give proper guidelines to their employees and give enough time for them to spend with their family and sufficient breaks to reduce their tension and tiredness. Labour turn over is a major problem in hospitality industry and it has got a direct impact on the services offered to the guest pertaining to service quality and customer satisfaction

Key Words: Employees, Factors, Luxury Hotels, Turnover Intention

1. INTRODUCTION

Turnover intention of employees is the probability of employees to leave the present job they are carrying out (Nyamubarwa, 2013). In respect of size, nature and location, each and every organization is always putting concern on turnover intention of its employees (Long et al 20012) and it is a critical human resource management problem in all kind of sectors including hotel industry that affects significantly performance, quality and profitability (Kumar, 2011). In addition, turnover of employees have larger impact on operational efficiency, effectiveness of delivery of services and overall image of organization (Kaya and Abdioglu, 2010). Turnover of employees in the hotel sector has significant effect on services, performance and profitability of hotels.

In hotel sector, employees are main part of guest's experience and higher level of turnover intention among employees creates a very serious problem in functioning of hotels

and it affects development of tourism activities also (Urbancova and Linhartova, 2011). The Indian hotel industry flourishes mainly because of the growth of tourism and travel. The hotel industry alone contributes nearly one per cent to Gross Domestic Product of India. The Indian hotel industry has witnessed a considerable growth in room inventory across categories from luxury to boutique and budget hotels. At the same time, this industry is facing a severe problem of turnover of employees at a higher rate and it does not get sufficient and skilled employees for various activities of hotels (Sheel, 2014). Therefore, it is essential to find out factors affecting turnover intention of employees of luxury hotels.

2. REVIEW OF LITERATURE

Sell and Cleal (2011) found that work environment, salary and satisfaction in job were significantly affecting turnover intention of employees in hotel industry. Lee et al (2012) concluded that relation between co-workers, work environment, salary and commitment were significantly affecting turnover intention of hotel employees.

Cheng et al (2013) revealed that work factors, personal factors and relation among employees and satisfaction in job were significantly affecting turnover intention of employees of hotel. Madera et al (2014) showed that work environment, language and communication problems, conflicts in role and satisfaction in job were significantly influencing turnover intention of employees of hotels.

Emiroglu et al (2015) indicated that position, wage, tenure and department in which employees working were determining turnover intention of employees in five star hotels. Mathieu et al (2016) found that behaviour of supervisor, satisfaction in jobs and commitment were determining turnover intention of hotel employees. Nor et al (2017) concluded that value of work, safety and quality of work life were significantly influencing turnover intention of employees of hotels.

Belete (2018) revealed that stress in job, satisfaction in job, organizational culture and commitment, salary, promotion and leadership were affecting turnover intention of employees of hotels. Edirisinghe and Manuel (2019) indicated that work environment, remuneration, satisfaction in job and career development were influencing turnover intention of employees in hotel industry.

3. OBJECTIVES OF THE STUDY

1. To find out factors affecting turnover intention of employees of luxury hotels.
2. To inspect difference between demographics of employees and factors affecting their turnover intention in luxury hotels.
3. To study influence of factors affecting turnover intention of employees of luxury hotels on their degree of turnover intention.

4. METHODOLOGY

The present study is carried out in Kochi. Employees of luxury hotels are chosen by applying simple random sampling method and structured questionnaire is used to collect data from 300 employees of luxury hotels. Percentage analysis is used to examine demographics of employees of luxury hotels. An exploratory factor analysis is employed to find out factors affecting turnover intention of employees of luxury hotels. F-test and t-test are applied to inspect difference between demographics of employees and factors affecting their turnover intention in luxury hotels. Multiple regression analysis is used to study influence of factors affecting turnover intention of employees of luxury hotels on their degree of turnover intention.

5. RESULTS

5.1. DEMOGRAPHICS OF EMPLOYEES

The demographics of employees are given in Table-1. More number of hotel employees (59.67 per cent) in male category and large number of them (33.33 per cent) in 31 to 40 years of age group. Highest number of them (43.00 per cent) have secondary education and most of them (35.33 per cent) hold working experience of 6 – 10 years and majority of them (34.33 per cent) get monthly income of Rs.15,001 – Rs.20,000.

Table-1. Demographics of Employees

Demographics	Number of Employees	Percentage
Gender		
Male	179	59.67
Female	121	40.33
Age		
Below 20 Years	49	16.33
21 to 30 Years	62	20.67
31 to 40 Years	100	33.33
41 to 50 Years	54	18.00
Above 45 Years	35	11.67
Education		
Secondary	129	43.00
Higher Secondary	99	33.00
Under Graduation	72	24.00
Working Experience		
Less than 5 Years	47	15.67
6 – 10 Years	106	35.33
11 – 15 Years	97	32.33
More than 15 years	50	16.67
Monthly Income		
Below Rs.15,000	68	22.67
Rs.15,001 – Rs.20,000	103	34.33
Rs.20,001 – Rs.25,000	77	25.67
Above Rs.25,000	52	17.33

5.2. FACTORS AFFECTING TURNOVER INTENTION OF EMPLOYEES OF LUXURY HOTELS

To find out factors affecting turnover intention of employees of luxury hotels, an exploratory factor analysis is applied and the outcome is given in Table-2. Value of Kaiser-Meyer-Olkin test is 0.784 for measuring adequacy of sampling and Chi-Square value for

Sphericity of Bartlett's test is 0.0052. These values reveal method of factor analysis is correct. Principal component analysis method is employed and varimax rotation is used and it is converged in 9th iterations. Four factors obtained have 75.77 per cent of variation on variables in the study.

Table-2. Factors Affecting Turnover Intention of Employees of Luxury Hotels

Factor	Item	Rotated Factor Loadings	Eigen Value	% of Variation	Factor Name
I	Equipments and tools	0.72	3.70	23.16	Work Atmosphere
	Decision making power	0.70			
	Sharing of work	0.68			
	Encouragement	0.71			
	Good environment	0.66			
	Assessment of work	0.73			
II	Friendliness of employees	0.69	2.38	20.75	Inter-Personal Relation
	Support from employees	0.67			
	Support from managers	0.72			
	Good interaction with employees	0.74			
	Better interaction with managers	0.65			
III	Tension and tiredness	0.70	1.26	17.04	Complexity
	No proper guidelines	0.66			
	No sufficient time for family	0.71			
	High expectation	0.69			
IV	High engagement	0.66	1.04	14.82	Job Involvement
	Time consuming	0.64			
	Inability to think on other activities	0.67			
	Cumulative Variation(%)	-	-	75.77	-

Factor - I consists of equipments and tools, decision making power, sharing of work, encouragement, good environment and assessment of work. Therefore, this factor is described as **Work Atmosphere** and it has 23.16 per cent of variation.

Factor - II includes friendliness of employees, support from employees, support from managers, good interaction with employees and better interaction with managers. Hence, this factor is stated as **Inter-Personal Relation** and it has 20.75 per cent of variation.

Factor - III comprises of tension and tiredness, no proper guidelines, no sufficient time for family and high expectation. Thus, this factor is denoted as **Complexity** and it has 17.04 per cent of variation.

Factor - IV contains high engagement, time consuming and inability to think on other activities. So, this factor is labeled as **Job Involvement** and it has 14.82 per cent of variation.

Cronbach's Alpha value is 0.89 and it exhibits that all measures have internal consistency in acceptable level. Work atmosphere, inter-personal relation, complexity and job involvement are factors affecting turnover intention of employees of luxury hotels.

5.3. DEMOGRAPHICS OF EMPLOYEES AND FACTORS AFFECTING THEIR TURNOVER INTENTION IN LUXURY HOTELS

To inspect difference between demographics of employees and factors affecting their turnover intention in luxury hotels, ANOVA and t-tests are employed and the results are given in Table-3.

Table-3. Demographics of Employees and Factors Affecting their Turnover Intention in Luxury Hotels

Particulars	t-Value / F-Value	Sig.
Gender and Factors Affecting Turnover Intention in Luxury Hotels	4.728** (t-value)	.000
Age and Factors Affecting Turnover Intention in Luxury Hotels	4.946** (F-Value)	.000
Education and Factors Affecting Turnover Intention in Luxury Hotels	5.834** (F-Value)	.000
Working Experience and Factors Affecting Turnover Intention in Luxury Hotels	5.385** (F-Value)	.000
Monthly Income and Factors Affecting Turnover Intention in Luxury Hotels	5.652** (F-Value)	.000

** Significant at 1 % level

The F-values and t-value are significant and they explain that significant difference prevails between demographics of employees and factors affecting their turnover intention in luxury hotels.

5.4. INFLUENCE OF FACTORS AFFECTING TURNOVER INTENTION OF EMPLOYEES OF LUXURY HOTELS ON THEIR DEGREE OF TURNOVER INTENTION

Multiple regression analysis is applied for studying influence of factors affecting turnover intention of employees of luxury hotels on their degree of turnover intention and the outcome is given in Table-4. Adjusted R^2 is 0.57 and R^2 is 0.59 and they illustrate the regression model has better fit. F-value is 23.865 and it discloses the model has significance.

Table-4. Influence of Factors Affecting Turnover intention of Employees of Luxury Hotels on their Degree of Turnover Intention

Factors Affecting Turnover intention of Employees	Regression Co-efficients	t-Value	Sig.
Intercept	1.017**	10.694	.000
Work Atmosphere (X ₁)	-.426**	6.812	.000
Inter-Personal Relation (X ₂)	-.370**	5.950	.000
Complexity (X ₃)	.345**	5.238	.000
Job Involvement (X ₄)	-.394**	6.475	.000
R ²	0.59	-	-
Adjusted R ²	0.57	-	-
F	23.865**	-	.000

** Significant at 1 % level

Complexity is positively and significantly and work atmosphere, job involvement and inter-personal relation are negatively and significantly influencing degree of turnover intention of employees of luxury hotels.

6. CONCLUSION

The results of this study demonstrate that work atmosphere, inter-personal relation, complexity and job involvement are factors affecting turnover intention of employees of luxury hotels. Significant difference exists between demographics of employees and factors affecting their turnover intention in luxury hotels. In order to reduce turnover intention of employees, luxury hotels should improve their work atmosphere through providing adequate equipments and tools, power to make decision and sharing various work among their employees and making regular assessment of their work. Luxury hotels must give support to their managers and employees and they should encourage good interaction among them. Besides, luxury hotels should give proper guidelines to their employees and give enough time for them to spend with their family and sufficient breaks to reduce their tension and tiredness and they must make employees to involve in their jobs with interest and passion through monetary and non monetary benefits.

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Adherences to Sustainable Management Criteria in the Responsible Tourism (RT) Classified Resorts of Kumarakom Tourist Destination

Anitha R (Research Scholar), Ambeeshmon S

Sree Narayana Arts and Science College, University of Kerala

Abstract

As part of the Responsible Tourism initiatives; new classification criteria have been implemented in the various accommodation units of Kumarakom in May 2013. Based on the Global Sustainable tourism criteria; these criteria are developed for ensuring sustainability of the tourist destinations, and to contribute significantly to the indigenous populations of the destinations. After many hardships, the Department of tourism in association with the hospitality sector established a linkage with local community, and received measures to implement this unique classification scheme. It has been observed that the presence of healthy linkage between hospitality sector and local community contributed to enormous growth in responsible tourism. Here, the researcher describes the first section of the criteria called sustainable management criteria, and its adherences to the hospitality sector of Kumarakom tourist destination. Key words: Global Sustainable tourism criteria, responsible tourism, sustainable management criteria.

Introduction

As part of the responsible tourism initiative many classification criteria have been introduced by the Department of Tourism, Government of Kerala, for the first time in the hospitality sector of Kumarakom in the year 2013. Out of a total of 1000 points, a minimum of 500 points is required to become an RT branded hotel, a home stay, and a resort or house boat. Properties with scores between 750-1000, 600-749 and 500-599 will be classified as platinum, gold, and silver respectively. The objective of this classification is to minimise the negative impacts and maximise the benefits of the stakeholders, especially the local community through sustainable approaches of tourism. There are four sections for these criteria. In each section a minimum of 50 percent point is required for qualifying RT Brand. The first section is the, sustainable Management criteria.. Here the researcher explores the most adhered criteria of RT branded properties at Kumarakom. The other three criteria are socio cultural RT, Economic RT and Environmental RT.

Objective

To analyse the adherences of sustainable management criteria in the RT branded resorts of Kumarakom tourist destination.

Methodology

The study is descriptive in nature. The first section of the classification criteria introduced by Department of Tourism, Government of Kerala is used for the study. Survey questionnaire method is adopted. Responses from thirteen RT branded resorts are included as samples. Judgement sampling is used for data collection. The close ended questions were only analysed to study the adherences to RT criteria. The primary data were analysed using Binomial Test.

Review of literature

In 1996 the **DEAT** (Department of Environmental and Tourism Affairs) published the white paper on the development of promotion of tourism in South Africa–DEAT. This paper proposed to develop tourism in South Africa in a responsible and sustainable manner and later these initiatives transformed South Africa to become a captain in responsibility oriented environmental practices.

The white paper of the DEAT 1996 defines Responsible tourism as the “Tourism that promotes responsibility to the environment through its sustainable use, responsibility to involve local communities in the tourism industry, responsibility for the safety and security of visitors and responsible government, employees, employers, unions and local committees.” According to DEAT 1996 the key elements of Responsible tourism are to

- Ensure communities are involved in and benefit from tourism.
- Market tourism that is responsible, respecting local, natural and cultural environments.
- Involve the community in planning and decision making.
- Use local resources sustainably.
- Be sensitive to host culture.
- Maintain and encourage natural, economic, social and cultural diversity: and
- Undertake assessment of environmental, social and economic impacts as a prerequisite to developing tourism.

Most of the South African accommodation units followed this elements and it became great success. Later these principles are developed in to triple bottom approaches or the three pillars of the responsibilities. Sustainable management principles were also integrated

in to this concept and today under the threat of global warming this is also quite essential for the well being of people and planet earth.

Goodwin (2011) says that Jost Krippendorf is the godfather of RT as he in 1987 mentioned for the first time, a new type of tourism which contained the elements of responsibility. This tourism is the one that will bring the greatest possible benefit to all the participants- travellers, the host population and the tourist business, without causing intolerable ecological and social damage.

Goodwin (2011) viewed RT as “Responsible tourism is about everyone involved taking responsibility for making tourism more sustainable”.

RT Classification Criteria

Here the first section of the criteria- ie. Sustainable Management Criteria is only studied to understand the adherences of RT classification scheme in the RT branded hotels.

	Section One		Marks
	Sustainable Management Criteria		200
1.1	Sustainable Management Plan		40
1.1.1	The sustainable Management Plan is communicated to Management and staff	3. Yes	20
		4. No	0
1.1.2	The Sustainability Management Plan is communicated to Clients	3. Yes	10
		4. No	0
1.1.3	Plan is integrated at decision-making level, includes monitoring, analysis/evaluation and adaptive management	3. Yes	10
		4. No	0
1.2	Compliance with Rules and Regulations		30
1.2.1	Records available on the compliance of all relevant legislation and regulations	3. Yes	15
		4. No	0
1.2.2	Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates	3. Yes	15
		4. No	0
1.3	Customer satisfaction is measured and corrective action		20

1.3.1	Customer Satisfaction is measured using a feedback form- Proof of tools and systems	3. Yes	10
		4. No	0
7	A follow up mechanism exist to implement corrective action taken in at least 3 cases)	3. Yes	10
		4. No	0
1.4	Realistic promotional materials & service delivery		20
1.4.1	Quality of Marketing Materials are high in terms of (1) Completeness (2) Accuracy (3) Addressing Social. Environmental concerns and Local community benefits (4)Effective communication	5. All Four	20
		6. Any three	15
		7. Any Two	10
		8. Any one	5
1.5	Information on & Interpretation of nature and local culture		30
1.5.1	Company has an interpretation program run by a Naturalist, Sociologist, or a designated, trained person on local attractions.	3. Yes	10
		4. No	0
1.5.2	Company has delivery mechanisms for interpretations (collaterals, tour guide, information kiosk/desk)	3. Yes	5
		4. No	0
1.5.3	Number of staff training programme conducted on information and interpretation	3. Yes	5
		4. No	0
1.5.4	Interpretation materials are accurate	3. Yes	5
		4. No	0
1.5.4	Whether local inhabitants lead or guide customers	3. Yes	5
		4. No	0
1.6	Personnel Training & management (Annual)		60
1.6.1	Mechanism for assessing training needs	4. Yes	5
		5. No	0
1.6.2	No. of Training provided to management staff only	1.2. No's more	10
		5.1. No	5

		6. Nil	0
1.6.3	No. of Training provided to management members only	1.2. Nos or more	10
		2.1.No	5
		3.Nil	0
1.6.4	No. Of orientation programmes provided to temporary staff members	5. 2 Nos or more	10
		6. 1 No	5
		7. Nil	0
1.6.5	Percentage of staff covered under the training programs	2. 75-100%	10
		2.50-75%	7.5
		3.25-50%	5
		8. <25%	0
1.6.6	Elements of sustainability are covered in the training module	3. Yes	10
		4. No	0
1.6.7	Mechanism for assessing post training services	3. Yes	5
		4. No	0
		Total	200

Source: keralatourism.org

Out of the above 19 criteria the close-ended questions were subjected to binomial test and those criteria which have been showing a significant value at 5 percent level of significance are explained below. The criteria number is indicated against the criteria statements in the box.

1. Sustainability Management plan is communicated to the management and staff: The proportion of the sustainability plan is communicated to management and staff. The proportion index is found 1.00 which means all the respondents were informed about the plan. This proportion is found significant at 5 percent level of significance. ie. p value less than 0.05. Table 1 gives the results.

Table 1**Sustainability management plan is communicated to management and staff**

Criteria 1.1.1	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
The sustainability management plan is communicated to management and staff.	Yes	13	1.00	.50	.000
	No	0	0		
	Total	13	1.00		

Primary Data

2 Sustainability Management plan is communicated to clients: The proportion of the sustainability plan is communicated to clients. The proportion index is found 0.85 which means 85 percent of the respondents were informed about this indicator. (The remaining 15 percent is not adhered to this criterion). This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. The result is depicted in table 2

Table 2**Sustainability Management plan is communicated to clients**

Criteria 1.1.2	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Sustainability plan is communicated to clients:	Yes	11	0.85	.50	.000
	No	2	0.15		
	Total	13	1.00		

Primary Data

3. Records available on the compliance of all relevant legislation and regulation: The proportion of the records available on the compliance of all relevant legislation and regulation is found 1.00 which means all the respondents were informed about the plan. This proportion is found significant at 5 percent level of significance. i.e. p value less than 0.05. Table 3 gives the result.

Table 3

Records available on the compliance of all relevant legislation and regulation

Criteria1.2.1	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
The Records available on the compliance of all relevant legislation and regulation.	Yes	13	1.00	.50	000
	No	0	0		
	Total	13	1.00		

Primary Data

4. Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates: The proportion of whether the project satisfies all the conditions stipulated in compliance with the permits/certificates, is found 1.00 which means all the respondents were informed about the plan. This proportion is found significant at 5 percent level of significance.ie. p value less than 0.05. The result is presented in table 4.

Table 4.

Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates?

Criteria1.2.2	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Whether the project satisfies all the conditions stipulated in compliance with the permits/certificates	Yes	13	1.00	.50	000
	No	0	0		
	Total	13	1.00		

Primary Data

5. Customer satisfaction is measured using a feedback form-proof of tools and systems

The proportion of the, customer satisfaction is measured using a feedback form-proof of tools and systems. The proportion index is found 0.85 which means 85 percent of the respondents were informed about this indicator. (The remaining 15 percent is not adhered to this criterion). This proportion is found significant at 5 percent level of significance.ie. p value less than 0.05. Table 5 shows the result.

Table 5**Customer satisfaction is measured using a feedback form-proof of tools and systems**

Criteria 1.3.1.	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Customer satisfaction is measured using a feedback form-proof of tools and systems,	Yes	11	0.85	.50	0.002
	No	2	0.15		
	Total	13	1.00		

Primary Data

6. A follow up mechanism exist to implement corrective action plan where needed.

(To be supported with proof of action taken in at least 3 cases): The proportion of the follow up mechanism exist to implement corrective action plan where needed. (To be supported with proof of action taken in at least 3 case), is found 0.85 which means 85 percent of the respondents were informed about this indicator.

(The remaining 15percent is not adhered to this criterion.) This proportion is found significant at 5 percent level of significance.ie. p value less than 0.05. Table 6 gives the result.

Table 6**A follow up mechanism exist to implement corrective action plan where needed**

Criteria 1.3.2.	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
A follow up mechanism exist to implement corrective action plan where needed.(To be supported with proof of action taken in at least 3 cases.	Yes	11	0.85	.50	0.002
	No	2	0.15		
	Total	13	1.00		

Primary Data

7. Elements of sustainability are covered in the training module: The proportion of the elements of sustainability is covered in the training module is found 0.85 which means 85 percent of the respondents were informed about the plan. The remaining 15 percent is not adhered to this criterion. This proportion is found significant at 5 percent level of significance.ie. p value less than 0.05. Table 7 gives the result.

Table 7

Elements of sustainability are covered in the training module

Criteria 1.6.6.	Criteria Followed Yes/No	Total No. of Responses	Observed Proportion	Test Proportion	Significance (Two Tailed)
Elements of sustainability are covered in the training module	Yes	11	0.85	.50	0.022
	No	2	0.15		
	Total	13	1.00		

Primary Data

Findings

Out of the 15 close ended questions 7 criteria were found to be well adhered by all of the RT branded properties. Two of the criteria were did not give a positive result and the rest 6 criteria are found to be neither responded or not implemented. Nearly 50% of the criteria are successfully followed by the RT branded units. This is found to be useful in addressing the sustainable issues of the accommodation sector.

Conclusion

When we compare a RT practicing accommodation unit with a non RT practicing unit it was found that the RT classification criteria is successful in mitigating negative impacts and maximizing positive impacts. It is equally beneficial for all the stake holders of tourism industry. The community and the tourists are equally benefited by these practices along with other stake holders. It has been also useful in maintaining the indigenous knowledge and culture. Initially

only 13-16 hotels comes under this branding. Today there are more than hundred hotels across Kerala State, under the RT classification scheme excluding houseboats and home stays.

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Biographies of the Authors**Anitha.R**

Published eight national and 3 international papers. Area of interest is sustainable initiatives and related activities. Working as Assistant Professor at Sree Narayana Arts and Science College, Kumarakom, Kerala.

Dr.Ambeeshmon S.

Working as Assistant Professor ,Institute of Management in Kerala,University of Kerala. He has published 10 papers at International level and 12 papers at National level.

A Conceptual Analysis of Farm Tourism through Literature Review- with Special Reference to Kerala

Joby George, Sindhu R Babu

Kannur University, Mahatma Gandhi University

Abstract

Farm tourism is a comparatively recent initiative in Kerala with the twin purpose of developing an important strategy that can contribute to farm area expansion through modification of farming activities in view of enhancing the income of the farmers. Farm tourism offers tourists to learn local specific farming activities and also space for resting, relaxation and enjoyment. At present, farm tourism is an important branch of tourism in most of the developed countries and also in some developing countries; however, we still are in its beginning stage. Kerala blessed with scenic beauty and being an agricultural dominated state, holds great scope for developing Farm Tourism in a large scale without much additional investment. Lack of adequate knowledge of scope and opportunities of farm tourism among farmers is one of the major challenges in Kerala. Surprisingly, the concepts Farm tourism so decisive to the economy of Kerala are not clearly defined. The main objective of this paper is to formulate suitable definition through a conceptual analysis of Farm tourism through Literature Review- with special reference to Kerala. Through a review of literature the researchers attempt a conceptual analysis of Farm tourism to arrive at a conceptual clarification with special reference to Kerala. In the study the researchers find out that Farm tourism, Rural tourism, Village tourism, Responsible tourism are used synonymously without conceptual clarity in Kerala tourism market and also find out that Kerala holds a great opportunity in developing farm tourism if the present land limit 10 acres is lifted for official approval in favor of small land holders. The smaller the limit the greater the benefit found to be for the languishing farmers.

Key Words: Tourism, Farm Tourism, Scope, Challenges, Kerala, conceptual analysis

1. Introduction

Agriculture stands unique oldest and greatest elementary segments of the international economy, while tourism remains a unique latest quickly growing industry. Tourism was thought so far as location specific such as the beach, lagoon, and the scenic hill area with waterfalls and wildlife sanctuary. Kerala started exploring the culture and skill oriented only recently and Farm tourism is in its infancy. The attraction of farm tourism industry is that it can be easily promoted without much investment and is very handy for the

Kerala farmers whose landholdings are comparatively small and its geographical features itself is suited for farm tourism. Furthermore, gradual loss of fertility of the land and the diminishing yields, the farmers' income is to be supplemented with other allied sources of income and farm tourism is the most lucrative means to prop up their income. Each and every district in Kerala has their own farm activities and development of farm tourism is conceivable anywhere in the state.

The main objective of this paper is to find out through conceptual analysis of Farm tourism through Literature Review- with special reference to Kerala. Kerala is ideally endowed with nature though for farm tourism at present it is not effectively made use of in Kerala.

2. Methodology of the study

Published documents are used for this research work like UNWTO reports, WTTC published information. Various related websites are reviewed for data collection. Statistics published by the Government of Kerala and Government of India are also made use of. Articles, various journals and books are also reviewed to locate its scope and relevance.

3. Farm tourism.

Through literature review the researchers found out that various organizations and entrepreneurs that promote farm tourism developed their own concept of farm tourism in different ways. Surprisingly, in the case of farm tourism there is no universal accepted definition propounded by the international organizations like United Nations World Tourism Organizations. In most cases farm tourism concepts used interchangeably with the concepts such as Agritourism, Village tourism, Eco-tourism and Rural tourism. As a point of fact farm tourism concept is entirely different from what is put forward; the one that comes closest is the definition in the Farm Tourism Act passed by the Philippines. According to this farm tourism Act "farm tourism is the practice of attracting visitors and tourists to farm areas for production, educational and recreational purposes. It involves any agricultural – or fishery – based operation or activity that brings to farms visitors, tourists, farmers and fisherfolk who want to be educated and trained on farming and its related activities, and provides a venue for outdoor recreation and accessible family outings"

4. Kerala Farm Tourism

Kerala occupies 30.22 lakh hectares of gross cropped area which is 56.78 percent of the state's total topographical area. Out of this gross cropped area more than one third contains plantations of tea, coffee, rubber, pepper, cardamom and ginger. Another one third is covered by coconut plantations. The remaining area of the land is under paddy cultivation.

(www.spb.kerala.gov.in). This pattern of land uses itself and its harvest seasons become great tourist attraction and could be made use of for enhancing farmer income without additional expense of men and material. Tourists are spontaneously motivated to get a chance to understand life style, behavior patterns and local farming skills of community life. Thus, in many parts of the world Farm tourism has been itemized as a beautiful tourism product. For the expansion of farm tourism, there is no mandatory way it springs from the farming context, culture and behavior. It will deliver an extra revenue to the already languishing farmers.

4.1. Essential Components for setting up of farm tourism project in Kerala : (Kerala Tourism Infrastructure Ltd)

- “Minimum 10 acres of farm/50 acres of plantation
- Parking area
- Development of entry area
- Ticket counter, guardroom, gate, name boards etc.
- Compound wall at the entry area
- Stalls or shopping area outside or inside the farm
- Restaurant/coffee shop/snack bar
- Walkways, signage etc. within the farm
- Toilet facilities inside and outside the farm
- Brochures”

4.2. Major farm tourism centers in Kerala (Keralafarmtourism.com)

- 1) Harithavanam Farm House -Keerikara
- 2) Ambady Estate -Chithirapuram - Munnar
- 3) Tranquil Resort Kolagapara – Wayanad
- 4) Thomaschettan's Farm Stay Kadayiruppu - Ernakulam
- 5) Philipkutty's Farm Vechoor- Kottayam
- 6) Planters Retreat Kanhirapuzha- Palakkad
- 7) Vanilla County-Teekoy
- 8) Aalthara Spice Garden Farm stay Peermade - Idukki
- 9) Harvest Fresh Farm Thekkady - Idukki
- 10) Kallat Heritage Ambalavayal - Wayanad
- 11) Nutmeg Greens Angamali - Ernakulam
- 12) Parisons Plantation Experiences Cherakkara – Wayanad
- 13) Chaliyar Palm Ghat Resort Valamthode- Malappuram

- 14) Soma Birds Lagoon Kothamangalam - Ernakulam
- 15) Hiliya Resort Sulthanbathery – Wayanad

4.3. Major Farm tourism destinations- Kerala

Idukki

Idukki is top most spice tourism destination in Kerala. The geographical features of Idukki suited for cultivation of tea, coffee, rubber, coconut, cardamom, pepper etc. There are number of farm tourism units are Idukki which provide accommodation and farm visit. following are the major farm tourism centers in Idukki listed in tripadvisor website

- Spice Walk, Thekkady.
- Lockhart Tea Museum, Devikulam.
- Mattupetti Indo-Swiss Farm, Munnar.
- Tea Town Kerala, Munnar Suryanelli.
- Cinnamon Gardens Spices Plantation, Munnar.
- Spice Cloud, Thekkady.
- Green Nest Passion Fruit Farm, Rajakkad.
- Kerala Farm, Anaviratty.

Wayanad

Wayanad is famous for its cool upland weather, cloudy mountains and its virgin jungles. Wayanad main attraction is western Ghats with haughty crests, compressed forest and valleys. It enjoys a healthy climate throughout year. following are the major farm tourism centers in Wayanad listed in TripAdvisor website

- Dew Drops Farm Stay, Kalpetta
- Abhirami Farm Resorts, Mananthavady

Palakkad

Palakkad be situated a minor town that is relatively near to amount of village. Palakkad remains a perfect farm tourism place with its attractive site, distinguishing palmyra plants and wide-ranging green paddy grounds. The Navara Organic Eco Farm close Chittur, cover a range of 18 acres of property in Palakkad, is a well-known spot for farm tourism. following are the major farm tourism centers in Palakkad listed in TripAdvisor website

- Green Land Farmhouses, Nelliampathy
- Ambat Farmstay, Malampuzha

Alappuzha

Alappuzha is unique destinations for Farm tourism in Kerala. 'Kuttanad' in Alappuzha district stands be the 'rice granary of Kerala'. This rich farming circumstance of 'Kuttanad' is always fascinating tourists to this lovely place. It is unique of the rare spaces in the biosphere wherever agricultural is done under sea level.

- Back Water Farm House, Alappuzha
- Serah's Farm, Alappuzha
- Pampa fish farms, Alappuzha

Pathanamthitta

Preferably located close the Western Ghats, Pathanamthitta remains a good-looking area furnished by plentiful streams, charming sceneries, lavish green jungles etc. Agriculture is the main livelihood of the persons of Pathanamthitta farm tourism destination.

- Adavi Eco Tourism, Pathanamthitta

Kottayam

Kottayam stands a significant marketable Centre of Kerala. Utmost of India's natural rubber creates from the acres of well-reserved plantation farms of Kottayam

- Mango Meadows Agricultural Theme Park, Kottayam
- Palakarai Aqua Tourism Farm, Kottayam
- Philipkutty's Farm, Kottayam

9. Literature review

(James. G. 2002) says that Farm based rural tourism is a non-seasonal tourism product and it must be promoted as such. Many attractions and activities have evolved as a result of the development of farm tourism. They are:

- "Farm visitor centers
- Farm museums and farm shops
- Self-guided farm trails
- Educational visits and demonstrations
- Nature studies and workshops on interesting or emerging agriculture topics
- Farm store: exhibition of farm equipment
- Roadside stand selling fresh farm products and craft items

- Processing of farm products and sale
- A shady spot for visitors to rest – like a big banyan tree
- Farm schools to teach a particular skill
- Collection of old farm machinery
- Miniature village
- Farm Theme Playground for children”

(Annie K. S et al, 2012) study says that Kerala is primarily an agricultural dominated state with large number of farm / plantations which can be converted into tourism products. The farms situating nearby traditional tourist areas are mainly selected for this purpose. This agriculture state has tremendous potential for farm tourism in a big way without much additional investment and the tourism benefits can be easily transferred to farmers

(Naveen Agarwal, 2017) speaks of Farm tourism activities that can be added to the benefits in the promotion of the sustainable agricultural practices. The three main components of the development of farm- tourism are as follows;

- Small business with agricultural events like a festival that offers creative expression of locals ‘practices, rituals and festivals
- Farmers marketing as a window to tourist’s activity with the local community
- Regional planning of farm tourism.

(Singh, 2002) says that Farm Tourists also have option for participating in the village games like wrestling, kite flying, gulidanda and even have rides in the tractors, bullock carts etc. Experiences like taking bath in tube well, jumping on hay heap are the unique features of the Indian farm tourism that tourists both adult and children opt for, as a welcome change to their city life pressures and pollutions

(Sharpley R and Vass A 2006) says that the development of farm tourism is considered an integral element of the revitalization of rural areas through tourism. But it also points to a number of challenges facing successful farm tourism:

- Location: not all rural areas are equally attractive to tourists.
- Investment: diversification may require significant investment.
- Marketing: there is a need for collective collaboration and marketing through regional or national structures.
- Quality: the quality of products and services provided by farm tourism enterprises must meet tourists’ demand and expectations.

According to Pandurang Taware, (2008) scope of agriculture:

- “An inexpensive gateway

- Curiosity about the farming industry and life style
- Strong demand for wholesome family oriented recreational activities
- Health consciousness of urban population and finding solace with nature friendly means
- Desire for peace and tranquility
- Interest in natural environment
- Disillusionment with overcrowded resorts and cities
- Nostalgia for their roots on the farm –
- Rural recreation
- Educational value of Agri-Tourism”

6. Scope of Farm Tourism in Kerala

Farm tourism helps to experience the real life, taste the local genuine food and get familiar with the various farming tasks. Agriculture is the backbone of the Kerala economy.

- Kerala farm tourism venues provide supplemental income to farmers and rural communities.
- Farm tourism helps to add values to crops, livestock and natural resources.
- Farm tourism creating the new jobs in agricultural sectors.
- Through farm tourism can preserve agricultural lands.
- Farm tourism can generate employment opportunities in rural communities.

7. Challenges in Kerala farm tourism

Through literature review researchers found entrepreneurs in farm tourism business are very few compared to hotels and home stays in Kerala despite the fact that it is ideally created by nature for farm tourism nonetheless at present we are not effectively promoting farm tourism in Kerala. These are the major challenges of Kerala farm tourism

- Lack of adequate knowledge on the scope and opportunities of farm tourism among farmers and government of Kerala itself.
- Lack of training institution in the field of farm tourism entrepreneurship business.
- Insufficient funds to develop basic infrastructure for the farm tourism
- Kerala's tourism promoters are at the wit's the end in front of Lakhs of farmers with small land holding who could be promoted in Kerala
- Given the extremely fragmented low land holdings in Kerala the biggest hurdle is the 10-acre limit for the approval of a farm to be a tourist farm, it is to be lifted. Experience in other parts of the country and world over says that it is not the size of

the farm that generally attracts tourists but rather the innovation and the client friendly dealings of the hosts.

8. Conceptual Clarity in Farm Tourism in Kerala

As we have seen in the literature study researchers from different countries have developed their own definitions based on their unique experience. However, there is little consensus on the definitions for farm tourism in Kerala that depends heavily on tourism for its fiscal credit. There is an urgent need to redefine what is farm tourism and its conditions for approval to be a tourism center. Minimum 10 acres' land for an approved farm tourism center in Kerala is totally unfit for Kerala in the fragmentation of land in small holdings. That is why ordinary farmers are not able to get Kerala Tourism Department approval for farm tourism business. In order to attract more farmers to the farm tourism sector, the minimum 10 acres of farm should be reformulated. It should be modified because the per person land occupancy rate in Kerala is very low compared to other states in India. In Kerala, there is an urgency of redefining farm tourism to make it possible for the small-scale farmers to participate in the tourism drive in Kerala.

9. Findings

Following are the findings of the study if a conceptual clarity is arrived at in promoting farmer specific tourism to provide a supplementary income in the context of persistent farming crisis:

1. The concepts, farm tourism, rural tourism, village tourism, responsible tourism is used as synonyms without clarity in Kerala tourism market. This confusion of terms itself is the greatest impediment for the development of the farm tourism in Kerala.
2. Kerala holds a great opportunity in developing farm tourism if the land limit from the present 10 acre limit for official approval to a lesser landholding as majority of Kerala farmers hold land less than one acre.
3. The emergent needs of the tourists are found to be getting acquainted with the farming skills, life style, behavior patterns, in short farming culture, of the small scale farmers and their organization of life within the limited income from the small holdings.
4. The less the landholdings for the official approval the extensive the benefit would be for the farmers. If this is not creatively used by the government it would end up in the private promoter's intervention to the detriment of farmer's interest and income.
5. If concepts are not timely clarified the farm tourism would turn to be still another area where the unorganized farmers are exploited by the middle men who function as a

parallel Government with superior managerial skill and organizational and money power.

6. The bureaucrat- middle men nexus is perhaps the biggest exploitative mechanism that torpedoed the government beneficial programs to reach the deprived target group. An indecisiveness and delay in farm tourism concept clarification would add to the list yet another program that failed to reach the intended deserving group.

7. Conclusion

Farm tourism is not an idea but it is a life style which is a bridge between urban to rural lives. It develops leadership potential among residents as well as provides employment opportunities for family members. Farm tourism is, perhaps, the most creative way available to small farmers for solving their problems as it could be done with meager investment and trained adaptation farmers can develop sustaining small and medium enterprise to earn maximum.

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Role of Social Media in Promoting Sustainable Tourism

Joyeeta Chatterjee

N.L. Dalmia Institute of Management Studies and Research

Abstract

Social media platforms are closely connected mechanism which has been consumed by corporate houses and brands for commercial communication to gain customer attention. With the emerging technologies and evolution of social media, there is a revolution in the tourism sector which has influenced the sustainable tourism business. The International Tourism Organizations work for marketing and dissemination of awareness of sustainable tourism through social media platforms in addition to conducting seminars and publishing annual reports. In the current age, people design their tour programs based on the information available on the internet and social media sites. Sustainable Tourism, defined as the process of people maintaining change in a balanced environment, wherein the resources, investments, technological development as well as the institutional change are all in accordance and augment current and future potential to meet human needs and aspirations. This study is an attempt to determine the role played by social media platforms in promoting sustainable tourism.

Keywords: Social Media Marketing, Sustainable Tourism, Responsible Tourism, Eco-Tourism

Introduction

The emergence of social media has brought in a paradigm shift worldwide as a medium of communication, facilitating users to observe, interact, and exchange information. The new media is being consumed by corporate houses and brands for commercial communication to gain customer attention. With the emerging technologies, and evolution of social media, there is a revolution in the tourism sector and have impacted the sustainable tourism business. Several international organizations like World Wide Fund (WWF) for Nature, The International Eco-Tourism Society (TIES), Eco-Tourism Society of India (ESOI), Rainforest Alliance (RA), Sustainable Travel International (STA), Global Sustainable Tourism Council (GSTC) and more work for marketing and dissemination of awareness of sustainable tourism through social media platforms in addition to conducting seminars and publishing annual reports. Uses of social media sites like Facebook, Instagram, Twitter, Google+, and Pinterest enable tourism providers to remain connected with other stakeholders (*Stanciu and Costea, 2012*). In the current age, people design their tour programs based on the information available on the internet and social media sites.

Tourism

Tourism is a cultural, social and economic experience which involves the movement of people from their place of residence to other places and countries for enjoying leisure, local cuisines and delicacies, entertainment, shopping, recreation, education, business, spiritual, health or even visiting relatives and friends. It includes transportation to the chosen destination as well as accommodation. As described by *Macintosh, Goeldner and Ritchie* (1995), tourism is “The sum of the phenomena and relationships arising from the interaction of tourists, business suppliers, host government and host communities in the process of attracting and hosting these tourists and other visitors which has a vast potential to contribute to the national income.” In the current era, tourism has been bifurcated into many avenues such as sports tourism, religious tourism, health / medical tourism, culture tourism, rural tourism, spiritual tourism, tea-tourism, wine tourism and many more which can be sustainable. With globalization, sustainability practices have gained prominence.

Sustainable Tourism

Sustainable tourism can be defined as the process of people maintaining change in a balanced environment, wherein the resources, investments, technological development as well as the institutional change are all in accordance and augment current and future potential to meet human needs and aspirations. United Nations declared 2017 as the International Year of Sustainable Tourism for Development which was designated at the UN 70th General Assembly to spread the contribution of the tourism sector to the three pillars of sustainability-economic, social and environmental. [1] Sustainable tourism urges to maintain long term ecological balance, promotes indigenous cultures and works of the local population thereby creating opportunities for their villages and towns through tourism. For example, tourists visiting *Rancho Margot* in Costa Rica get an exemplar space to not only relax and enjoy breath-taking beautiful landscapes but also enjoy food, which is produced organically at the *Ranch*, i.e. the farm. Tourists get to know about sustainability and see how it can be achieved.

Sustainable Tourism in India

Travel and Tourism industry of India is the 7th largest in the world, contributing nearly 9.6% to India’s GDP and estimated to grow by 6.9% p.a. in the next ten years, to become the fourth largest, globally. This is expected to create a multiplier impact on India’s socio-economic growth through development of infrastructure, job creation and skill development, amongst others (*Kapoor, R, and Agarwal, S; 2017*). [2] The practice of sustainable tourism in India is to responsibly engage tourists in village home stays, silk tourism, tribal tourism and

even wildlife ecotourism (*Heather Carrerio, 2018*). [3] The first Tourism Policy was announced by Government of India in 1982 wherein the goal was to encourage sustainable tourism for economic sustenance and integration of socio-cultural fabric, thereby enhancing the image of brand India. Kerala, popularly known as 'God's own country,' was the first state in India to create innovative initiatives for sustainable tourism and has been conferred with the top United Nations Award, UNWTO Ulysses Award for Innovation in Public Policy and Governance for shaping Global Leadership in Sustainability.

Review of Literature

Social media has become an integral platform for every business as it supports marketers to remain connected with their customers in an effective way. The users put in writing their own reviews on blogs, visual communities and social networks, thus providing a platform to share any audio, video, picture or any other media files on YouTube, Flickr, Internet (*Xiang, Z and Gretzel, U. 2006; Pan, MacLaurin, and Crofts, 2007*). In the current era, it is not only about the medium of interaction; social media acts as a multitask performer.

Kiráľová, (2014) Pergolino, Rothman, Miller and Miller, (2012) A destination will be successfully visible through a well-developed communications strategy with the focus on social media. Increase in brand awareness, brand engagement, word of mouth, friends/liking, trust and social validation are the benefits of adopting this communication strategy.

Laurence Chalip and Carla A. Costa (2012) noticed that urban communities are increasingly better off economically than rural communities. The gap between them is represented by differences in wealth human capital, levels of employment and the consequent economic development which can be reduced through sustainable tourism. They advocated that hospitality and tourism have been increasingly considered as a means for rural development.

Robin Nunkoo and Dogan Gursoy (2012) defined economic impacts of tourism as the most valued elements for the host community which enables them to become self-sustainable. Tourism improves the local economy and contributes to income and standard of living which brings in new businesses and creates investment opportunities.

Yadav and Arora, (2012) Social media, as a tool of tourism marketing, can greatly enhance the destinations' reputation and convince the tourism providers that social networking sites are vital element of marketing strategies.

Kaplan and Haenlein, (2010) Social media allow destinations to contact visitors at relatively low cost and higher levels of efficiency which is difficult for the traditional media tools.

Schmallegger and Carson, (2008) agree that sustainable tourist destinations have used social media as a promotional tool for interactive marketing purposes.

Rajasekharan Pillai, (2006) scrutinized the tourism and employment opportunities and found a close relationship between the two. Tourism as an accommodating industry is generous in employment absorption by offering opportunity to wide range of working class from unskilled to highly skilled professionals.

Werthner and Ricci, (2004) state that tourism is an industry that is at the forefront of internet use and online transactions.

Buhalis, 1998 Tourism products are purchased in advance prior to their use and away from the point of consumption. Therefore, timely and accurate information, relevant to visitors needs crucial to visitors' satisfaction and destination's competitiveness.

Need of the Study

Alike different countries across the globe, tourism has the potential to play a major role in delivering sustainable development in India. Promoting sustainable tourist destinations on an appropriate platform facilitates to build a better perception in the minds of travellers, thereby leading to better decision making among the travellers.

Along with the available traditional medium, social media platforms have gained immense popularity among the present generation. This new medium has taken tourism and travel booking experiences to a new height, thereby enabling the visitors to communicate not only with the tour providers but also with visitors who have recently experienced the destination which the others are considering visiting. Since tourism is an abstract product purchased in advance, prior to the use and away from the point of consumption, therefore visitors must rely on descriptions provided on the websites and social media handles. The word-of-mouth (WOM) has become a strategy element of social media marketing and interactive integrated marketing communication (*Fogel, 2010; Spiller et al., 2011*) which has shifted from small groups and communities to large-scale online networks of consumers

(Alexa, 2011), facilitated by social networking sites. Providers of sustainable tourism need to create insightful advertising to promote their locales, create local destination brands and formulate brand building strategies of sustainable tourism products. This study provides deep insights of sustainable tourism and related products of the chosen destination which deserves to be promoted on social media. This study will benefit the government, local population as well as the sustainable tourist providers with the required information on media planning and comprehend their marketing strategies.

Research Objectives

- Understand and analyse the tourism industry of India with reference to sustainable development.
- Identify the sustainable tourism products in India
- Comprehend the role of social media in spreading awareness about sustainable tourism and promoting sustainable tourist destinations.
- Recommend strategies to augment the sustainable tourism in the country.

Area of Study

The study area comprises of two states of India (i) Assam and (ii) Odisha. These areas are accessible easily for the researcher; hence the regions were identified for conducting this study.

1. Assam Assam is a land known for its rich history and cultural vibrancy. The official language is Assamese; however, the local residents can speak Hindi and English. The cuisine of the state is simple, with less spices; rice is the staple food and is used to prepare a variety of dishes. Guwahati, the capital city of Assam is the hub of the state and is also the gateway to the North East India. The ethnicity of the state is very popular when it comes to diverse handicrafts and visual arts, especially the traditional Bihu dance. The ladies drape the traditional Assam Muga Silk Mekhela Chadar which is a product of Assam handloom. (Figure 1) In the rural Assam, every household has a loom and the family members weave the silk and cotton 'Mekhla Chadars' and embroidered 'White Gamochas,' Apart from Bihu, another popular art form is 'Sattriya Dance' (Figure 2 and 3) which has been introduced by the great saint and reformer of Assam, Mahapurusha Sankaradeva in the 15th century A.D. The attire of this dance comprises of milky white, locally woven 'Pat Silk' saree which represents the locality through its various colourful motifs and designs. The markets are packed with beautiful handicrafts and paintings.



Figure 1

Source: Authors' compiled data



Figure 2



Figure 3

Shrimanta Sankardeva Kalakshetra is one of the noteworthy art and craft galleries located in Guwahati which attracts huge footfalls. It is spread across a vast land surrounded with hillocks that exhibits several replicas of Assam's heritage monuments. (Figure 5) It has been reviewed by one traveller on as one stop destination for visitors to witness the rich cultural treasures of Assam. (TripAdvisor May 2019).

The other significant places of tourist interest from Assam includes Kaziranga National Park, Manas National Park, Pobitora Wildlife Sanctuary, Majuli Island, Hajo, Sivasagar, Umananda Island, Silk and Craft Village of Assam- Sualkuchi to name a few. Discussion on Assam shall remain incomplete without the mention of the revered Kamakhya Temple which is located on Nilachal Hills at Guwahati. This temple is one among the fifty-one 'Shakti Peethas' and an esteemed shrine of Shakti in India that holds tremendous religious, historic and archaeological significance that attracts thousands of devotees every day. Huge congregation of pilgrims and tourists gather during the month of June, every year for Ambubachi Mela. (Figure 6 and 7).



Figure 4



Figure 5



Figure 6

Source: Authors' compiled data

Figure 4 Figure 5 Figure

Source: Authors' compiled data

2. Odisha

Odisha, also known as Utkala, entails the land of brilliance and superiority in art and craft which can be noted from the Appliqué Work, Brass and Bell Metal Work, Dhokra Castings,

Horn Work, Pattachitra, Paper Mache, Stone Work, Silver Filigree, Terracotta, Wood Craft, as well as 'Tie and Dye' and 'Ikkat' textile in cotton, tassar and silk. The art forms are visual indicators of an extremely rich socio- cultural legacy of Odisha which is alive in the artistic ingenuity and skills of the craftsmen. The state is well connected with major cities of India and South East Asia. Bhubaneswar, the capital city is one of the smart cities of the country, and well connected with East Coast Railway and a full-fledged International Airport with direct flights to Bangkok and Kuala Lumpur. The state of Odisha is synonymous with the famous temple of Lord Jagannath located in Puri which is an important pilgrimage destination of the Hindus. (Cesarone, Bernard 2012). Thousands of pilgrims wait in long queues every day for the 'Darshan' and have the 'Mahaprasad' which is prepared with much dedication and sanctification. (Rituals of Lord, 2012) The temple's kitchen is the largest in the world. (Karan, Jajati, 2009; Kanungo, Archana 2013; harekrsna.com. 2011; nilachakra.org. 2011).



Figure 7

Figure 8

Figure 9

Source: Authors' compiled data

Figure 7 Figure 8 Figure 9

Source: Authors' compiled data

The above figures (Figure 7 and 8) exhibits the intricate appliqué works of Pipli, a small village near the temple town, Puri. Another popular art form, known as 'Pattachitra Art,' (Vastra -Cloth and Chitra- paintings which is illustrated in Figure 9) gave identity to a crafts village called 'Raghurajpur.' This art form is inspired from ancient culture, decorating the Lord Jagannath and his siblings with vibrant colours and superb artistry thereby attracting large number of tourists in the state, both domestic as well as international.

Research Methodology

The researcher has identified two states of India as the area of study-(i) Assam and (ii) Odisha. This study is an empirical work. The primary data has been collected with the help of structured interview schedule questionnaire. Convenient sampling method was used for data collection as the researcher had easy access to these destinations. Prior to circulating questionnaires amid the respondents, it was pretested and modified to ensure

validity. Questionnaire was distributed to 220 respondents, out of which, usable responses could be retrieved from 197 respondents only. Therefore, the valid sample size for the study was considered as 197.

Data Analysis

Table no 1 below showcases the demographic details of the respondents identified for this study. The respondents were from different age group ranging between 18 years to 58 years and above. Majority of the respondents were from the age group of 49-58 years, followed by 29-38 years and 39-48 years respectively. Among the respondents, approximately 58% were male respondents while the remaining 42% were females. Regarding the marital status, 53 % were married, 36% were single and others comprised of 11%. Majority of the identified respondents were graduate, i.e. 38%; 25% were postgraduates and around 20% of them were of the intermediate levels. Regarding the occupation, 33% of the respondents were entrepreneurs which included tourism providers, followed closely by 24% with government jobs and 23 % from private sectors, while the remaining were students and agriculturists. The monthly income of the respondents ranged from INR 25,000 to more than a lakh per month. Approximately 25% of the respondents are from the income range of INR 26000-50000 per month followed by 18% belonging to the category of INR 76,000- INR 1,00,000 per month and 14% from the category of INR 25,000 per month.

Table.1 Demographic Profile of the Respondents

Variable	Particulars	Percentage
Age	18-28	10.05
	29-38	23.65
	39-48	22.50
	49-58	25.85
	Above 58	17.95
Gender	Male	57.57
	Female	42.43
Marital Status	Married	53.15
	Single	36.09
	Other	10.94
Qualification	Primary	2.11
	Secondary	11.21
	Intermediate	20.37
	Graduate	38.42
	Higher Education	24.89
Occupation	Agriculture	10.58
	Govt. Job	24.32
	Business/ Self Employed	32.74
	Private job	23.58
	Student	8.78
Monthly Income	INR 25000 P M	13.95
	INR 26000-50000 PM	24.79
	INR 51000-75000PM	31
	INR 76000-1,00,000 PM	18.11
	Above INR 1,00,000 PM	12.15

Source: Authors' compiled data

Source: Authors' compiled data

The source of information regarding the tourist destinations are highly crucial. Among the selected respondents, 11% pointed out Google search, 5% blogs, 8% newspapers, 17% travel magazines, 22% on social media, 9% WoM, 12% websites of tour promoter, 6% OOH, and 10% on others which included tourism literature, brochures and many more. This is illustrated below in Table 2.

Table 2 Source of Information about Tourist Destinations

Table 2 Source of Information about Tourist Destinations

Preferred Source of Information	Percentage of Respondents
Google search	11
Blogs	5
Newspaper	8
Travel Magazine	17
Social Media (Facebook, Twitter, Instagram, YouTube)	22
Word of Mouth (WoM)	9
Website of Tour Provider	12
Out of Home	6
Others	10

Source:

Authors'

Source: Authors' compiled data

compiled data

The respondents were questioned whether they have been to any sustainable tourism destination. Among them, 23% were aware and visited sustainable tourist destination, while 77% have never visited any such destinations (*Figure 10*). The study explored to understand from the respondents their preferred mode of booking their holidays. Social media active visitors seek freedom for their choices. 82% of the respondents preferred to plan their own holidays, 13% preferred to plan their holidays through a tour operator and the the remaining 8% were dependent on the travel operators (*Figure 11*). Respondents were also asked to point out their preferred mode of booking tickets. 44% preferred online travel mode (OTM), 48% preferred to book directly via travel company website and 2% through travel agents. (*Figure 12*). For booking hotels, 46% preferred to book by OTM, 52% preferred to book directly through hotel websites, and only 2% booked through local travel agents (*Figure 13*). Booking via travel agents is no more in trend. The remaining 8% were dependent on the travel operators (*Figure 11*). Respondents were also asked to point out their preferred mode of booking tickets. 44% preferred online travel mode (OTM), 48% preferred to book directly via travel company website and 2% through travel agents. (*Figure 12*). For booking hotels, 46% preferred to book by OTM, 52% preferred to book directly through hotel websites, and

only 2% booked through local travel agents (Figure 13). Booking via travel agents is no more in trend.

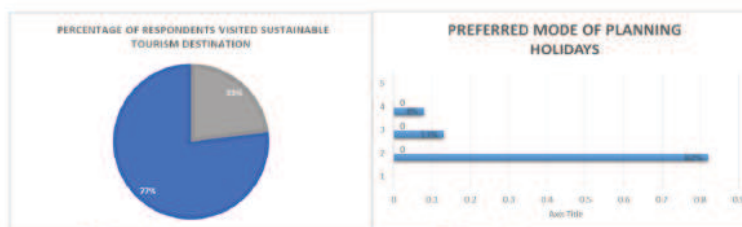


Figure 10

Figure 11

Source: Authors' compiled data



Figure 12

Figure 13

Source: Authors' compiled data

Researcher inquired from the respondents whether status updates, pictures or videos of their friends' vacations exercise any influence on their own travel decisions or to choose any destination, the answer was in positive. Respondents rated 1 being the lowest influencer" and 5 being the highest." 41% of respondents rated twitter as the most important influencer, followed by 33% Instagram, 17% Facebook, 7% Pinterest and remaining 2% others. This is illustrated in figure 14 below.

Figure 14

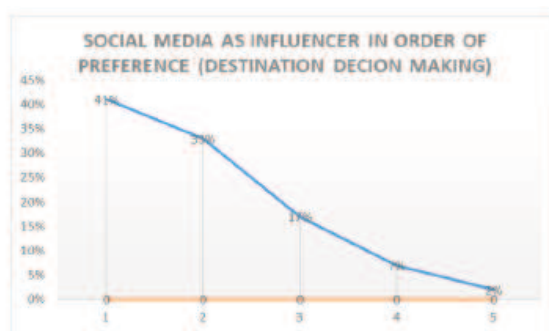


Figure 14

Source: Authors' compiled data

This study explored to identify the sustainable tourism products of Assam and Odisha which are listed below in **Table 4**. These products are the growth drivers of tourism enabling

economic development of the region, facilitating women folks to be self-dependent, generating employment and opening avenues for entrepreneurship in the form of home stays, Airbnb, resorts, local food joints, thereby alleviating poverty and creating a sustainable host community. In Odisha, marketing of these products are done through WoM, print and audio-visual platforms, out of home media (OOH) and also by active participation on social media platforms. The Odisha Tourism has a user-friendly website which facilitates not only the tourists with the required information about the exotic destination, but even allows the travel agents and hoteliers to register their presence and remain visible for the visitors through the portal. However, in Assam, marketing of sustainable tourism products are very limited.

Table 4 Sustainable Tourism Products

Assam	Odisha
Assamese Silk	Adventure Tourism
Adventure Tourism	Archaeological Tourism
Bamboo Crafts	Beach Tourism
Bihu Festivals	Buddhist Tourism
Brahmaputra River Festival/ Ropeway	Bird Sanctuary: Bird Watching
Cruise Tourism	Culture Tourism
Culture Tourism	Eco Tourism
Films Fests/ Film Awards	Handloom and Handicraft
Food Fest	Heritage
Golf Tourism	Medical Tourism
Hill Trekking, Hornbill Festival	Religious Tourism
Island Tourism- Majuli, the largest freshwater Island in the world and found its place in Guinness Book of World Records. Declared as a district w. e. f 2016. Originally 880 sq km. Ideal place for birdwatching.	Sand Art Tourism
Music Fests	Sea Food Fests
Temple Tourism	Temple Tourism
Wild Life Tourism- Kaziranga National Park (UNESCO World Heritage Site) and home to one-horned Rhino; Manas National Park(UNESCO World Heritage Site) also known for Project Tiger Reserve, Elephant Reserve and Biosphere Reserve; Orang National Park	Tribal Tourism and Craft
Sports Tourism	Sports Tourism

Source: Authors' compiled data

Source: Authors' compiled data

In order to determine the awareness level of sustainable tourism and growth potential of the identified destinations, the respondents were explored further. It was intended to comprehend the respondents' insights and sensitivities towards sustainable tourism, media platforms used to connect with the visitors and methodology adopted to promote the destination. It can be observed from the **Table 5** below that majority of the respondents strongly agree that tourism is responsible for economic development of a destination. With the increase in the number of visitors, a rise in the development of facilities could be observed in the regions, such as improved infrastructure, sophisticated hotels and budget home stay in the lines of AirBnB, food joints, theme based resorts and many more which

enhances government revenue and empowers the host population to be economically self-sustainable. It may be noted from the table below that different events such as trade fairs, music festivals, film festivals, food festivals, handloom expo, religious rituals as well sports are the major drivers of tourism in the regions. Since tourism is a service industry which is abstract and highly subjective, therefore prior to deciding upon the destination, visitors search for relevant and trustworthy information, preferably from the government. In order to encourage more footfalls in the destinations, the messages of different adventures, events, festivals or sports need to be promoted creatively on the social medium and preferably by the government.

Table 5 Insights and Sensitivities of the Respondents towards Sustainable Tourism

Insights and Sensitivities of Respondents	Degree of Agreeableness in Percentage				
	S. A	A	N	D	S. D
Tourists arrival gives a positive impact on the economic development of the region.	39.09	20.81	17.77	13.71	8.63
Arrival of tourists are indicators of revenue and income generation	51.78	24.87	10.66	9.14	3.55
Tourism generates employment opportunities	69.04	22.84	5.58	1.02	1.52
Tourism promotion increases revenue of the Government	63.45	28.43	4.57	1.52	2.03
Tourism helps in alleviating poverty	71.57	23.35	3.55	1.52	0.00
Tourism promotes the local entrepreneurship and self-sustainability	66.50	23.86	6.60	1.52	1.52
Events such as trade fairs influence tourists to visit the different regions	37.56	23.86	19.29	11.68	7.61
Art and culture festivals build up tourism	49.24	28.43	10.15	8.12	4.06
Tourism promotion goes together with the socio-economic development	37.06	23.86	18.27	13.20	7.61
Religious places influence your visit	70.05	24.87	3.05	1.52	0.51
The Traditional Art and Craft and Silk are important sustainable tourist products	65.48	27.41	2.54	4.06	0.51
Growth in tourist arrivals boosts economic development of the region	46.70	30.96	11.17	7.61	3.55
Sports – National and International enhances the visibility and also encourages tourism	40.51	19.81	16.77	13.81	9.10
Adequate information regarding to tourist destinations and available facilities should be provided by the Government	53.81	37.06	6.09	2.54	0.51
Awards, both national and international, increase footfall in the destination	26.90	34.01	23.35	10.15	5.58
Tourism promotion activities on social media increases footfall in the tourism destination	45.18	36.04	9.64	6.60	2.54
Film festivals leads to heavy footfall in the destination, hotels and homestays.	34.01	26.40	20.81	12.18	6.60
Upsurge in tourism leads to growth of sales local ethnic art and craft products	44.16	37.06	6.60	8.12	4.06
Social media provide needful information to the tourist	32.99	40.10	13.71	8.63	4.57
Upsurge in tourism brings in more sale of local cuisines	47.16	39.02	5.23	6.08	2.51

Source: Authors' compiled data

Results

This study provides significant insights about sustainable tourism in the selected regions. Different sustainable tourism products have been identified which calls for attention and promotion on social media platforms for maximum visibility. Among the regions chosen for this study, Odisha tourism was found to be present on the social web, promoting its different tourism products. The state is known for its temple tourism, handicrafts, sand art and silver filigree which are promoted on both, conventional and new media platforms. These tourism products possesses immense potentiality to contribute towards sustainable

tourism in Odisha. However things are not the equivalent in Assam. Despite being naturally blessed with biota, the region has been unexplored largely due to insurgency issues, poor marketing and casual attitude of the strategy makers.

Recommendations

Efforts need to be taken by the government, both central and the state, to promote the destinations. Information are sought more on social media platforms such as Instagram, Facebook, YouTube rather than the conventional media platforms. This new media has the power to reach different audience very fast and remain connected with the clients. Tourism events like Ambabuchi Mela, Brahmaputra Festival, Handloom Expo, Majuli Music Festival, Tea Tourism, Silk Tourism and Wild Life Tourism are very popular occasions that take place in Assam every year which needs to be promoted heavily on social media platforms. In addition, different festivals are organized in neighbouring states of North East such as Hornbill Festival in Nagaland, Ziro Music Festival Arunachal Pradesh, Wangala Festival of Garo Tribes in Meghalaya which deserves equal attention. People planning to visit Assam may be encouraged to stopover at the neighbouring seven sisters of North East which again needs to be promoted on the new media. As announced recently, the 65th Filmfare Award shall be organized in Guwahati on February 15, 2020. This mega event will bring in a facelift of the entire state. With rich resource of silk and tea, much can be done to promote 'Silk Tourism' and 'Tea Tourism' by organizing specific event and promote on social media. The "Awesome Assam" campaign launched by the Government of Assam with noted actor Priyanka Chopra as the Brand Ambassador need to be extensively promoted. The much awaited Indo- Japan annual meet scheduled to be held in Guwahati in the month of December 2019 should be able to increase the visibility of the state.

Odisha has been on the tourist map since long. The state tourism department has been taking considerable efforts to promote its tourism product on social media and Out of Home (OOH). In addition efforts need to be taken to promote the local artisans on social media and enable them to be empowered. For example, Padmashree Sudarshan Patnaik an eminent Sand Artist from Odisha, if promoted heavily on social media platforms, will be earn better visibility.

Conclusion

The evolution of internet has brought in a huge change in the consumption trends of media worldwide, since the last decade. Since tourism is an industry which generates revenue as well as empowers and enhances sustainability among the local population, it requires a strategic media platform for promotion which is within the easy reach. From this study it can be concluded that promotion of sustainable tourism destinations on social media

platforms shall always be fruitful and make the destination more visible and within easy reach of the visitors.

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Tourist Prediction Using Machine Learning Algorithms

Bilal sultan Abdualgalil, Sajimon Abraham

Mahatma Gandhi University

Abstract

This article briefly reviewed the techniques of machine learning that are used to predict tourism. Also reviewed previous studies on the use of machine learning in the domain of tourism, and we used these techniques to predict number of tourists arrived in India with of algorithms like SVM, Naive Bayesian, Logistics Regression, Random Forest, Decision Tree, KNN and SVR, this study used two datasets, the first dataset contains 48 rows and 42 columns that obtained by merging from four quarterly datasets(q1,q2,q3, and q4) and second dataset is first quarter (q1 one of the four datasets) that consists of 12 rows and 42 columns to predict number of the tourists. The result obtained was good accuracy when using the dataset second in the prediction.

Keywords: *Machine Learning, SVM, KNN, Tourist, Prediction, Logistic Regression*

I. Introduction

The importance of tourism in the world helps the tourists to get used to the culture, customs, and conventions, language, and mode of living of the people at the destination. The advantages of tourism include job creation, foreign currency earnings, infrastructure development, poverty eradication, inequality reduction, and balanced regional development. In addition, tourism is important for creating world peace [1]. Machine Learning is leading to technological innovation in all fields, with a great impact on the tourism sector. There is no difficulty in change diametrically the forms of commercialization and the way the travel industry works. In the last, tourism forecasting has attracted the study of various researchers mainly due to the importance of tourism in national economies. Using the time-series and regression methods have mostly dominated forecasting models of the current research approaches. Although these traditional techniques have proved some success in tourists forecasting new methods such as machine learning methods can very contribute to this area. Actually, Machine learning methods have been successfully applied to many forecasting application including tourism forecasting [2]. In section II related literature in the tourism area and machine learning. In section III theory of Machine learning especially for prediction. In section applications machine learning in tourism. In section V Comparison of Machine Learning Algorithms in Tourist Prediction and conclusion.

II. Literature Review

Oscar Claveria et al (2015) in their research have used three machine learning techniques is support vector regression, Gaussian process regression, and neural network to improve forecast accuracy. Also, they have built one set of forecasts by estimating models on the aggregate series, another set by using the same models to forecast the individual series prior to aggregation and then compare the accuracy of both approaches [3].

S. Cankurt et al (2015) In their analysis, they analyzed the tourism demand series by considering some potential trends for incorporating complex time and tourism demand series relationships and enhancing forecast accuracy by extracting additional information available from the related data series in the tourism demand forecast. Also, they have employed multilayer perceptron (MLP) regression, and support vector regression (SVR) machine learning models [4].

Tasfiqul Ghani et al(2018) in their research, they have used a smartphone application to introduce machine learning in its program like Google Maps API and finds out the location of all points of interest added to the database by the Admin. The user is able to log in to this app using their basic information or Facebook details. They can deselect attractions which they do not prefer. The machine learning algorithms used in this application will find the best routes to reach destinations one by one. Users also are able to write notes as a mean of diary entry which will be saved on their phones offline database. Users may allow public access to those entries or restrict them from sharing too [5].

Indri Hapsari et al (2018) in their research developed the prediction model for visiting time. Multiple linear regression becomes the popular model because there are six factors that influenced the visiting time, for example, access, government, rating, number of reviews, number of pictures, and other information. Those factors become the independent variables to predict dependent variables or visiting time. also, they used the Ordinal Logistic Regression (OLR) by transforming the interval data-independent variable into ordinal data using Expectation Maximization. Then they used the classification algorithm in machine learning by using five top algorithms which are Linear Regression, k-Nearest Neighbors, Decision Tree, Support Vector Machines, and Multi-Layer Perceptron [6].

Mohamed Elyes Ben Haj Kbaier et al (2017) in their paper, have focused on building a personalized recommender system in the tourism field. they proposed a hybrid recommender system that combines the three most known recommender methods which

are the collaborative filtering (CF), the content-based filtering (CB) and the demographic filtering (DF) in order implement these recommender methods, they have used different machine learning algorithms which are the K-nearest neighbors (K-NN) for both CB and CF and the decision tree for the DF. To enhance the recommendation accuracy, we used two hybridization techniques: switching and weighted. For the weighted approach, a novel linear programming model is applied to obtain the optimal weights' values [7].

Da-Jie Lin et al (2019) in their research, proposed three approaches to predict the travel time, these approaches its Gradient Boosting Regression Tree(GBRT), K-Nearest Neighbors(KNN) and Linear regression(LR). The results showed to all machine learning methods used in this paper are well to predict the travel time[8].

MehrbakhshNilash et al (2017) In their paper, proposed a new recommendation technique based on multi-criteria CF to enhance the predictive accuracy of recommender systems in the tourism domain using clustering, Dimensionality Reduction(DR), and prediction techniques. Also, they used Adaptive Neuro-Fuzzy Inference Systems (ANFIS) and Support Vector Regression (SVR) as prediction techniques, Principal Component Analysis (PCA) as a Dimensionality Reduction(DR) technique and Self-Organizing Map (SOM) and Expectation-Maximization (EM) as two well-known clustering techniques. To improve the recommendation accuracy of proposed multi-criteria CF, a cluster ensembles approach, Hypergraph Partitioning Algorithm (HGPA), is applied to SOM and EM clustering results [9].

Lin Shi-ting et al (2014) In their thesis, they have introduced the basic principle and process of ϵ -SVR (one algorithm of Support Vector Machine for Regression, SVR) is presented. This method is used to model tourist traffic prediction and predict one series of data. Two different kernel functions are employed, and the former's performance is evidently better than the latter. ϵ -SVR's performance is also compared with that of the traditional time series analysis method, and the former outperforms the latter[10].

Kyoungso Son et al (2018) in their research, have implemented the LSTM machine learning method to predict visitors in a certain tourism place using machine learning. LSTM is one of the variations of RNN networks. they got some positive results showing its applicability in a real environment[11].

Xinquan WANG et al (2015) in their research, In order to more accurate prediction of annual tourism, using the synthetic index method to calculate the tourism market boom

index, after timing phase space reconstruction, merge the original travel date and the tourism market boom index to get the sample. using extreme learning machine algorithm to train sample data. By comparing the support vector regression algorithm show that: the model based on extreme learning machine algorithm make higher precision, better fitting degree can more accurately estimate and forecast the tourism market, the application of this the model can provide guidance for the tourism market to achieve a reasonable allocation of resources and healthy development[12].

Siwen Zheng et al (2016) in their research, used kind of recommendations as a prediction problem based on the tourist's historical visiting sequences and supervised machine-learning algorithms, namely Random Forests (RF)and LambdaMART. Then, a comparison of five different machine learning algorithms, namely Random Forests, LambdaMART, Ranking SVM,ListNet, and RankBoost have been taken on this feature set, results showed that the Random Forest outperformed the other algorithms with regard to prediction accuracy[13].

Amir Khatibiet al (2018) In their work, have suggested that access data from online social networks and travel websites, in addition to climate data, can be used to support the inference of visitation count for many touristic attractions. Social media and climactic data each contribute to prediction accuracy. Further, the two are complementary and are well synthesized using Support Vector Regression [14].

NesreenKamel et al (2018) in their research, have considered different machine learning models that can be applied in the tourism prediction problem and to show the performance of seven well-known machine learning methods [15].

III. Algorithms of Machine learning especially for prediction

In this section, we discuss the different types of machine learning techniques and explain how they have been used for analyzing data related to tourism. Usually, two types of machine learning activities are common in tourism – association learning and classification learning. In association learning, the learning method searches for associations or relationships between features of tourist behavior. Also, this known as unsupervised learning. The second type of machine learning is classification learning. This learning scheme takes a set of classified examples from which it discovers a way of classifying unseen examples. This is a form of supervised learning. In the next, we explain the various machine learning techniques used in tourism. There are three used uses of machine learning techniques in tourism are (1) forecast expenses of tourists, (2) analyzing profiles of

tourists, and (3) forecast the number of tourist arrivals. In this section brief for the ten machine learning techniques are used to support these activities[16].

1. Logistic Regression: In logistic regression, there is a lot of data whose classification is prepared by building an equation. It is applied to predict discrete values "Binary values like 0/1, yes/no, true/false" based on a set of independent variables. Because it predicts the probability, its output values between 0 and 1 as expected. Logistic regression all generates the coefficients to predict a logit transformation of the probability.

2.Linear Regression: In linear regression, to build a model (equation) based on the data. Then use a linear regression model to make predictions about one variable based on particular values of the other variable. The variable is making predictions about is called the (dependent variable) also referred to as (y), the response variable. The variable that is using to make these predictions is called the (independent variable) also referred to as (x), the predictor variable.

3. Decision Tree: it one of the supervised learning algorithms. The decision tree can also use in classification and regression. In a decision tree building algorithm first the best attribute of the dataset is placed at the root, then the training dataset is split into subsets. Splitting of data depends on the features of datasets. This process is done until all data is classified and find the leaf node at the various branch. Information gain can be calculated to find which feature is giving us the highest information gain. Decision trees are created for making a training model that can be used to predict class or the value of the target variable.

4. Support vector machine: The support vector machine algorithm is a binary classifier. Support Vector Machine is an algorithm announced by Vapnik in 1995. SVM is so popular a machine learning technique that it can be a group of its own. It uses a separating hyper-plane or to define decision boundaries among a set of data points classified with different labels. It is a strictly supervised classification algorithm. In other words, the algorithm improves an optimal hyper-plane utilizing input data or training data and this defines decision in turn classifications new examples. Based on the kernel in use, SVM can perform both linear and nonlinear classification.

5. Naive-Bayes: It is a supervised algorithm for building classifiers based on Bayes theorem used classification methods. Naive Bayesian model is easy to build and especially useful for

large data sets. In this algorithm occurrence of each feature is independent of occurrence various features. It needs a small number of training data for classification, and all terms can be precomputed thus classifying becomes easy, fast and effective. Also, Naive Bayes is an advanced classification method. Bayes theorem provides a method of calculating posterior probability $P(c|x)$ from $P(c)$, $P(x)$ and $P(x|c)$. As the below equation:

$$P(c|x) = \frac{P(x|c)P(c)}{P(x)} \quad (1)$$

6.KNN: This algorithm is used for classification and regression. It is the simplest algorithm of machine learning algorithms. It collects the cases and new data, it checks the majority of the k neighbors with which it resembles the most. KNN makes predictions using the training dataset directly. KNN does not assume any underlying data distribution and so it is called non-parametric.

7. K-Means Clustering: It is an unsupervised algorithm, it is an algorithm to classify the objects based on attributes and features into K number of objects. K is a positive integer number. To group the datasets into clusters initial partition is created using Euclidean distance. The grouping by reducing the sum of squares of distances between data and the corresponding cluster centroid. Therefore, the purpose of K-mean clustering is to classify the data.

8. Random Forest: It is a supervised classification algorithm. The multiple numbers of decision trees taken together form a random forest algorithm i.e the collection of various classification trees. It can be used for classification and regression. Every decision tree includes some rule-based systems. For the provided training dataset with targets and features, the decision tree algorithm has a set of rules. In a random forest algorithm unlike the decision tree, in this algorithm no need to calculate information gain to find the root node. It uses the rules of all randomly created decision tree to predict the outcome and store the predicted outcome. Moreover, it calculates the vote for each predicted target. So high voted prediction is considered as the final prediction from the random forest algorithm.

9. Dimensionality Reduction Algorithms: These algorithms are used to decrease the number of random variables by taking some principal variables. Feature extraction and feature selection are types of dimensionality reducing methods. It is done by PCA, Principal

component analysis is a method of extracting important variables from a large set of variables. It extracts the low dimensionality set of features from high dimensional data. It is used basically when we have more than 3-dimensional data.

10. Gradient boosting and Ada Boost Algorithms: Gradient boosting algorithms are regression and classification algorithms. AdaBoost only selects the features that improve the predictive ability of the model. It works by taking the base of the algorithm like decision trees and iteratively improving it by accounting for the incorrectly classified examples in the training set. Both algorithms are used for the boosting of the accuracy of the predictive model. There are three types of Gradient Boosting Algorithms is GBM, XGBoost, LightGBM, and Catboost.

IV. Applications in Machine Learning in tourism

The tourism industry is based on services that include travel, transportation, accommodation, and similar services. It is an ecosystem in which billions of dollars change hands every day. it depends on technology for its daily operations. In such a huge sector, there is a continuous need for fresh and innovative technology to make business processes more efficient and increase profitability. It is an industry that meets the customers' wishes, more than their needs. Therefore, competitors strive to offer a better service at a lower price to their customers. Resorting to machine learning can improve these strategies.

i. Prediction of seasonal demands for services

Tourism means talking of a business marked by the seasonality of demand. This temporality may be linked to climatic seasons or no. In any case, it is during the peaks when tourism- product suppliers have the chance to earn more money and wish to capitalize on this chance.

Machine Learning algorithms can be used to achieve that purpose. A computer simply and accurately finds the correlation between the factors that cause this seasonal demand by analyzing raw data from the past and predicting future trends. This process, called Predictive Analytics on machine learning algorithms, uses the patterns of the past to predict future events.

ii. Pricing strategies

Tourism-product suppliers use competitive prices as one of their major strategies to attract customers. Firms try to provide price changes without compromising their profits to attract the maximum number of customers. Here, Machine Learning proves to be useful.

Seasonality, the history of the hotel or tourist service, local events, competition or promotions of third parties... all these data can be analyzed through predictive models that can be used to offer the best possible prices, providing companies with an advantage on the market.

iii. **Personalized recommendations**

Ten years ago, important travel sites such as TripAdvisor and Expedia have used recommendation engines to offer users the holiday packages that best fit their consumer profile. The engines collect budget-specific data, preferences and a customer's details to give you personalized travel recommendations. Information obtained from various sources and service suppliers is used to find suitable alternatives by comparing options using Machine Learning algorithms.

iv. **Customer experience**

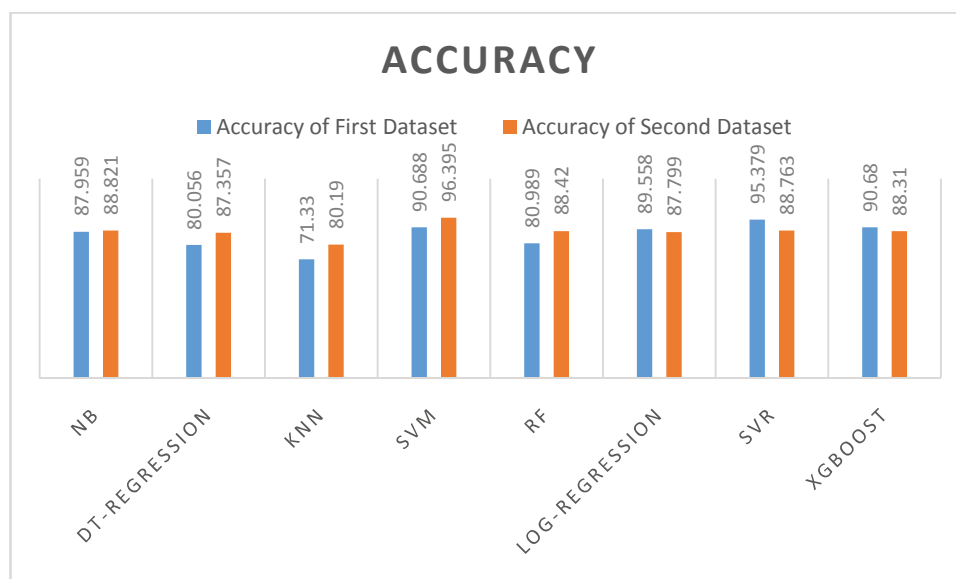
The customers of the travel industry are varied, and so is their consumer profile. Their demands and expectations are highly disparate. Meeting them individually is the success measure of any company in this sector. All customers want to be treated according to their preferences, and that is why all the sectors that have such a broad target audience apply market segmentation. In this process, the entire spectrum of customers is subdivided into segments that have similar characteristics and, more or less, the same demands and expectations. Thus, a much more personalized and specialized service can be offered. When applying Machine Learning algorithms, the classification becomes more accurate, being performed into smaller and smaller groups. This may include subgroups that had not been previously identified, and the quality of the service improves as it is thoroughly customized to the individual customer. This enables customers to enjoy a better experience as consumers, which makes them happier, and in turn, improves the profitability of the business. Machine Learning leading the way for technological innovation in all fields, with a great impact on the tourism sector. The potential of these processes is very promising. There is no doubt they can change diametrically the forms of commercialization and the way the travel industry works.

V. **Comparison of Machine Learning Algorithms in Tourist Prediction**

In this section, the study has applied some popular machine learning algorithms in prediction, to predict the number of tourist travels in India. For this study, using the dataset obtained [from www.Kaggle.com](http://www.Kaggle.com) website. We used the Logistic Regression, KNN, SVM, SVR, Decision Tree Regression, Naïve Baysan, and Random Forest

algorithms. The algorithms were compared based on best predicted. The experimental result is given in the below table.

No.	Algorithm	Accuracy	
		First Dataset	Second Dataset
1	NB	87.959	88.821
2	DT-Regression	80.056	87.357
4	KNN	71.330	80.190
5	SVM	90.688	96.395
6	RF	80.989	88.420
7	Log-Regression	89.558	87.799
8	SVR	95.379	88.763
9	XGboost	90.68	88.31



Conclusion

This article compared the prediction performances for seven algorithms, namely Decision Tree Regression, SVM, KNN, NB, SVR, Random Forest, and Log-Regression between first a data set that consists of 48 rows and 42 columns Which we obtained by merging q1,q2,q3, and q4 datasets, and second dataset (q1) that consists of 12 rows and 42 columns to predict the tourists. The first dataset contains yearly and the second dataset contains the first quarterly tourist arrival data to India, from different countries.

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The College Classroom and a Sustainable World: Ruminations on Practice, Experience and their Connections

Simon A. Akindes

University of Wisconsin-Parkside

Abstract

In a world where citizens are globalized, often against their own will, what does it mean to teach in a US Midwest college classroom? How do I negotiate curriculum and praxis in a context where students are formatted to espouse dominant academic narratives that have created an unsustainable globalization? How do I interrogate hegemonic discourses mediated through disciplinary canons, institutional culture and pre-conceived views? In this paper, I interrogate my long effort to create a classroom culture geared towards a better ecology for all. I engage a deep examination of how teaching for a sustainable future can happen. I have used high impact practices, but they are limited in bringing about meaningful structural changes. The advent of a sustainable world, specifically for those for whom globalization has brought sustained misery, requires a systematic shift of priorities and an emphasis on creativity, innovation and imagination in the classroom, school administrations and industry, with a new set of values.

Keywords: Sustainability, High Impact Educational Practices, College Classroom Teaching, Hegemony and Teaching, Critical Reflective Teaching.

In Ecuador and Bolivia, from September to December 2019, indigenous peoples have protested to preserve the advances and social progress they had made since the early 2000s under leftist governments. In previous decades or even centuries, they have been integrated by force, political control and legislation, into a globalization process that primarily served the interests of wealthy and powerful groups that controlled their lands and resources. In Egypt, Lebanon, France, England, Iraq, Yemen, and many other places around the world, the year 2020 was marked by mass disavowal of the accelerated economic globalization that consolidated the powers of political and economic elites through sophisticated networks, military interventions, laws and hegemonic cultural practices.

In Chile, the political movement, after four decades of neo-liberalism brought up by the dictatorship of General Augusto Pinochet, various movements and political parties have demanded a new constitution and a new dispensation with more transparency, less

inequality and privatization, affordable access to public education and health care, and more political representation for indigenous groups, especially the Mapuche who never gave up their resistance to Spanish colonization and to the current encroachment of their land by multinational corporations. The Chilean case presents the characteristics of a political and economic system that was conceived at the University of Chicago by economists led by Milton Friedman, known as the Chicago Boys. It demonstrates that knowledge, produced and diffused by universities, can have a long-lasting effect on people's lives, contrary to the commonly held belief that the classroom or the university may be an island lost with theories produced in its ivory towers. It demonstrates that the classroom matters and is connected to the world in many dimensions.

Based on this assumption and my theorization of globalization, this paper examines the question of my responsibility, as a college professor. To what extent does my classroom practice reinforce or weaken dominant practices and thoughts? That question has occupied my mind for as long as I have been in the classroom. What is my responsibility or what is that of teachers in today's world where nationalism is becoming again the order of the day (India, China, Brazil, the United States of America, Hungary, Britain, etc...), where vitriolic racism, ethnicity and religious bigotry are instrumentalized against the poor and the weak, where sexism still prevails, and where a series of seemingly unstoppable economic crises keep occurring, jeopardizing poor people's lives. What has been my responsibility in how I handle the curriculum, the discipline and its cannon, assessment, teaching practices, especially when teaching acts and their results must be systematically quantified and measured?

Sustainable globalization

The concept of sustainable globalization, in its simplest understanding, implies avoiding the depletion of our resources, recycling what we use or continue using it a slower rate. By doing so, we can make the planet a better place. My conceptualization of "sustainable globalization" goes further. Sustainability does not refer simply utilizing fewer resources and taking care of the environment. It places human beings at the core of nature and, as much as we need to take care of the earth, we also need to take care of human beings. As Boff (June 9, 2019) puts it "We must produce to meet human demands but in line with the rhythms of each ecosystem, always taking care that goods and services can be used with a shared sobriety, with a view to future generations" (Boff, 2019, Author's translation.) The notion that the earth can replenish itself and that, in a spirit of solidarity with other human beings, it is important to share with future generations goes against the dominant "technocratic paradigm" that, according to Pope Francis, is "productivist,

mechanistic, rationalist, consumerist and individualist” and that “can only lead to catastrophes” (in Boff, June 9, 2019, author’s translation)

Colonized

Being born in a colonial context, I did experience an extraverted type of education, very Eurocentric in nature. The curriculum was designed to reinforce the status quo, to legitimize colonial expansion and inhumanity and deculturalize people who had been in existence thousands of years before European expansion. For the colonizer, the colonized is not another human being, another brother or sister. He is part of nature that must be tamed for profit. Coming to the USA to study provided another insight in the global educational system, the global colonial system, with its omissions, distortions and lies, its dominant ideologies. It provided an understanding of how the “manufacture of consent” — to use Chomsky’s formula— prevails in education and the media, serves to reinforce established hierarchies, and strengthens mechanisms of “cultural hegemony.” What does it mean to be in a classroom in the US Midwest? How does one teach in a context that has tailored the curriculum and educational philosophies from the perspectives of dominant groups? What does it mean to teach in a society where more is never enough, where self-staging, self-branding and self-promotion take precedence over the act or object itself? How does one teach in a context that produces the same values of capitalist consumerism, fetishism of growth and other doctrines that have made our world “unsustainable”? How does one teach from a place that has created melancholy for so many, for so long at home and elsewhere?

After decades of “teaching,” I have not found definite answers. I am still wondering what impact I have, if any, and if it is worth it? When students are exposed to my praxis, what comes out of it, for themselves certainly, but in a more significant way, for their family and society? Do they understand the link between power, hegemony, what they learn, how they learn it, and the making of the world around them? Are they able to slow down and resist dominant ways that create misery for many, while a few continue to enjoy the fruits of others’ labor and resources? What kinds of leaders will they become? Ken Robinson (2011) believes education must foster imagination, creativity and innovation, principles that are at the core of “creative leadership”(p. 219). For a sustainable world, these core attributes are necessary and must be cultivated. They start in the classroom, but school administrations, parents and other stakeholders must share the same values. As Robinson (2011) points out “Creating a culture of innovation will only work if the initiative is led from the top of the organization. The endorsement and involvement of leaders means everything, if the environment is to change” (p. 219).

Teaching As I Conceptualize It

I began teaching decades ago in the most traditional teacher-centered mode. As I listened carefully to my students, I started viewing my role differently. I radically changed my practice. I have now become a scholar of learning, interested in self-transformation and transformation beyond the classroom. I have moved from a controlled and competitive classroom atmosphere to one based on collaboration, openness, transparency and honesty where the students and I acknowledge our own subjectivities and vulnerabilities. Teaching must trigger moments that lead to critical and reflective learning and sharpen critical lenses. Through questioning, students get to the complexity of matters that, on the surface, look simple. Asking questions is anchored in observations and deep examinations that connect personal trajectories and experiences to create knowledge. For example, why is it that schools of business continue teaching models that keep imposing producing more frequent cycles of similar crises, without questioning dogmas and fallacies like the free market, democracy promotion, terrorism?

My practice challenges traditions that dispense factual information. For example, in Political Science, definitions of democracy are offered and reinforced comfortable and dominant elite practices. The fluidity of social and natural phenomena, and their permanent evolution demand that we continuously question and revise previously established “truths.” My practice problematizes the traditional power/knowledge complex and, as a consequence, it displaces me, the teacher, as the ultimate source of knowledge. Students then risk their opinions, ignorance and knowledge, and come up with new understandings.

Teaching is an act of positioning oneself in a world. Besides technicalities, or despite and sometimes against them, teaching, for me, remains a quintessential political act where students develop analytical and creative tools, as well as ethical dispositions to read the world and eventually transform it for all of us. One source for observation and inspiration for new ways is indigenous knowledge. It packs a lot of wisdom and habits for a sustainable world, as in South Dakota, Bolivia or Ecuador. As a Brazilian Pataxó chief reflected at the end of a roundtable with indigenous representatives of different branches of knowledge “I don't understand your speech; everyone wants to protect nature; I am nature and I protect myself” (Boff, 2019, author's translation.) In my career, more at this stage than in the beginning, the challenge is how to infuse my praxis with these values.

Teaching As I Do It

I have moved strongly in the direction of “think, make and create” as opposed to “sit and follow instructions.” I now believe that “less is more,” when it comes to covering the

materials. I focus on being myself, instead of clumsily performing a role that I am invested with by "disciplinary" or "institutional" mission and habits which eventually lend themselves to artificiality.

In their book "The Power of Moments: Why Certain Experiences Have Extraordinary Impact," Chip and Dan Heath (2017) identify four elements for defining moments:

1. Elevation: "They rise above the everyday. They provoke not just transient happiness, like laughing at a friend's joke, but memorable delight."
2. Insight: "They rewire our understanding of the world"
3. Pride: "They capture us at our best — moments of achievement, moments of courage"
4. Connection: "They are social... These moments are strengthened because we share them with others."

My objective is to create a classroom that incorporates all those four elements, with a view of preparing students to be critical citizens and to care for their fellow human beings, their neighbors. It is challenging, exciting, but it can be discouraging when cultural traditions, both societal and institutional, do not promote it.

I believe less in grades, in quizzes, lectures and exams. I have adopted various techniques for my students to connect at different levels. I have used participatory methods: debates, panel discussions, consulting reports, fishbowl discussions and other formats of group discussions, presentations and other methods such as portfolios, etc. that could be characterized as high impact educational practices (HIPs). I have filmed students' performances.

"*Own It*," is an assignment I created for students to demonstrate their knowledge through a poem, song, cartoon, monologue, skit, or other performances. The activity is not graded, but surprisingly, students invest a lot more time and effort in it than in regular assignments.

I also use an open assignment called "Creative Piece Authoring" in which students produce a fictional piece or create a project alone or in a group on their understanding of a specific political event, personality, idea or movement.

These two assignments have taught me three essential lessons:

1. The desire to please peers and professors plays a big role in students' motivation;
2. Grades are not the ultimate motivating factor;

3. Reflective critical thinking takes place more efficiently in non-coercive and open environments.

My goal could be summed up in the following: prepare students to discover their potential, engineer new knowledge with a view of self-transforming themselves as individuals, transforming their communities and transforming the world, one neighbor at a time.

I have long adored high-impact practices, but their impact is limited without practicing critical reflection and without adding an ethical dimension to them. Brookfield (2017) asserts that Critical reflection happens when teachers uncover how educational processes and interactions are framed by wider structures of power and dominant ideology... Critical reflections happens when teachers try to uncover assumptions and practices that seem to make their teaching lives easier but that actually end up working against their own best long-term interests — in other words, assumptions and practices that are hegemonic. (p. 9)

On the other end, the ethical nature of teaching becomes meaningful and powerful when I determine my practice in light of Pope Frances' reminder to the US Congress on September 24, 2015:

Let us remember the Golden Rule: "Do unto others as you would have them do unto you" (Mt 7:12). This Rule points us in a clear direction. Let us treat others with the same passion and compassion with which we want to be treated. Let us seek for others the same possibilities which we seek for ourselves.

In conclusion, teaching, as I have conceptualized and practiced it, has changed over my career with my own "conscientization." I have evolved from a "technocratic paradigm" to a more organic form of being in the classroom. Making students aware that their learning is also to make the world a better place for all is not easy. The world starts with our neighbors, and if we can help protect our neighbors from predatory forces and make sure that they live a decent life, we would automatically take care of the world. My teaching requires of me honesty, risk-taking, self-confidence, ethical integrity and a sense of inconclusiveness. My approach is sometimes bumpy due to personal contradictions or inconsistencies. Students' expectations and long established societal and institutional traditions can be daunting obstacles. Whether I reach my goal or not, is a question of time and long-term impact.

However, I experience a deep sense of accomplishment and fulfillment when, as on Christmas Day in December 2008 at 7:27 PM, a student emails me:

Thank you for a wonderful semester. I learned a lot from you. Your way of thinking and your outlook on life have been truly inspirational to me. I wanted to say that on the last day of class, but I didn't want you to think that I was just saying it for a good grade; I wanted you to know that really really I meant it. I hope to see you around. (email correspondence, December 25, 2008)

Or when a student, graduating in June 2017, confesses the following in an interview in the local newspaper:

So, in addition to thanking her employer for encouragement and Ford for inspiration, she thanked political science professor Simon Akindes for helping her persevere. "When I would say, 'This is hard. I don't know if I can do it,'" he would just pick me up and remind me my kids are watching," Diaz said. (Tatge-Rozell, 2017)

Such words have kept me going and sustained my belief. There is hope and life for teachers.

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Author

Dr. Simon AdetonaAkindes

Dr. Simon A. Akindes is Professor of Political Science and Director of International Studies at the University of Wisconsin-Parkside in the USA. He also teaches in the PH.D program of West Africa Science Service Centre on Climate Change and Adapted Land Use at the University of Lomé (Togo). He is a consultant for the UNESCO Culture of Peace Program, for the Yamoussoukro School of Peace Initiative in Côte d'Ivoire and the African American University of Central Africa in Equatorial Guinea. Professor Akindes loves sports, music, photography and writing as ways of being in the world. He created and Non-Governmental Organization, Tous au Sport, (All to Sports), and a Foundation for girls 'education in Benin, and participates in various initiatives across Africa. He has delivered numerous presentations and published book chapters and in peer-reviewed articles on education, democratization, political and social movements in Africa, civil-military relations, popular music and sports.

The Comparative Research of Autonomous and Independent Foreign Language Learning in Russian and International Contexts

Evgenia Nikolaevna Belova

Herzen State Pedagogical University of Russia

Abstract

The paper deals with the varied interpretations of autonomous learning in Russian and international contexts. As the terms 'autonomous' and 'independent' are frequently used interchangeably in a Russian context, the comparative analysis of autonomous and independent learning has been conducted. Rationale for varied representations of autonomous learning in both contexts are provided. The role of fostering autonomy in foreign language teaching is investigated and compared in both contexts. Russian and international differing perspectives on autonomous learning considerably affect the foreign language teaching methodology design and learning outcomes. The foreign language methodology within autonomous learning resulting from the distinct understanding of the concepts under discussion has been revealed. The national features of non-linguistic university student cohorts are taken into account. The critical approach to reviewing the literature on this issue is adopted throughout the paper. Russian and international educators' action research findings are considered. The implications for further research are suggested.

Keywords: autonomy, autonomous learning, independent learning, holistic approach

Introduction

The approach to teaching and learning adopted in accordance to the state standard to higher education and main goal to language education set in the curriculum have impacted the methodology chosen by non-linguistic university teachers in Russian and international contexts. Consequently, inefficiency of methodology chosen may result from focus on either autonomous or independent learning in language classrooms in both contexts. However, the research demonstrates the inconsistency of the terms 'independent learning' and 'autonomous learning' in international and Russian educators. This may cause the misunderstanding of language teaching methodology principles in both contexts. Therefore, our current research aims to investigate the relationships between the terms, provides the rationale for any inconsistencies in terminology and offer implications for teaching practice and further research.

Methodology

Critical approach and comparative research methods underlie this literature-based paper.

Related Work and Discussion

In a Russian context autonomous learning is contextually arranged: the focus on persons' individuality and his/her use of technologies in a learning process (Koryakovtseva, 2010; Tambovkina, 2014). An international perspective adopts a holistic approach to autonomous learning: the emphasis on interdependence in learning trajectory construction and change of teachers' and learners' attitude towards a learning process (Benson, 2011; Kumaravadivelu, 2012). The rationale for the Russian's view can be explained by theory-based methodology focus, the spread of infocommunication technologies and adoption of competency-based approach to learning in university settings. This international perspective may be explained by practice-oriented methodology emphasis. Freedom of choice is a key element in this in the latter perspective (Benson, 2011; Kumaravadivelu, 2012). Autonomy is seen as a strategy of principled pragmatism in education (Kumaravadivelu, 2012). Emphasis on this strategy will lead to the interconnection of cognition, activity and constrains. This may help eliminate the governmental, establishmental and societal constrains in both contexts.

Russian perspective on autonomous and independent learning priorities independent learning. In a Russian context independent learning is defined as an ability to manage learning independently, that is without a teacher (Koryakovtseva, 2010). Independent learning entailing to one's learning management allows learners to focus on their interests and preferences, independently decide on resources when planning their learning. The teacher acts as resource to independent learning. This learning comprises goal-setting, content, evaluation and methodological aspects (Koryakovtseva, 2010). Content of training sessions at a self-access centre comprises the development of learning competency that is learning to learn skills in a Russian context among university students (ibid). However, according to an international perspective, this definition resembles self-directed learning (Benson, 2011; Büser, 1999). Self-learning as a part of autonomous learning is designed in a form of elective course for linguistic senior university students to master the self-initiated additional language learning methodology and to develop learners' self-learning skills (Tambovkina, 2014). Independent and self-directed learning as a part of autonomous learning is conditioned to develop the foreign language grammatical communicative competence among secondary school learners of English through a Russian online course with learning materials (texts, exercises, grammatical textbooks): to help them master the basics of English grammar (Merzlyakov, 2013). Resource-based, technology-based and learner-based approaches to fostering learner autonomy are adopted as pupils learn the

English grammar through online platform and their preferences are considered. Pupils are to choose the texts to read, to pace their learning and perform the amount of exercises, namely test-based, required to acquire the language knowledge (ibid). We assert that competences being a capacity to perform an activity, tests-based learning may not yield the competency attainment. However, in practice in Russia the teachers may give their students some tasks to complete at home which would be checked the following lesson. Thus, independent learning at a Russian university entails to learners' work on the tasks given by their teacher for homework. Thus, autonomous learning in an international context occurs in the classroom and during extracurricular activities in international contexts (Benson, 2011), whereas in a Russian context independent learning as part of autonomous learning is implemented mainly as an after-class form of learning.

International language learning system considers autonomous learning, independent learning of which is learning as a stage whereby language learners have gained higher level of learner autonomy in the classroom and during extracurricular activities in an international context (Benson, 2011; Büser, 1999). Autonomous learning is a type of learning that fosters a variety of control over students' learning (Benson, 2011). Not only do students master management learning skills, but also cognitive and metacognitive ones, that is control over cognitive processes and language content issues. Holistic approach to autonomous learning encompassing various aspects of learner autonomy is proposed (Benson, 2011). Russian research has failed to take into consideration the holistic structure of the term 'autonomy'. Either technical or psychological aspects of learner autonomy are fostered, leaving its political dimension untouched.

In an international context autonomous learning is arranged into stages which are borrowed from a German educator's research, Tobias Büser. This learning consists of self-initiative, self-directed, independent and autonomous learning (Büser, 1999). Self-initiated learning entails the setting of personal goals and tasks. Self-directed learning focuses on fostering management learning skills. Independent learning assumes one's own ability to determine pace given one's goal-setting. Autonomous learning comprises learners' ability to control their learning: cognitively engaging in learning process, being responsible for the learning content and managing learning resources. Not only does this form of learning takes into consideration resources-based and learner-based methodologies, as in the case of Russian context, but also teacher-based, classroom-based and curriculum-based ones are considered (Benson, 2011).

Russian research demonstrates that the difference between autonomous, self-directed and independent learning lies in a degree of exercising independence and

autonomy as an individual psychological construct (Kolesnikova & Dolgina, 2008). Independent learning occurs when students are given an opportunity to handle learning resources on their own. Self-directed learning takes places when teachers provide their students with a choice of activities to perform whereas autonomous learning presupposes learners' full autonomy and independence development.

Following an international experience autonomous learning in a Russian context should abide by holistic approach to teaching and learning whereby learners need to go through each stage to fully develop their autonomy. However, educational establishments, standards, programmes and society's needs obstruct its successful implementation (Benson, 2011). In a Russian non-linguistic university it is especially pronounced: individual teachers' and students' habits, unified curricula and yearly lesson planning schedules, limited amount of lessons and timing for the English language discipline, high demand of English in the field of ICT (information communication technology), low level of language proficiency among first-year students and their low motivation to this subject.

Our own research on autonomous learning intends to deal with all the stages. In the first stage a teacher motivates students to learn a language: tests their abilities; and provides a curriculum for students to analyse. In the second stage students draw up their own programme in accordance with the university programme and their abilities, needs and goals. In the third stage students carry out learning, made some adjustments to their plan drawn and evaluate the outcomes. In the fourth stage students decides on the resources. The teacher's role is to oversee their activities, provide resources into a virtual learning management system and support to students.

Following the European standards, the state higher education standard in Russia dictates the competency-based approach to teaching (FGOSVO, 2018). The English language discipline programme at a non-linguistic university abides by this approach and states its goal: to develop a communicative language competence among learners of English. Students are to enhance their level of language proficiency and communicative language competence in order to solve communicative tasks in social, cultural, professional, scientific activities and self-education. Fostering learner autonomy is one of the objectives within this aim among the development of cognitive, language and research skills, cultural abilities and capabilities, tolerance and respect. In international program design learner autonomy is regarded as the main aim of language education, hence the teaching methodology penetrates autonomous learning in a classroom (Benson, 2011). This may include project-based teaching, the use of language portfolio and collaboration. In Russian classrooms the methodology adopted primarily relies on grammar-translation and audio-

lingual methods to teaching. Students are not accustomed to taking responsibility for their own learning. However, our own observation and teaching practice at a non-linguistic university reveal that the majority of students tend to have a low level of learner autonomy and communicative language competence. To make matters worse, the language programme lasts for two to three semesters, although the professionally oriented content mainly focuses on information communication technologies, telecommunications and engineering.

Thus, some Russian researchers have just started to borrow international teaching methodology stances and design their own to fit the Russian context (Koryakovtseva, 2010; Tambovkina, 2014). However, Russian recent methodology suggests a teacher's role as a resource and collaboration among learners around task completion (Koryakovtseva, 2010; Tambovkina, 2014), whereas according to international perspective, collaboration between a teacher and learners regarding curriculum and syllabus is proposed; a teacher acts as a friend (Benson, 2011).

Results

The rationale behind any inconsistencies between the constructs under discussion in both contexts has been provided. Autonomous learning is aimed at developing learner autonomy, autonomy as a construct containing technical, political and psychological constituents (Benson, 2011). In a Russian context learner autonomy is seen as a capacity to manage one's own learning (Koryakovtseva, 2010; Tambovkina, 2014) whereas international understanding of this term entails holistic view of the term (Benson, 2011). Learner autonomy is considered a capacity to control not only learning management, but also cognitive processes and learning content. Therefore, international teaching methodology developers seek to involve collaboration among educators, teachers and learners, encourage their continuous reflective thinking processes, integrate guided self-access centres. In a Russian context, on a contrary, the efforts of those involved in teaching methodology design focus on technology-based, resource-based and learner-based approaches to fostering learner autonomy. Learner centredness is admitted to be crucial operating principle of any teaching methodology in both contexts (Koryakovtseva, 2010; Tambovkina, 2014; Benson, 2011; Merzlyakov, 2016; Kumaravadivelu, 2013). In a Russian context learner autonomy is regarded as independence and responsibility for one's learning (Koryakovtseva, 2010; Tambovkina, 2014). Interdependence and control as autonomy features are prioritised in an international context (Benson, 2011).

Conclusion

To conclude this paper, in a Russian context autonomous learning is mainly learner-based learning in an individualized mode, whereas in an international context autonomous learning comprises independence and interdependence in a self-directed mode. Collaboration between international and Russian educators are suggested to eliminate any inconsistencies in terminology. Training sessions organized for those educators may comprise focus on theory and practice. Teachers may be encouraged to engage in discussion of the componential structure of the terms 'autonomy', 'autonomous learning', 'independence' and independent learning'. They may further touch upon the stages of autonomous and independent learning. The final part may include the use of the theoretical concepts in practice. To exemplify this, teachers may be encouraged to design a program and present it to their colleagues for their evaluation. Thus, any discrepancy between the understanding of the terms may be eliminated. We hope by this paper we have made a valuable contribution to the field of language teaching methodology. Further research on the application of the concepts and stances under discussion to teaching practice is needed to agree on the terminology and its content.

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Brief biography of the author

Evgenia NikolaevnaBelova

PhD student at the Institute of Foreign Languages, the Herzen State Pedagogical University of Russia, Saint Petersburg. She has published over 20 scientific papers in the area of language teaching. Her main fields of interest include online education, autonomous learning, information communication technologies and language teaching.

Study Abroad as Experiential Learning

Helen Rosenberg

University of Wisconsin-Parkside

Introduction

A quick search under “study abroad” on the internet lists hundreds of programs offered through Universities across the U.S. Much of the information offered tells us of the various types of programs, e.g., internships, short-term programs, semester long experiences, or home stay offerings. Sites entice students by highlighting exotic places, their flexibility to meet diverse needs for adventure and offer testimonials from students who share their experiences with the world of the internet. Additionally, the sites offer students a roadmap for how to apply to programs, how to apply for visas and passports and how access funding. Colleges and universities offer programs across an array of disciplines: art, history, biology, modern languages, business, environmental studies, international studies, chemistry and other STEM disciplines. They emphasize fun over learning, but this may be an initial hook to get students involved.

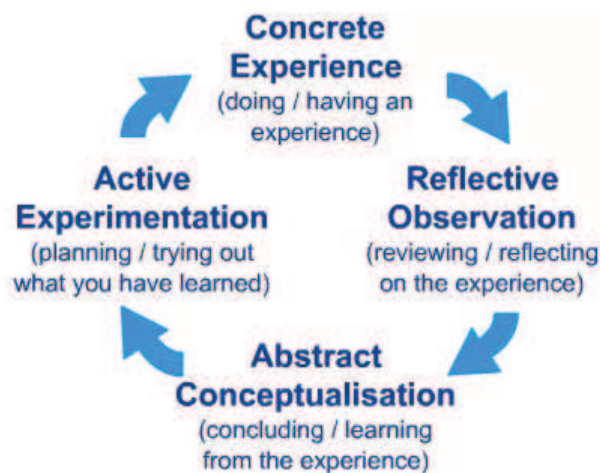
Theoretical Underpinings

John Dewey (1916) recognized that a vital component of learning was its application to real life. Karl Marx argued that what we come to know is determined by our life experiences (Marx, 1932) and C. Wright Mills (1959) warned against teaching substantive areas apart from the global issues they represent. There is no fact that speaks for itself, but only one that is explained through theoretical application. On the other hand, theory without verification through experience is merely conjecture.

It took a long time before academia would accept real world experience as a legitimate pursuit toward learning. Not until the 1970s, did Kolb and Fry link experiential learning to four learning styles that legitimized the relationship between experience and learning (Kolb, D. A., & Fry, R. E., 1974; Kolb, 1984). Kolb explains that we have very different ways in which we learn. Some of us learn best by reading, others by listening, and others by doing and feeling. Although we may prefer one learning style to another, it is likely that we apply some or all of these at the same time. Kolb takes an inductive view of learning, similar to his predecessors. “Learning is the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38). His focus is on the process of learning based on a four-stage learning cycle depicted below.

The Experiential Learning Cycle

Kolb's experiential learning style theory is typically represented by a four-stage learning cycle in which the learner 'touches all the bases':



McLeod, S. A. (2017, Oct 24). Kolb - learning styles. Retrieved from <https://www.simplypsychology.org/learning-kolb.html>, November 2, 2019.

As Kolb describes, we begin from experience and attempt to integrate each new experience into our current knowledge base. In making sense of our experiences, they can reinforce what we know from previous experience, adding to our current body of knowledge, or counter our current understanding of reality. In the latter case, we alter or correct our understanding to incorporate the new experience that has reshaped our former worldview. This learning process is not done in isolation. We can think about this, but more likely, we form new ideas based upon our interactions with others in an iterative process through discussion, reflection and later reformulation. In the last phase of Kolb's model, active experimentation, we test our new ideas.

Kolb's learning cycle is not dissimilar from Walter Wallace's "Wheel of Science" (Wallace, 1971). We begin with observations (concrete experience) and make generalizations from this experience that help us understand an external reality. From this, we develop hypotheses to be tested. We test these hypotheses through concrete experience and continue to revise our understanding yet again.

Sociologists and anthropologists have long used this inductive process in their research, but its application to student learning did not appear until much later. The concept of internships, i.e., developing generalizations about society from experience, did not

become practice until the 1960s, and only became popular two decades later (Spradlin, April 27, 2009, <https://www.forbes.com/2009/04/27/intern-history-apprenticeship-leadership-careers-jobs.html#7b7d5af346b7>, accessed November 2, 2019). Today, this form of experiential learning has been institutionalized in most academic institutions. From the internship as a form of experiential learning, has developed more sophisticated applications of service learning and community based learning which specify goals for community partners and student learning outcomes tied to activities.

Benefits to Students and Community

Much research on the impact of experiential learning has focused on students. Studies find that experiential learning affects students in positive ways by enhancing their personal and interpersonal skills (Eyler, & Giles, 2001), including leadership (Ash et al., 2005) and communication skills (Battistoni, 1997), increasing self-efficacy (Spiezio, Baker & Boland, 2006), community awareness (Batchelder & Root, 1994), self-knowledge (Eyler and Giles, 1999; Driscoll, et al., 1996), and civic and social awareness (Astin & Sax, 1998; Reed et al., 2011; Frazer, Raasch, Pertzborn & Bradley, 2007). Moreover, students seem to be aware of the changes within themselves that have resulted from their participation (Levesque-Bristol and Stanek, 2009). Brownell & Swaner (2009) emphasize that what seems to be important for such positive gains is making salient the link between classroom learning and experiential learning, incorporating structured reflection into the curriculum, providing quality supervision at the project site, and making experiences long enough for students to connect to service clients and partners.

In addition to student development, universities have become sensitive to their role as a resource in the larger community and have made explicit their responsibility to community needs. In recent years, this has expanded globally. Not only does the University see itself as part of a larger community, but also sees itself as part of a global society. The challenge is to transfer this commitment to individual students. For the most part, study abroad programs accomplish this, but while there are many rewards for students, faculty and university, there are many challenges as well. One of the critiques of study abroad programs is that students get credit for essentially taking a vacation while they study. There is some validity to this criticism, but placing emphasis on one aspect of study abroad alone is misguided. While students learn much, they have “down time” as well. Indeed, it is difficult to segment aspects of this experience into categories. As testimonials reveal, different experiences affect each student differently. In the following, I want to present what I believe to be key components for a quality study abroad program and review how students learn competencies far beyond what is taught in the classroom. However, I want to address

current drawbacks of study abroad programs as well in an effort to discuss how we can improve our programming.

Exchange Programs

Semester Abroad Programs

There are many types of study abroad programs and the University exchange is but one type. The key here is the word “exchange”. Many study abroad programs carry the label, “Exchange”, but do not meet the criteria for this type of program. In order to be defined as an exchange, there must be agreement between two or more universities to provide a means for students to study at a host university located outside their home country, i.e., it must be reciprocal. By reciprocity, we mean the students from each university gain academic credit by attending a short term or semester long program at the partner university. Under these circumstances, students pay tuition to their home institutions and attend classes at their host institutions that are credited at the home campus. Ideally, the exchange model equally balances opportunities and services for students attending both universities. However, this is very difficult to achieve and requires much planning. For example, classes that students take abroad for credit at their home institution must be identified and approved by faculty for students to receive full credit. Ideally, there should be a seamless transfer of credits so there is no disruption in the students’ matriculation for graduation.

More common are programs where students from the U.S. travel abroad without the benefit of students coming to U.S. universities. College tuition is free for students in many foreign countries, so when international students attend colleges in the U.S., their tuition is free. In effect, the U.S. campus loses money by offering free tuition to its international students. U.S. students attending universities in foreign countries often balk at the fact that they must pay full tuition at their home university, while their fellow students outside the U.S. receive a free education. In turn, international students learning in the U.S. only pay for housing, food and other services, including their airfare. When it comes to paying for tuition, there is no even exchange. U.S. students pay for tuition, including airfare and fees, while international students do not pay tuition, yet get the benefits of classes that their fellow students pay for.

System-wide Programs and Limited Exchanges

Although true exchange programs are rare, the University of Wisconsin-System offers the Hessen program in Germany, a six-credit program (two classes) in multiple locations throughout Germany. Students from schools in Germany attend a college of their choice in the UW-System. The Hessen program is a State-to-State agreement by governors

of both entities. Another example of a system-wide exchange is the Ostfalia program connecting UW-System students with computer science and biology classes in Wolfenbuettel, Germany. Students from across the UW-System attend classes during the summer at Ostfalia University and the next summer, students from Ostfalia University attend a campus of their choice for a two-week program in Wisconsin. These programs are shared across all the colleges throughout the University of Wisconsin-System. Students from abroad have their choice of universities and often select large, prestigious universities over smaller ones. The added cost of attending a large university, given that tuition is free, is minimal.

Third-party Provider Programs

Another way to market to students is through a third party provider. AIFS (<https://www.aifsabroad.com/>) is a provider that connects a foreign university with one in the U.S. The U.S. University creates the study abroad model and creates the curriculum for a semester. AIFS connects students with a program that includes an orientation and ensures that housing is safe, e.g. has working smoke detectors. It has a global market, but as one might guess, it is very expensive.

Direct Enrollment Study Abroad Programs

Direct enrollment study abroad programs allow students to enroll at a foreign university without going through a third party. However, classes students choose may not transfer to the university they are attending currently and classes are taught in the language of the home country. What some students consider the opportunity for greater independence, others might consider risky. Students are on their own initiative in collaborating with their chosen university. The benefit to students is the relatively low cost.

Programs That are Not Exchanges

Short Term Experiences

More common are study abroad programs that are not part of an exchange. The following describes a variety of such study abroad programs.

The FLIP: The Faculty Led International Program is the most common type of study abroad program and the easiest to implement. One or more faculty travel with students and determine the curriculum for the class. Such classes may be offered within one campus or offered to students across a system. The program requires a short-term agreement with an international partner, but also requires administrative and faculty governance approval. Such programs have variable length. At UW-Parkside, study abroad can be part of the month-long winter break, the week-long spring break, or part of summer school. Some campuses within the system offer a number of programs that are open to students throughout the system and

actively recruit UW-System faculty to teach at international campuses. UW-River Falls is responsible for Experience Scotland, where students live in a rented castle in Dalkeith, Scotland and Experience China, where students live at the International Student Residence Hall at Zhejiang International Studies University in Hangzhou, China.

Each variation of a study abroad program enlists a number of faculty, support staff and administrators to ensure its viability. I have hosted students to Poland three times as part of a study abroad program at UW-Parkside. Once described, I would like to return to our theoretical discussion that explains its value for students, but also considers some current challenges.

Study Abroad in Poland

Prior to any study abroad experience, the initial idea of hosting such a program must flourish. Faculty are motivated to host such program for a variety of reasons: connections with colleagues at international conferences that share common interests or visiting areas that are connected to a particular discipline, e.g., biology, environmental studies, modern languages, or art. Regardless of the discipline, the primary focus is the “study” of the study abroad. My own program intersects with sociology, history and international studies.

Once the idea has jelled, faculty must develop a working program. This involves interactions among multiple partners: connecting with a study abroad office if there is one, connecting with financial aid, with student affairs, with university relations to promote the program, and with risk management to learn safety rules when traveling abroad. Then there are the logistics of travel with students abroad. Where will they reside? Will there be a home location or will there be multi-city travel sites? What places will they visit and what will they learn? How will their learning be assessed?

Often, faculty are familiar with their travel sites. If the faculty has yet to travel to this country, answering these questions is a challenge. This was my situation, so I depended heavily on my academic partner’s recommendations. It was important that this experience be one of learning, so that both Polish and American students spent time in the classroom in discussions with each other. After one lecture that my partner gave on Poland and a second I gave on race in the U.S., American students answered questions that Polish students had about the U.S. It was an enlightening experience for both groups and gave the U.S. students an opportunity to become teachers themselves. Our focus was learning history, culture and interacting with Polish students in the American Studies Program, so eager to meet students from the U.S.

I have traveled to Poland three times with students on Study Abroad. The first time, I traveled with my husband. I had only three students with me and so the repercussions for our group when we got lost were not too bad. The second time, I traveled with ten students. Each of these times, families of students in the American Studies program hosted our students in their homes. My students said they were treated like family. Food, a symbol of hospitality, was offered as a sign of acceptance and friendship. This was a culinary exchange and a way of tasting the culture of Poland – literally. So even at their leisure, U.S. students learned about the home life and customs of Poles and their families developed an understanding of the U.S., albeit, superficially.

The second time I travelled, I still got lost, but this group handled it well as they made fast friends with each other and their student hosts. In the evenings, I would lose three students regularly to bars. I may have been on the way to the central city with everyone, but somewhere along with way, some managed to slip away, only to return to their homes well after I was asleep. The lesson learned is that all aspects of any study abroad experience are learning opportunities, whether navigating through the country or socializing over dinner.

Prior to traveling abroad, I invite experts to speak to students on the history, culture, politics and various ethnicities that are represented in Poland. The most fascinating aspect of presentations is the history. Poland's identity is tied to its Nazi occupation, to the many concentration camps still preserved, and its struggle for independence as a nation. I invite people from the community to attend these lectures and we have lively discussions after presentations. Attendance is good. The first year, I had close to 100 participants and the second year, about 30. Large turnout is due, in part, to the large Polish representation in our region as we are a campus near Milwaukee, Wisconsin. However, this turnout speaks to the desire for people, regardless of ethnicity, to learn more about their history and culture. Also, this was an opportunity for my students to learn about Polish history from those who lived it, but then immigrated to the U.S.

Experience has shown me that students remain shy until they form a small community among themselves. In addition to learning about history and culture, students must learn how to travel in a foreign country. Many have never traveled abroad and some have never been on an airplane. The Director of Study Abroad and I conduct the last lecture to touch on issues of potential risks in foreign countries, e.g. what to do when passports are lost or stolen, when one has an accident or gets sick, or how to act appropriately. Despite this, something comes up invariably, but even the most minor incident, might be viewed as catastrophic by the person affected. For example, at one hostel, one student's laundry was misplaced and she began to sob. It was later located in the back of a closet. Another time, a

student had an asthma attack and we had to seek medical help. In this difficulty situation, it is very important to remain calm, at least in outward appearance.

Much of our time is spent with students at our host institution. With each trip, my students are partnered with UG students who accompany us to various sites. After our arrival and a brief rest, the first lecture we have is hosted by a history professor. One year we met at the site of the Nazi invasion of Poland that was the start of WWII. Another time, we met in the central city to learn how Gdansk developed as a cultural center with a large Kashub population, whose economic contribution to the region was fishing. Half our trip is in Gdansk. We have class time with UG students, have lunch with them, and travel to various sites in the city with them. Most evenings students party with their hosts. We have two field trips outside the city, one to a small suburban community, Wejherowo, where we are hosted by the President, and the second to the largest castle in Europe, Malbork.

We then travel to Warsaw via train and have two days there, although my students have requested more free time to explore on their own. We visit the Museum of the Warsaw Rising and the Museum of the History of Polish Jews. We have attended evening concerts and have traveled through the old town in the evenings. Our final trip is to Krakov. We go to Auschwitz-Birkenau and to the Wieliczka Salt Mines, a Heritage site. Besides these required visits, we have toured the old city, visited the Royal Castle, and had a guided tour of Jagiellonian University, where Copernicus graduated.

Our time in Poland is about 12 days with the four-day pre-travel lectures. We are there in January when students are in session at UG. January is not a good time to travel to a cold climate, as other study aboard programs travel to warm areas. Yet, enrollment has been good at each trip. Here are some testimonials from students who participated in the program.

I had an amazing time in Poland. Both S and I talk about it at least once a day and we want to go back....We have more appreciation for older buildings and have come to realize how young our country really is! My favorite part was going to Malbork, and being able to imagine the people who lived there once and how their town was ran. I enjoyed talking to the people of Poland, especially the students in Gdansk. It was cool to see the different ways someone close to my age lived in a different country. I enjoyed all the architecture and history Poland has, and how important it is to the people of Poland...I believe the part that impacted me most was the trip to Auschwitz. Not everyone has the opportunity to go and see

something like that, and it opened my eyes to the horrors that happened there. (From a student who participated in 2019 with her husband).

First and foremost was our visit to the horrors of the Holocaust at Auschwitz and Birkenau. All that I had read previously did not give me a full picture of this genocide as did standing on the ashes of human beings near the disposal pond. It resonates even now. Second takeaway were all of the many interactions we had with the people of Poland. The mayor of Wehjerowo, the guides at the Kashubian museums, the proprietor of the Warsaw Potato (restaurant) who was so gracious to our group. The students at the college who hosted us along with their families and the faculty.... Another enjoyment was of all the music we heard round the country...especially in Warsaw. All in all, the opportunity to study abroad is invaluable and should be part of every students' education. (From a student who participated in 2017).

One of the things I think that surprised me the most, was that the people who lived through all of those hard times, or were old enough to understand it right after it happened were some of the nicest people in Poland. You look at them and wonder how hard it was for them growing up in that kind of situation and then you realize how easy you have had it. I get that some forgive and forget, but I just wonder how you can move on and be nice to complete strangers when any stranger they have encountered has done them wrong. That they could be tortured, starved, and almost beaten to death and rise above it and accept people they don't even know. It blows my mind that people have the heart to be nice and accept people from far away, people who they don't even know. It's amazing the hearts some people have. (From a student participant in 2015 of German heritage who visited her grandmother when in Krakov).

These reviews are testament to the diverse and positive experiences of students who participate in study abroad. My concern is the need for a consistent way of assessing study abroad programs that are not self-selective and are anonymous. Often learning outcomes are not explicit and so assessment measures of what students learn are vague. This needs to change. I know my students learn and have a good time, but to what extent have they learned and how have they grown? We need desired learning outcomes that are communicated to all faculty who supervise study abroad programs. The following are a

summary of learning outcomes published through the UW-Parkside Study Abroad office. Some of the learning goals are expressed by my students, but others are not. The challenge is to develop both formative and summative assessment measures that are reflective of students' study abroad experiences.

Learning Outcomes

Identity Goals: Students become better contributors to a global community and become culturally self-aware.

Cross Cultural Goals: Students appreciate that there are differences between cultures and develop open-mindedness and respect for differences in culture. They move from ethnocentrism to ethno relativism. They develop sensitivity to the concerns of under-represented, minority or indigenous peoples throughout the world.

Academic Goals: Students develop a better understanding of global issues; gain an understanding of the host society including its politics, economy, society, political difference across cultures, and how the U.S. is perceived abroad.

Professional and Life-Long goals: Improve students' problem solving skills by developing empathy for others and a trans-cultural perspective. Improve ability to bridge social-economic differences with their U.S. peers.

Challenges

We come to understand individual experiences in different ways. Through the process of connecting our own experience and observations with those of others, we can begin to discover others' perspectives and realities of the world. Through study abroad, we understand reality in reference to the experiences of others; our understanding is expanded and modified, based upon shared information. The world of study abroad is one in which we create truths from our experience and one in which we understand that our development of truths is just one model of reality that we have gleaned through experience. We learn there is no one common truth, but multiple truths experienced by those who present their perspectives on the world.

Study abroad is popular and believed to be a valuable experience for students. how do we know this? One of the drawbacks of understanding this experience for students is the lack of assessment measures. The first year I went abroad, I asked students to take field notes. This failed miserably as students were too tired by day's end to write. What about an attitudinal survey at program's end? What about a test of facts that includes historical and

cultural questions? I broach these questions in an effort to come to a common understanding of the best ways to assess student learning.

Currently, study abroad programs place much emphasis on the experience, with the hope that students are learning from these experiences. Most programs have been flexible with regard to format and curriculum, but have no way of assessing what works and what doesn't. Writing this paper for me, has solidified my commitment to study abroad programs, but has made me critical as well. We must work with our study abroad administrators to develop assessment measures that will help us to realize the learning outcomes we seek to instill in our students.

Here are some recommendations for future programming:

- Begin modestly and allow for mistakes
- Give your students freedom to explore on their own
- Develop learning goals that are explicit to the planned activities and that are capable of being assessed
- Make learning explicit to students so they understand your desires for their learning
- Provide students brief daily ways of stating what they learned
- Be flexible and tolerant of individual difference
- Do not underestimate the value of social interaction with others
- Rely on the expertise of your study abroad partner

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Impact of Online Course Videos on Student Learning

Madhumita Banerjee, Joy Wolf, Suresh Chalasani, Parag Dhumal, Michele Gee

University of Wisconsin-Parkside

Abstract

Quality online programs often demonstrate significant instructor presence through videos. In this paper, we analyze video usage for programs based on the community of inquiry framework. Videos can promote social, teaching, and cognitive presence in the online classroom. Different online programs use videos differently: instructor introductions (social presence), course and unit introductions (teaching presence), video lectures (teaching presence), video screen-cast tutorials (teaching presence), and video feedback (cognitive presence). We take examples from multiple programs offered at UW-Parkside (natural sciences, health sciences, and social sciences) at both the undergraduate and graduate levels and discuss how they are using videos. Video usage is not universal in online programs offered in the UW System. We share faculty and student perceptions of videos in some of our online programs. The main purpose of this paper is to show how video presence can strengthen student learning in online courses. This paper is applicable for programs and educational institutions currently designing or offering online programs.

Keywords: COI Model, Online Learning, Teaching Presence, Cognitive Presence, Social Presence, Instructional Technologies

Introduction

University of Wisconsin - Parkside (UWP) offers a number of collaborative online programs at the undergraduate level including the Sustainable Management (SMGT) and the Health Information Technology and Management (HIMT) along with degree completion programs in Business (BUSO), Sociology (SOCO), and Liberal Studies. At the graduate level, UWP recently launched a fully online MBA program. The use of videos in online programs varies widely. Some online programs, instead of using videos created by their own instructors, incorporate freely available videos from other sources while others strive to utilize a significant number of videos produced by their own faculty. Most programs do not have a prescriptive model for video usage. Some programs adhere to standards prescribed by Quality Matters, standards that refer to multimedia content and allude to video usage without being specific in terms of video requirements.

With advances in technology, video content generated by program faculty is becoming an important aspect of building a cohesive learning community. In this paper, we first discuss how video presence can enhance the learning community using the community of inquiry (COI) framework. Instructor's video presence can help build social, teaching, and cognitive presence in the online classroom. Our primary focus in this paper is on social presence and teaching presence. We classify the videos into several categories including instructor introductions, course and unit introductions, video lectures, video screencast tutorials, and video feedback. We consider the SOCO, SMGT, HIMT and MBA programs, and discuss current practices of using videos in these programs with examples.

The type of videos varies by the type of subject matter. For example, some subjects such as management may benefit from video lectures, while technical subjects may benefit from step-by-step video screencast tutorials on how to work with technology. We also discuss tips for providing video feedback to students and scenarios in which video feedback will be beneficial. With video feedback, personalized feedback to each student can be time-consuming to produce and share. We discuss such barriers and strategies to overcome those barriers. We also consider examples of how student videos such as presentations can contribute to building a learning community.

Video usage is not universal in online programs offered in the UW System. We discuss the relationship between videos in online courses and the online course certification. We also share faculty and student perceptions of videos in some of our online programs. The main purpose of this paper is to show how video presence can strengthen student learning in online courses. This paper is applicable for programs and educational institutions currently designing and teaching in online programs.

Related work

A National Center for Education Statistics study reported that the number of college students enrolled in at least one online course, as well as the proportion of all enrolled students who are studying online will continue to increase (Ginder et. al, 2017). While online courses offer greater educational access, students' sense of distance can threaten their ability to learn (Moore, 1980). Creating a sense of community in online courses has been shown to be significantly associated with perceived learning (Rovai, 2002; Shea, 2006). Innovative teaching strategies ensure that students are engaged and are motivated to learn. Research has shown that creative classroom techniques that incorporate technology promote a more productive and enriched learning environment (Rosenfield, 2007; Beldarrain, 2006). To that end, videos serve as an important tool to build a sense of community in the online environment. The community of inquiry (CoI) is a theoretical

framework for the optimal design of online learning environments to support critical thinking, critical inquiry, and discourse among students and teachers (Garrison et al., 2000). Utilizing the COI model of learning, this paper attempts to show how videos can be successfully incorporated to improve the social, cognitive, and teaching presence in an online environment.

Col Model



Figure 1. Community of Inquiry (Col) Framework

The Community of Inquiry (Col) framework is a well-established model utilized to gauge learning effectiveness in the online environment (Garrison & Arbaugh, 2007). With the proliferation of online education in the post-secondary setting, both synchronous and asynchronous videos have been utilized to promote learning. The Col model (Figure 1) assumes that learning happens within a community of learners through the interaction of three core elements: cognitive presence, social presence, and teaching presence (Garrison, Anderson, & Archer, 2000). Garrison (2007) presented several categories of teaching, social, and cognitive presence in the online classroom. Table 1 summarizes these categories. While Garrison's work does not specifically address the video examples and how videos help implement the Col model; In Table 1, we included example videos for each category of the Col model.

Table 1. Video Usage Utilizing Col Framework

Elements	Categories	Indicators	Video Presence
Social Presence	Open Communication	Risk-Free Expression	Course Introduction Videos; setting the ground rules such as the classroom is an open classroom.
	Group Cohesion	Encourage Collaboration	Video Conference with Students; providing tools for students to collaborate with one another via video
	Effective Expression	Interviewing Professionals	Student Videos with Interviews; requiring students to interview experts and share their videos with the class
Cognitive Presence	Triggering Event	Sense of Puzzlement	Module/Unit Introduction Videos; introducing the module topic with an example scenario and questions related to that scenario
	Exploration	Information Exchange	Video Conference with Students and Holding Office Hours through Videos; Module/Unit Introduction Videos
	Integration	Connecting Ideas	Summary Videos; these cover all topics included in the module and how they relate to one another
	Resolution	Apply Ideas for Problem Solving & New Scenarios	Video Feedback; these include feedback on student's work and what they need to change to apply concepts to new scenarios
Teaching Presence	Design & Organization	Setting Curriculum & Methods	Module Introduction Videos; these explain the structure of the module and what is covered and how different topics are taught in the module
	Facilitating Discourse	Sharing Personal Meaning	Collaborative Work with Students via Video; working with students synchronously via video conferencing
	Direct Instruction	Skills Attainment	Instructional Videos Step-by-step Video Tutorials; these show how students can apply a concept to a scenario in a step-by-step fashion

Online Programs Offered by UW-Parkside

Most of the colleges at UWP offer online opportunities at both the undergraduate and graduate level ranging from completion programs, certificates, and full online programs. An example of some master's programs are Applied Professional Studies, Business Administration, Applied Biotechnology, Health and Wellness Management, Sports Management, and Sustainable Management. Some of the undergraduate online programs include Business Administration, Health Information Management and Technology, Liberal Studies, Sociology, and Sustainable Management (which is a consortium of four system-wide UW universities).

Social Presence

Table 2. Social Presence Examples: Instruction and Participation Driven

Elements	Categories	Indicators	Video Presence	Examples
Social Presence	Open Communication	Risk-Free Expression	Course Material	Class Introduction Lectures on site Lectures from lab
	Effective Expression	Interviewing Professionals	Student Videos	Interview assignment
	Group Cohesion	Encourage Collaboration	Interactions with Students	Field technique, Instruction in fields Final presentations

Social presence, as a component in the Community of Inquiry (CoI) model facilitates an open communication between the instructor and student and provides a risk-free expression of student learning. Garrison's (2007) review of CoI revealed that the social presence inspires more importance pedagogically when the class activities include participation among students, such as during discussion forums, or in Interview assignments. In a study of mixed media approaches conducted by Clark et al. (2015), a strong response from students was revealed when asked if video enhanced discussions (VED), compared to text-based discussion (TBD), facilitated a stronger social presence, specifically because students can hear the voice of their peers or instructor. The authors discuss the state of ease the asynchronistic flexibility offers to students, while still maintaining a social presence in the classroom. In addition, students felt the commitment that instructors had to ensure a connection. To be sure, social presence is a key factor to community

engagement (Dixson 2015). Not only does a strong social presence allow students to feel that they are communicating with real people, but they are more comfortable expressing their emotions in their assignments. For example, in the Interview assignment mentioned below, we found students were quite animated in their self-generated videos and enjoyed using technology to perform a “live” interview, using either Kaltura or Collaborate Ultra (if students were interviewing someone from a distant location).

Draus et al. (2014) supports the notion that video content will enhance student learning, and stresses that instructors can make a stronger and more meaningful impact by incorporating instructor-generated video content. In their study, they found an increase in course satisfaction and participating in the discussion forums correlated with a strong social presence using instructor-generated videos. Similarly, in a typical course in a UWP online program, an instructor could provide open communication with the students by creating an Introductory video of themselves. This type of VED would provide details of the course, and a sense of connection between the materials. The video offers a personal welcome and understanding of the instructor’s expertise. Often times, the videos are taken from an instructor’s office. Likewise, videos can introduce an instructor’s laboratory, or provide lectures from off-site places (such as by a river, or in an agricultural field).

One aspect of “social presence” from the instructor’s perspective is the desire to offer ways that students can express their skills. Videoconferencing offers a way to meet with the instructor, other students, or perform an assignment in which an interview is to take place. This type of connection has had positive results (Clark et al. 2015). In the UWP MAPS master’s level course on Applied Research, a student is assigned a task to interview a Professional in their chosen future career. While the content of the interview provides one aspect of learning, how a student uses the technology allows the student to use their own creative means to illustrate the interview.

Group cohesion is another means in which students not only learn how to collaborate well, but to manage their combined work in a video or otherwise illustrated format. Student group cohesiveness and team effectiveness has been purported to correlate well with social presence and learning outcomes (Garrison and Arbaugh 2007). In the SMGT 325 course, students can watch an example of other students performing activities in the field, speaking to each other, or participating in a lesson with the instructor. When students are asked to interact with each other, or critique each other’s video attempts, it encourages collaboration and a sense of community within the classroom. A possible limitation was reported by Garrison (2007) that gender differences can lead to varying results because men and women may have different ways of communication.

Teaching Presence

According to Garrison and Arbaugh (2007), teaching presence comprises of three components: (a) instructional design and organization (b) facilitating discourse (c) direct instruction. It is through effective teaching presence that meaningful and desired learning outcomes are attained. It is clear that the interaction between the social, cognitive, and teaching presence of the Col model is essential for any of the three to contribute to effective online learning. Garrison (2000) reported that an effective teaching presence contributes to the overall learning by defining the parameters and direction of social and cognitive presence. Studies have shown how students have a more positive approach to the materials (cognitive) and have an increased sense of community (social) in online courses with a strong teaching presence.

Table 3. Teaching Presence Examples

Elements	Categories	Indicators	Video Presence	Program/Courses/Examples
Teaching Presence	Design & Organization	Setting Curriculum & Methods	<ul style="list-style-type: none"> Welcome Video Module/Unit Introduction Videos 	SOCA 250, SMGT 325, MBA 720
	Facilitating Discourse	Sharing Personal Meaning	<ul style="list-style-type: none"> Instruction Video Summary Videos Video discussion forum Video Office hours 	SOCA 250, SMGT 325, MBA 720, MBA 729, MBA 781
	Direct Instruction	Skills Attainment	<ul style="list-style-type: none"> Instructional Videos Step-by-step Video Tutorials Screencast Video Tutorials 	SOCA 250, SMGT 325, MBA 720, MBA 729, MBA 781

Teaching Presence in SMGT 325

In the SMGT 325 class, videos which contribute to the teaching presence are used in many circumstances. To begin the course, students are welcomed to the class with a personal video from the instructor. This welcome would be reminiscent of a “first-day” lecture

experience in the classroom. In this video, the instructor shares information about herself, her research and expertise, goals and layout for the class, and expectations from students. Students learn the material in sections or Units, each focusing on a theme such as Policy, Soil, Forest, or Water. For each unit, the instructor creates an individually custom “Summary Video” (which shares personal meaning, CoI Model) to focus on that theme. The video may take place from a river (for the Unit on water, for example). Videos are also used for “Direct Instruction” (which sets the curriculum and methods), such as in PowerPoint lectures. In this way, the instructor will insert short clips so that she can explain certain difficult concepts. Because there is a strong “hands-on participation” component in this online course, the instructor uses self-created “Instructional Videos” (to build Skills Attainment” in CoI Model) in each of the Units. For example, in the Soils Unit, students can click into a video and watch the instructor show them how to use field tools to collect soil, and another video from her lab explaining to the students how to analyze the soil for simple characteristics such as texture, organic matter, and structure. Likewise, in the Forests Unit, students can view videos in which the instructor describes how to extract a core from a tree, or how to use methods in the field to measure diversity indexes. These videos allow the student to learn through participation.

Other ways to provide a teaching presence in the SMGT 325 course is the use of video-related activities, or links to webpages with embedded videos describing applications on “how to live a more sustainable life” that students can download onto their mobile devices. While these types of videos are not created by the instructor, they are valuable to the course learning objectives. Additional types of videos are informational and are used to encourage student reflection. Examples of this type of learning include TED talk discussions on wetlands as a natural resource.

Nagel and Kotze (2009) point out that the ratio of teacher to student in large classes present their own challenges, but for smaller class sizes, we found that incorporating our (teacher) presence for the students to access, especially through videos, was proven to be a valuable part of the learning process, as shown in the Table of Responses for SMGT 325 (below).

Table 4. A few Sample Student Reflections from SMGT 325

Clear instructions and objectives made this class a lot easier than my other online experiences. Also, her lectures and videos were helpful and very well done.	The multimedia formats (lecture videos, narrated PowerPoints, linked YouTube videos, etc.) used in the course assisted my learning
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The Natural Resources Management (SMGT 325) course is taught at least once a year, with a typical class size of 22-30 students. While this is a moderately sized class, it is manageable from the context of providing enough teaching presence to maintain a level of satisfaction for students to feel they are learning the material “from the instructor”, and to have a sense of open interaction with the instructor. The teaching presence is expressed in how students are learning the subject matter. The following example reflection statement from a student illustrates student experiences from learning how to make videos themselves!

“By using video recording, I had to get my thoughts organized before hand. This methodology really helped me to narrow down the items I felt were important and to be focused. This is an important skill that I struggle with and this methodology will help me improve in that area.”

Teaching Presence in SOCA 250

Foundation of a good teaching presence can begin weeks and months ahead of the actual start date of the course with the goal of designing courses and instructional activities that deeply engage the mind of the learner. The design and organizational aspect of the course is explained using a welcome video that would be evocative of the first day of class. Direct instruction may require the instructor to create her own videos and/or find videos that will supplement the instructor’s video. Direct instruction in a Statistics course may start with an example, leading to a discussion on the assumptions of the model, the variables involved, the levels of measurement, etc. explaining the “why’s” at every stage. It also involves solving problems on the screen using Ixplain software, reproducing an in-class scenario of instructor solving problems on the whiteboard, screencast tutorials that walks the student through running the analysis and explaining the output table. Facilitating discourse takes place through weekly synchronous video discussions where students discuss specific problems, inquire together, and benefit from each other’s query. Student evaluations showed that (a) course design and organization was easy to follow with minimal navigational challenges (b) the videos emphasized the process rather than the end result (c) the video discussions

enhanced their appreciation of the interpretive aspect of statistics. Effective teaching presence was evident in this course as Nagel and Kotze (2009) point out that when students spend more time on learning by thinking, comparing, contrasting, and communicating, the learning is rich and deep (Nagel and Kotze, 2009). The SOCA 250 course is a Statistics course for social sciences majors (Sociology, Anthropology, Geography, etc.). Listed below are a few sample comments from students.

The organization was great and for being an online class, the instructions and weekly outline was one of the best I have seen as a student and I have taken several online courses.

For an online course it didn't seem to feel like an online course due to the lecture videos. The step by step calculations felt like I was sitting in class but within the comforts of my home.

Similarly, the MBA 781 (a course on healthcare technologies) is also viewed positively by students for incorporating videos. The following table lists a few student comments from MBA 781.

Application exercises and video lectures by the professor were excellent.

His videos and explanations were very useful and helped to explain the content in recognizable terms.

the videos and hands on application exercises along with step by step tutorials helped the learning process tremendously

Discussion and Concluding Remarks

For a number of years, online courses have been evaluated for their design aspects based on certifications such as Quality Matters. For example, the Quality Matters rubric standards enumerated below allude to multimedia content and their quality:

QM 4.5 A variety of instructional materials is used in the course.

QM 6.3 A variety of technology is used in the course.

QM 8.5 Course multimedia facilitate ease of use.

QM 8.4 The course provides alternative means of access to multimedia content in formats that meet the needs of diverse learners.

As can be seen by the above standards, online courses that use multiple formats can provide a richer learning experience. Our paper addressed how video usage can enhance

teaching and social presence. However, developing quality videos come with its challenges. Sometimes, the many iterations needed to produce a video or to produce outdoor videos can be onerous. Another challenge with videos is the time it takes to revise the videos if the course is revised in minor or major ways. Training faculty in technologies that help produce quality videos can be time-consuming as well. To comply with federal regulations on course content accessibility, closed captioning and/or transcripts need to be provided for each video in the course. All these requirements imply that quality instructional design and media teams are absolutely necessary for faculty to design, develop and integrate videos in their online courses. Administrators need to provide adequate support in funding of technology to address issues of video production and be cognizant of the time commitment that go into planning and delivering a quality online course. Institutions must recognize the diversity of learner-faculty interaction with different learning tasks requiring different environments, support structures, and technological tools (Resta & Laferriere, 2007) and make suitable provisions for faculty to sustain their efforts. It should be noted that our study is limited to qualitative evaluation of videos and their benefits. Further research is needed in determining the benefits quantitatively. This can, for example, be conducted by comparing student learning in courses with and without videos. Conducting such a study through well-designed methodology can be a worthwhile research topic for the future.

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Brief biographies of the authors

Dr. Madhumita (Mita) Banerjee is an Assistant Professor of Sociology. She teaches courses in Sociology of Education, Public Health, Social Inequality, Statistics, and Research Methods at the undergraduate level and Data Visualization courses in the Applied Professional Studies Master's program (MAPS). Her current research interest lies in gaining insight into factors that motivate and deter underserved and underrepresented students in choosing online courses and the areas of improvement necessary to enhance their online

learning experience. Dr. Banerjee is also the Director of the Sociology Online Degree Completion Program.

Dr. Joy Wolf is a Professor of Biogeography. Her research focuses on the development of biogeography inquiry that emphasizes vegetation and soil dynamics, restoration ecology, the role of fire and the impact of exotic invasion in a variety of plant communities, including the ponderosa pine forests in northern Arizona, riparian woodlands in central Arizona, and montane grasslands in the Rocky Mountains. Since coming to UW-Parkside, her research includes Wisconsin's conifer forests, maple-beech forests, ephemeral ponds, floodplain woodlands, and oak savanna. Her current research involves using citizen-based techniques to study bird song and migration in coastal forests in the Pacific Northwest. Dr. Wolf was involved in teaching in the Sustainable Management undergraduate program since its inception, and in 2017, became the Academic Director for the program at UW-Parkside. She also teaches two classes in the Applied Professional Studies master's program.

Dr. Suresh Chalasani is a Professor of Management Information Systems. Dr. Chalasani has been involved in all aspects of the teaching lifecycle throughout his career, including curriculum design & development for new programs, program delivery, assessment of student learning, and continuous improvement. In addition to teaching, Dr. Chalasani also serves as the Academic Director for the first competency-based Business degree program in the UW System --- Flexible Option Bachelor of Science in Business Administration (Flex BSBA) --- an innovative program that helps non-traditional and working adults complete their degree requirements by demonstrating mastery of program competencies. He won a number of grants and awards from the UW System and external organizations such as the National Science Foundation.

Dr. Parag Dhumal is an associate professor of Business and the department chair (interim) at University of Wisconsin-Parkside. He joined Parkside in August 2010. Professor Dhumal also serves as the Faculty of Bachelor of Science in Business Administration (BSBA) program, an online competency based (flex) degree program offered by University of Wisconsin-Extension since its inception in January of 2016. Professor Dhumal have developed many online courses for programs offered by UWP and MBA consortium program jointly offered other University of Wisconsin Universities.

Dr. Michele Gee is a professor of Strategic Management and Global Business at University of Wisconsin-Parkside. Professor Gee also serves as the Associate Dean in the

College of Business, Economics, and Computing (CBEC). As Associate Dean, she is the director of CBEC's two graduate programs: the MBA Program, and the Master of Science in Computer and Information Systems Program. As Director of CBEC's graduate programs, she has been instrumental in developing, coordinating and analyzing assessment criteria, rubrics, and reports for assurance of student learning for F2F and online programs. She has extensive experience in designing, developing and administering in F2F and online programs as well as working with accreditation organizations such as AACSB. Professor Gee has won many awards for teaching, advising, community service, research, and assessment activities.

Assessment of Data Analytics Competency in the MBA Program

Suresh Chalasani, Michele Gee and Parag Dhumal

University of Wisconsin-Parkside

Abstract

The University of Wisconsin-Parkside recently launched a fully online MBA program in partnership with Academic Partnerships (AP). This program has four program-level competencies and fourteen sub-competencies. Our goal in this project is to obtain student performance data for the competencies and sub-competencies. In this paper, we provide preliminary results on student performance data on the following competency: Quantitative analysis and data analytics. We compare both F2F and online program students and draw conclusions on the similarities and differences among these two groups of students. We conclude this paper with insights gained and directions for future work.

Keywords: Online MBA, Competency-Based Education, CBE, Program Assessment

Introduction

Competency-Based Education (CBE) is gaining momentum as an alternative to traditional face-to-face and online delivery modes. In highly flexible CBE programs, students can start anytime, and demonstrate mastery of program competencies at their own pace without the time constraints of semesters and quarters. While fully flexible CBE programs are deemed ideal by adult, working, and non-traditional students, universities require extensive changes to their existing infrastructure and policies to launch true CBE programs. In addition, universities in the USA need to go through comprehensive and lengthy approval processes with accreditation agencies such as the higher learning commission whose policies on CBE are still evolving (Eaton 2016).

The students that are typically attracted to CBE programs are defined as students that are “older, place-bound, and vocationally minded, with significant prior work experience and some prior college experience” (Kelchen 2016). The University of Wisconsin-Parkside launched a fully online MBA program in partnership with Academic Partnerships (AP). Our program is online and follows the semester structure. However, we incorporate a few successful elements of CBE in the program design: (a) courses in the curriculum clearly indicate the competencies that students need to complete; (b) students can register for

seven-week classes; (c) each semester is comprised of two consecutive time periods of sevenweeks each, thus allowing students to take classes in both seven-week periods; (d) students can start the program multiple times, precisely six times, during the academic yearand have the flexibility to complete it in a short timeframe of one year; (e) if students do not have undergraduate degree in business, they have to take up to two prerequisite courses which are focused on meeting required competencies that are necessary for MBA courses.

Related Work and Research Questions

University of Wisconsin-Parkside's online MBA program's curriculum integrates competencies among multiple business areas and challenges students to apply knowledge to real-world settings. Gervais (2016) defines CBE as "an outcome-based approach to education that incorporates modes of instructional delivery and assessment efforts designed to evaluate mastery of learning by students through their demonstration of the knowledge, attitudes, values, skills, and behaviors required for the degree sought." Based on the experience of faculty in developing the first competency-based undergraduate Business program in the UW System, the above definition was further refined to arrive at the following terms to guide the development of CBE courses (Brower 2017).

- *Competency*: The knowledge, attitudes, values, skills and abilities students demonstrate as a function of the degree program.
- *Program-Level Competency*: The "top level" competencies that define the scope of the program, and through which all other competencies are connected. Our online MBA program currently has 4 program-level competencies; these are further subdivided into 14 sub-competencies (see Appendix A for a full-list of competencies and sub-competencies).
- *Assessment-Level Competency*: The specific competencies defined at a finer-grain level. Assessment-level competencies are aligned with program-level competencies; each assignment that student completes in a course (e.g. discussion messages, writing assignments, projects, technical assignments, managerial assignments, exams) are aligned with assessment-level competencies. The number of assessment-level competencies may range from 60 to 90 in our online MBA program.
- *Outcome*: A learning outcome is a written statement of what the successful student/learner is expected to be able to do for each assessment-level competency. Outcomes are very specific, with each assessment-level competency containing approximately 4 to 8 outcomes.

The main research question that we intend to address is whether student success rates are higher if we integrate good practices of CBE in our online MBA courses and whether students are well-prepared to contribute to the workforce by meeting the competencies that employers seek in students.

- RESEARCH QUESTION 1: What do student success rates in online courses with elements of CBE elements incorporated look like? How do these success rates compare with student success rates in other face-to-face and online MBA courses?
- RESEARCH QUESTION 2: What are student success rates in the following specific competencies suggested by our industry advisory board:
 - Apply professional behavioral skills with a particular emphasis on the practice of ethics, diversity and inclusiveness.
 - Work effectively with corporate governance structures including the Board of Directors to implement strategic vision.
 - Analyze disruptive innovation and its impact on the organization.
 - Utilize data analytics and quantitative analysis to support strategic and operational decisions.

Literature and research on CBE program and student success rates is advancing at a more rapid pace in recent years. For example, Rainwater (2016) notes “students found CBE to be beneficial in numerous ways including the ability to learn at their own pace and during times suited to their schedules. ... Students agreed, however, that CBE was best suited to students who were mature, disciplined, and able to direct their own learning.” Mayeshiba and Brower (2017) reviewed the retention rates of 565 students in the University of Wisconsin flexible option CBE programs and concluded that “academic outcomes strongly predict a student's likelihood to reenroll within 6 months. Students who mastered at least one competency set during their first subscription were particularly more likely to reenroll. ... academic outcomes from the previous subscription and the student's longevity in the program also significantly predicted retention.” However, Since CBE programs are becoming prevalent only recently, there has not been much data on student success rates in specific competencies. Our goal in this project is to gather student success data in the research questions outlined above.

In this paper, we report a few qualitative and quantitative results from assessment of the following competency for both face-to-face and online students.

Program-Level Competency C): Engage in continuous improvement to enhance operational performance and promote innovation. Sub-competency: Utilize data analytics and quantitative analysis to support strategic and operational decisions.

Though this paper focusses only on the data analytics competency, a more extensive study to analyze student performance on all competencies outlined in Research Question 2 is underway and will be reported in future. We do not offer the MBA program in the CBE modality. However, these results will inform us on how to structure the MBA curriculum and especially whether any differences exist between online and/or F2F students in terms of mastering these competencies.

Model and Data Sources

This study will first incorporate CBE principles into online MBA courses that are currently under development. These principles will include articulation of competencies; alignment of each assignment with competencies; provision for practice assessments. Student performance in these courses will be assessed for specific program-level competencies including the competencies suggested by the industry advisory board. The comparative study will compare student assessment results from the online MBA courses with those from face-to-face courses that the investigators regularly teach. A statistical study based on hypothesis testing will be conducted to study whether students in the online MBA courses/program perform better in terms of demonstrating competencies and other measures such as retention. The data sources we will use include the following:

- (1) Student retention rates in the online MBA program
- (2) Student assessment results for program-level competencies from the following courses in the online MBA program: MBA700-Creative & Innovative Management; MBA 720-Information Technology for Business Decision Making; MBA729 - Technologies for data Analytics; MBA761-Optimization Techniques; MBA762-Supply Chain Analytics; MBA796-Advanced Strategic Management
- (3) Student assessment results for program program-level competencies in similar courses from our face-to-face MBA program
- (4) Student assessment results for program-level competencies in the online MBA consortium courses that the principal investigators teach
- (5) Graduation and retention rates in our face-to-face MBA program
- (6) Student surveys in online and face-to-face courses

We are gathering results for all the above measures and they will be reported in a future research article. In this paper, we report the results from on the data analytics competencies

from two different courses – MBA720 & MBA761 – each having face to face and online sections.

Evaluation Methods& Results: Data Analytics Competency

MBA720- Information Technology for Business Decision Makin

In 2018-19, a total of 95 students completed MBA 720: Technologies for Business Decisions Making; 48 of these students are enrolled in the MBAO (online) program, while 47 were enrolled in the F2F MBA program. Their performance was measured and compared for the data analytics competency. Several assignments were given to students and students were evaluated consistently along three rubric dimensions: Technology Design, Using Appropriate Data, Making Decisions Based on Data Analysis. In the rest of this paper, these dimensions will be referred to as “Technology Design,” “Using Data,” and “Decisions”. Student performance was categorized as follows: Exemplary (90% or higher); Satisfactory ($\geq 75\%$ and $< 90\%$); Unsatisfactory ($< 75\%$).

The following tables show the absolute number of students and percentages of students for each rubric dimension.

F2F STUDENTS - RAW DATA				
	EXEMPLAR Y	SATISFACTOR Y	UNSATISFACTOR Y	Grand Total
TECHNOLOGY DESIGN	24	12	11	47
USING DATA	41	4	2	47
DECISIONS	26	20	1	47
F2F STUDENTS - PERCENTAGES				
	EXEMPLAR Y	SATISFACTOR Y	UNSATISFACTOR Y	Grand Total
TECHNOLOGY DESIGN	51.06%	25.53%	23.40%	100.00%
USING DATA	87.23%	8.51%	4.26%	100.00%
DECISIONS	55.32%	42.55%	2.13%	100.00%
ONLINE STUDENTS - RAW DATA				
	EXEMPLAR Y	SATISFACTOR Y	UNSATISFACTOR Y	Grand Total

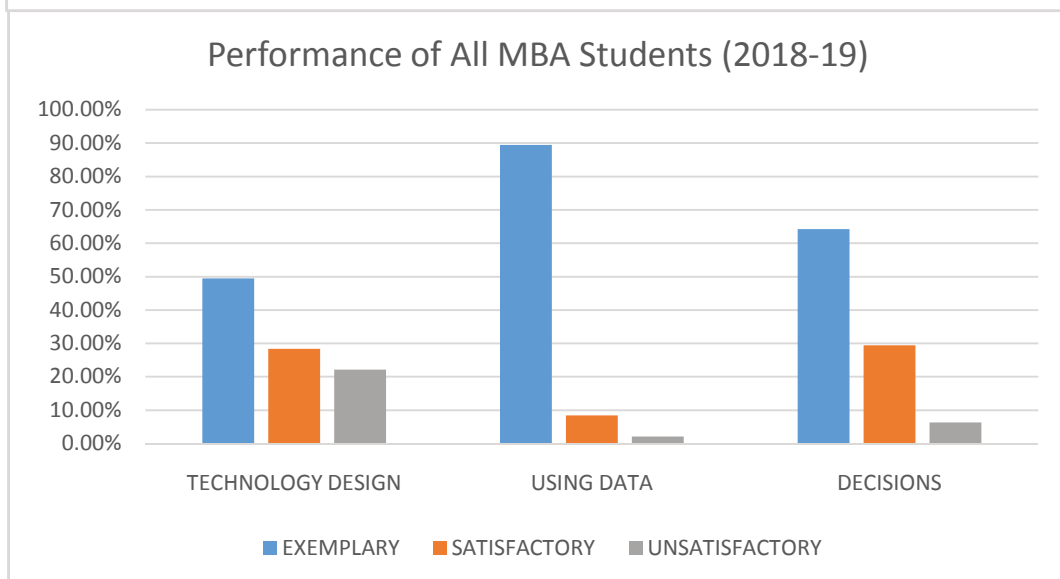
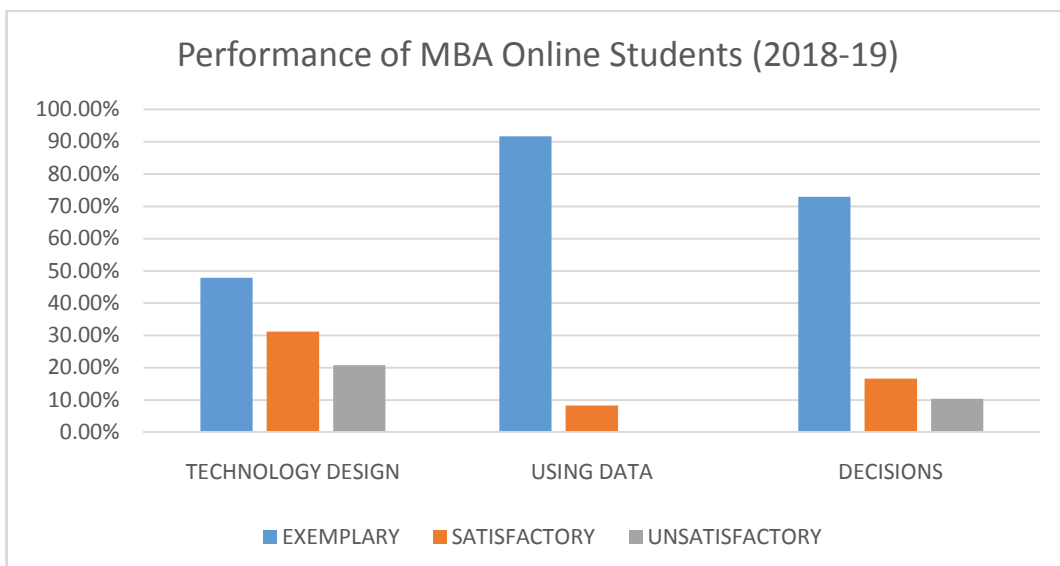
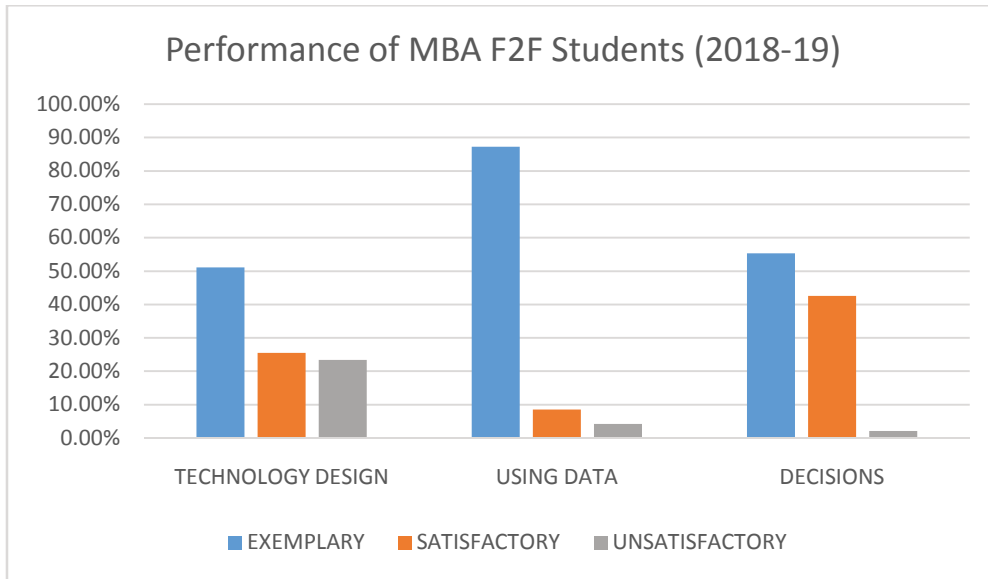
TECHNOLOGY DESIGN	23	15	10	48
USING DATA	44	4		48
DECISIONS	35	8	5	48
ONLINE STUDENTS - PERCENTAGES				
	EXEMPLAR Y	SATISFACTOR Y	UNSATISFACTOR Y	Grand Total
TECHNOLOGY DESIGN	47.92%	31.25%	20.83%	100.00%
USING DATA	91.67%	8.33%	0.00%	100.00%
DECISIONS	72.92%	16.67%	10.42%	100.00%

TOTAL STUDENTS - RAW DATA

	EXEMPLAR Y	SATISFACTOR Y	UNSATISFACTOR Y	Grand Total
TECHNOLOGY DESIGN	47	27	21	95
USING DATA	85	8	2	95
DECISIONS	61	28	6	95

TOTAL STUDENTS - PERCENTAGES				
	EXEMPLAR Y	SATISFACTOR Y	UNSATISFACTOR Y	Grand Total
TECHNOLOGY DESIGN	49.47%	28.42%	22.11%	100.00%
USING DATA	89.47%	8.42%	2.11%	100.00%
DECISIONS	64.21%	29.47%	6.32%	100.00%

The following graphs depict the percentages pictorially.



We also conducted the t-Test with unequal variances test on student performance comparing F2F and online students in each of the three dimensions. For these tests the null hypothesis is formulated as follows:

H_0 : The means of scores for the F2F and Online students are the same for the dimension under consideration.

For the technology design dimension, the null hypothesis is supported. That is, there is no significant difference in the scores for F2F students ($M=108.72$, $SD=38.94$) and online students ($M=116.08$, $SD=24.40$) with a p value of 0.2742. For the other two dimensions, namely "Using Data" and "Making Decisions", the null hypothesis is rejected based on the t-Test results in tables 1 and 2. In other words, there is a statistically significant difference in the mean scores of F2F and online students for "Using Data" and "Making Decisions."

Table 1: *t-Test Results on Scores of F2F and Online Students for "Using Data" dimension.*

	F2F	ONLINE
Mean	73.61702128	67.85416667
Variance	235.5892692	8.893173759
Observations	47	48
Hypothesized Difference	Mean 0	
df	49	
t Stat	2.527710749	
P(T<=t) one-tail	0.007377796	
t Critical one-tail	1.676550893	
P(T<=t) two-tail	0.014755592*	
t Critical two-tail	2.009575237	

Table 2: *t*-Test Results on Scores of F2F and Online Students for “Making Decisions” dimension.

	<i>F2F</i>	<i>ONLINE</i>
Mean	71.77659574	62.85416667
Variance	325.3892229	151.7761525
Observations	47	48
Hypothesized Mean Difference	0	
df	81	
t Stat	2.809579451	
P(T<=t) one-tail	0.00310833	
t Critical one-tail	1.663883913	
P(T<=t) two-tail	0.00621666**	
t Critical two-tail	1.989686323	

MBA761-Optimization Techniques

In 2019, one online and one face to face section of MBA 761: Optimization Techniques was offered. Each section had an enrollment of 7 students. We compare performance of students for the data analytics competency and report our findings here. Three major problems from final exams are considered for analysis. Each problem involved three steps that align with three rubric dimensions. These steps are (i) formulating optimization problem, (ii) developing a spreadsheet model in Excel, and (iii) generating results using SOLVER and making correct decisions. For each dimension, students completing the steps correctly for all three problems were classified as Exemplary, students who complete two problems correctly were classified as Satisfactory, and for one or less problem they were classified as Unsatisfactory.

The following tables show the absolute number of students and percentages for each rubric dimension.

	Face to Face			Online			Total		
	Formulate	Develop	Decision	Formulate	Develop	Decision	Formulate	Develop	Decision
Exemplary	7	4	5	4	3	7	11	7	12
Satisfactory	0	2	1	3	4	0	3	6	1
Unsatisfactory	0	1	1	0	0	0	0	1	1

	Face to Face			Online			Total		
	Formulate	Develop	Decision	Formulate	Develop	Decision	Formulate	Develop	Decision
Exemplary	100.0%	57.1%	71.4%	57.1%	42.9%	100.0%	78.6%	50.0%	85.7%
Satisfactory	0.0%	28.6%	14.3%	42.9%	57.1%	0.0%	21.4%	42.9%	7.1%
Unsatisfactory	0.0%	14.3%	14.3%	0.0%	0.0%	0.0%	0.0%	7.1%	7.1%

Discussion of Results

In MBA 720, overall student performance has been good except for the rubric dimension “Technology Design”. For the technology design dimension, about 22% of the students are in the unsatisfactory category. It is noteworthy that the performance of F2F and online students are very similar for the first dimension “Technology Design.” That is, the mean scores of F2F and online students are not statistically different for the technology design aspect. This is not surprising because many of the MBA students, whether they are enrolled as F2F students or online students, do not come with any significant technology background. In MBA 720, with a short ramp-up, students are asked to construct databases and utilize spreadsheet techniques. This is very likely the cause of the higher unsatisfactory rates in this dimension.

However, for the remaining two dimensions, F2F students perform better (with statistical significance) compared to online students, as evidenced by the t-Test results in tables 1 and 2. A few factors may explain the higher performance of F2F students. The professor leads F2F students in completing hands-on exercises. Though online students can go through the same hands-on exercises through the professor’s videos, the video resources are asynchronous and online students, unlike F2F students, do not have immediate access to the professor if they run into issues with hands-on exercises. F2F students tend to utilize the professor’s office hours better compared to online students. The

professor provides office hours for online students through web-conferencing; however, online students do not utilize these office hours frequently. F2F students utilize office hours and tend to meet with the professor either before or after the class if they run into issues. One significant similarity between online and F2F students is that the percentage of students in the unsatisfactory category is very low for each of these dimensions, even though the mean scores between the two groups have significant differences.

Even though student performance shows above 20% unsatisfactory rate in the “Technology Design” dimension, students do well in this class because technology design is only one component of the evaluation. Students do well in other aspects such as making decisions and arriving at managerial plans related to technologies. Average grades in MBA 720 tend to be at or above B+, which shows that the student demonstrate mastery of the competencies covered in MBA 720.

In MBA 761, when it came to formulating the optimization problem, F2F students performed better than online students. Given that F2F students receive classroom instructions and they can ask professor questions, they have the advantage in learning complex mathematical competencies. When it came to developing spreadsheet model in excel, which required technicalprogrammingskills, we do not find much difference in their performance though they show slightly different distributions. Online students benefitted from receiving video instructions just like F2F students received in class Excel demonstration from professor.

However, one of the interesting and striking observation is that when it comes to ‘decision’ dimension is that online students perform significantly better than F2F counterparts. 100% of online students falls under ‘Exemplary’ category as opposed to 71.40% of F2F students. This trend is also observed in MBA720 where 72.92% of online students falls under ‘Exemplary’ category as opposed to 55.32% of F2F students. Online student profile demonstrate they have significantly higher and richer work expertise. They tend to be better organized and better motivated. They demonstrate leadership skills. In addition, online instructional environment is richer with examples of business practices contributed by all audiences (students and professors) through discussion forums. Online environment stores knowledge more effectively than F2F instructional environment where information is disconnected and the burden of information storage is upon the individual student. Online environment lacks providing synchronous environment and immediate access to professor in case of difficulties but it makes up by proving rich information storage and retention. These factors contribute effectively to better decision-making skills for students learning in an online environment.

Concluding Remarks and Directions for Future Work

In this research project, we reported results based on one academic year's data on student performance for the data analytics competency. Through students perform well in the competency, we discovered that there are significant differences in mean scores between F2F and online student groups in terms of performance for the "Using Data" and "Making Decisions" dimensions. Though students tend to perform well in the competency, the unsatisfactory performance rates in "Technology Design" dimension are more than 20%. In future, we will be collecting additional data on student performance and continue to refine our findings.

Diversity is one of the primary MBA student assessment areas at the University of Wisconsin-Parkside. Thus, we are compiling results for a major diversity-related assignment to ascertain whether there are any significant differences due to MBA course delivery formats: fully online versus face-to-face classes. This analysis is one part of a large-scale research project analyzing assessment results from different business disciplines. The sample in this part of the research project consists of more than 200 MBA students in the required Creative and Innovative Management course from September 2018 through December 2019.

A new, fully Online MBA launched at UW-Parkside in Fall Semester, 2018 and enrollments are continuously growing at a rapid rate. A significantly revised MBA curriculum with six concentrations also began Fall Semester 2018. Both fully online and face-to-face/onsite MBA students have the same curriculum with the same faculty. One of the major competency areas assessed in the MBA Program is students' understanding of how to work creatively and innovatively with diverse workforces to implement strategic vision in organizations. This is critically important for managers as workforce diversity significantly increases around the world. Many organizations are seeking employees and managers skilled in successfully working and collaborating with others across national borders and cultures.

A major assignment in the MBA 700: Creative and Innovative Management class is an essay exam requiring students to analyze a case study and develop specific recommendations for current and potential challenges confronting a very large organization. MBA students in the class have an educational module in the class that includes discussion of diversity and its relationship to creativity and organizational success.

Content analysis is one of the primary analytical methods specifically used to address research questions applicable to this management class. This is a qualitative, textual research method that can yield results to be subsequently analyzed using

quantitative techniques. One of the co-authors of this conference paper has successfully used content analysis in the past (Gee and Norton, 2013). Analysis of the extensive data for the current research project is ongoing and the results will be reported in a future research article.

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Brief biographies of the authors

Dr. Suresh Chalasani is a Professor of Management Information Systems. He teaches in a number of online, CBE, and face-to-face programs including Management Information Systems, Health Information Management and Technology, Sustainable Management, and Project Management. He serves as the Academic Director for the first competency-based Business degree program in the UW System --- flexible option Bachelor of Science in Business Administration --- a program that he helped design and implement. Dr. Chalasani received multiple teaching and research grants from the University of Wisconsin system and the National Science Foundation. He published a number of research articles in journals such as the *IEEE Transactions*, and is currently co-editing a book *Digital Disruption in Healthcare*, which will be published by Springer.

Dr. Michele Gee is a professor of Strategic Management and Global Business. Professor Gee also serves as the Associate Dean in the College of Business, Economics, and Computing (CBEC). As Associate Dean, she is the director of CBEC's two graduate programs: the MBA Program, and the Master of Science in Computer and Information Systems Program. As Director of CBEC's graduate programs, she has been instrumental in developing, coordinating and analyzing assessment criteria, rubrics, and reports for assurance of student learning. Her assessment responsibilities are important for students/courses in the departments of business and also computer science. In addition, Dr. Gee's assessment responsibilities and experience are critically important to maintain AACSB International accreditation of the business program. Professor Gee has won many awards for teaching, advising, community service, research, and assessment activities. Dr. Gee completed online instructor training conducted by University of Wisconsin Extension experts provided to train and assist UW System professors. In addition, she is certified as an online instructor by the UW System MBA Consortium. She has developed and taught an ongoing, online Global Management class for the department of business. She developed and taught multiple MBA courses including MBA 700: Creative & Innovative Management; MBA 746: Advanced Global Management; and MBA 796: Advanced Strategic Management.

Dr. Parag Dhumal is associate professor of Business at University of Wisconsin-Parkside (UWP). He joined Parkside in August 2010. Professor Dhumal also serves as the Faculty of Bachelor of Science in Business Administration (BSBA) program, an online competency based (flex) degree program offered by University of Wisconsin-Extension since its inception in January of 2016. Professor Dhumal developed many online courses for programs offered at graduate and undergraduate level. These include Business Statistics, Global Supply Chain Management, Supply Chain Analytics, and Optimization techniques. For BSBA flex

degree program, he has developed 6 competencies and three projects in the area Supply Chain Management and 6 competencies and two projects in the area Business Analytics. Dr. Dhupal is an active researcher with his interests include Inventory Management, Healthcare Management, pedagogy, Structural Equation Modeling, and Simulation. He has published papers and case studies in many reputed journals such as, but not limited to, *Decision Science Journal of Innovative Education*, *Journal of Computer Information Systems*, *Health & Technology*, *International Journal of Inventory Management* and *Journal of Critical Incidences*. He is recipients of many awards for his research papers at International conferences worldwide. He is Editorial Board member of many academic journals.

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Program-Level Competency& Sub-competencies	
A)	<u>Demonstrate professional conduct.</u>
1)	Work effectively in teams to achieve operational and strategic objectives of the organization.
2)	Demonstrate effective communication skills including: listening, oral, written and non-verbal, presentation skills, audience awareness.
3)	Apply professional behavioral skills with a particular emphasis on the practice of ethics, diversity and inclusiveness.
B)	Demonstrate strategic leadership.
4)	Evaluate and address political, legal, regulatory, compliance and ethical issues that arise in different types of organizations (e.g. Public, Private, Family Owned).
5)	Create a business strategy based on innovation and utilize change management for strategy implementation.
6)	Work effectively with corporate governance structures including the Board of Directors to implement strategic vision.
C)	Engage in continuous improvement to enhance operational performance and promote innovation.
7)	Evaluate and improve operations using data analytics and quantitative methods.
8)	Utilize data analytics and quantitative analysis to support strategic and operational decisions.
9)	Analyze disruptive innovation and its impact on the organization.
D)	Integrate disciplinary techniques to address organization's issues.
10)	Evaluate organization's finances using accounting and financial tools and techniques.
11)	Critique organization's supply chain to improve its efficiency.
12)	Manage projects in the organization with emphasis on scope, risk, time, and cost management.
13)	Create a workforce development strategy to recruit and sustain a diverse workforce for the organization.
14)	Develop an effective marketing and sales strategy to achieve organizational objectives.

A Narrative Review of Tourism Course in Vocational Higher Secondary Schools, Kerala

Nimina Ramachandran, Sindhu R Babu

Kannur University, Mahatma Gandhi University

Abstract:

Vocational Education can be defined as skilled based education. Vocational education consists basically of practical courses through which one gains skills and experience that are directly linked to a career in future. Vocational Higher Secondary Education (VHSE) can help the students to be more productive and creative. Tourism education is important to improve employee's abilities and promote the tourism industry's capabilities. The educational institutions are the backbone for the societal development of any region. At present Vocational Higher Secondary Education of Kerala State offers Travel and Tourism course under Humanities branch in 23 schools based on the curriculum framed by the Vocational Higher Secondary Education Department. VHSE prepare the students for competencies in tourism and empower them to enter into various occupations or self-employment. The main aim of this study is to review the curriculum of tourism with respect to vocational higher secondary school. On the basis of secondary data analysis the study also investigate the current scenario and methods provided to the students for acquiring vocational training. The study can be beneficial to assess and update the curriculum according to the current industry trends for promoting tourism employability.

Key Words: Vocational Education, Tourism, Curriculum, VHSE, Kerala

1. Introduction

Vocational, or skills-based, education is becoming more relevant. Today's demanding work culture expects new employees to be equipped with basic skills while entering into employment after higher secondary education. Vocational education is a practical oriented course through which students can gain skills and experience directly linked to a career in future (Kaushik, 2014). It helps students to be skilled and in turn, offers better employment opportunities. UNESCO (1974) defined vocational education as "a comprehensive term embracing those aspects of educational process involving in addition to general education, of practical skills, attitudes, understanding, and knowledge relating to occupations in various sectors of economic and social life".

The main aim of this study is to review the curriculum of tourism with respect to vocational higher secondary school. On the basis of secondary data analysis the study investigates the

current scenario with regard to vocational training owned to the students. The paper starts with introduction followed by an insight into the vocational education in India and Kerala. Then the study discusses about the tourism course in VHSE Kerala and the content of tourism course curriculum. The study also suggests several measures that could be taken to improve existing education system.

2. Review of literature

2.1 Vocational education in India

Education is one of the main factors that boost economic growth in any country and India is no exception. Overall national growth is possible by offering skill based education and training to the young population (Kaushik, 2014). In India, the Vocational Education, Training and Skill Development sector is not regulated and under-developed both at National and State level. There is no single regulatory mechanism for vocational education at present. While Vocational Education is under the control of Ministry of Human Resource Development (MHRD), the Industrial Training (ITIs) units are under Ministry of Labour and Employment (MoLE) at the Centre. (Shantaram, S. M, 2012) The AICTE prepares curriculum design, certification and standardization of syllabus and monitors the entire vocational higher educational structure. The ministry also controls vocational education in the secondary schools. This is done through National Council for Education Research and Training (NCERT). The NCERT prepares curriculum, certification etc for vocational education at secondary school level. (Mehrotra, S. et al, 2014)

The Government is now promoting coordinated action for skill development with the involvement of key stakeholders - National Council on Skill Development (NCSD), National Skill Development Corporation (NSDC), Central Ministries, State Governments, , National Skill Development Coordination Board (NSDCB), and Industry represented by the Sector Skill Councils (SSCs). The Ministry of Human Resource Development (MHRD) has adopted the National Skill Qualification Framework (NSQF), to emphasize the significance of the integration of the vocational education and training (Mehrotra, S. et al, 2014). NSQF is a descriptive framework that organizes qualifications according to a series of levels of knowledge along with skills. These levels are defined in terms of learning outcomes i.e., the competencies which the learners must possess regardless of whether they were acquired through formal, non-formal or informal education and training. The Government has set a target for providing skills to 500 million people by 2022, and skilling people are among the most important priorities of the Government in the 12th Five Year Plan. (Pal, S.S et al, 2017)

2.2 Vocational education in Kerala

Vocational education was introduced in the State of Kerala with the main objective of equipping the students for various identified occupations. It was introduced as part of the National Policy of Education with the vision of empowering the students with occupational skills in securing jobs along with education (Poobala, L.R, 2017). Department of VHSE conduct a two year course in higher secondary level. Courses are conducted in Govt/ Aided school & technical high school. Vocational Education was introduced at 10+2 stage in 19 schools in 1983-84 in Kerala. It was extended to 73 schools in 1985-86 offering 27 different vocational courses. 100 VHSE schools with 200 batches (sections) were there in the year 1988-89. The programme continued to expand every year until 1995-96 and the number of schools went up to 310 with a total of 814 batches offering 45 different courses. At present there are 389 VHSE schools with a total figure of 1100 in the state imparting Vocational Higher Secondary Education in 35 restructured courses with modernized curriculum. Of the 389 schools, 128 schools are in the private aided sector and 261 are in the government sector (www.vhse.kerala.gov.in) Each institution admits 25 students in one course with a marginal increase of 20% seats if community demands it.

Table 1 – The Structure of VHSE Curriculum

Components	
Part 1 1. Language - English 2. General Foundation Course (GFC).	Compulsory
Part 2 Vocational Subject (Theory and Practical)	Compulsory
Part 3 Group A – Physics, Chemistry, Mathematics Group B- Physics, Chemistry, Biology Group C- History, Geography, Economics Group D- Business Studies, Accountancy, Management	Optional

Source: Department of Vocational Higher Secondary Education, Kerala, online admission profile, 2015

The VHSE curriculum is split into three parts. In these three parts, Part I and II are compulsory subjects for all the students and part III is optional for the VHSE students.

The VHSE sector in Kerala is getting shifted to the National Skill Qualification Framework (NSQF) in the academic year 2018-19 onwards. NSQF is a competency based framework that organises qualification according to a series of levels of Knowledge, skills and aptitude. In the first stage, NSQF has been implemented in 66 government VHSE schools based on 12 job roles. Tourism and hospitality branch offer customer service executive (Meet & Greet) course in two VHSE schools in Kerala (www.vhse.kerala.gov.in/vhse/circulars/NSQF.pdf).

2.3 Tourism Course in VHSE Kerala

At present Vocational Higher Secondary Education of Kerala State offers Travel and Tourism course under Humanities branch in 23 schools based on the curriculum framed by the Vocational Higher Secondary Education Department. Of the 23 schools, 15 schools are government aided and 8 schools are directly under the control of Government of Kerala. It is evident that majority of schools are in government aided sector. There are no VHSE schools in the unaided sector. There are 675 seats available in every year. South Kerala is having the total of 12 Tourism VHSE Schools. Thiruvananthapuram district has the highest number of schools (5), followed by Kollam (3), Kottayam (2), Alappuzha (1) and Pathanamthitta (1). A lesser concentration of schools can be seen in the northern districts. There are 8 VHSE Tourism schools in Central Kerala, i.e. Ernakulam (3), Thrissur (3), Palakkad (1). There are only a very limited number of schools offering tourism course in northern Kerala, i.e. Kasargod (2), Malappuram (1). So the government has to offer tourism course in more schools in north Kerala. (http://www.vhscap.kerala.gov.in/vhse_cms/frame.html)

2.4 The Content of Tourism Course Curriculum

According to Tribe (2002) curriculum is a package of various modules or courses that provides knowledge, skills, attitude and competencies for all educational degree programmes. In general the main aim of tourism curriculum is to bring out competent graduates with skill and knowledge fit for tourism profession. Nhuta (2015) defined "tourism curriculum as a set of tourism generic and managerial knowledge (content) and skills (competences) that are to be imparted to a tourism learner by the qualified lecturer, using systematic approach in deliberation of knowledge and skills; using facilities that bolsters the goal of producing a graduate that can manage and operationalize the tourism business into foreseeable future, with a sustainable competitive advantage through the investment in the human capital that cannot be counterfeited."

VHSE prepare the students for competencies in tourism and empower them to enter into various occupations or self-employment. With the introduction of revised curriculum of vocational subjects from the academic year 2015-16, the tourism course consists of 4 modules; in this course, after the completion of each module the student attains skill in various areas of Travel and Tourism industry. Upon the successful completion of each module, the State Education Board will provide certificate to the student based on the competencies acquired. The board issue certificate in tour co-ordinator, certificate in Travel assistant, certificate in Tour and Hospitality Assistant, and certificate in Air Travel Management and Electronic Booking Tool. In addition to these certificates the student is eligible for a trade certificate and a certificate stating eligibility for higher studies. The student is also eligible for getting on the job training certificate from the in plant manager. (<http://www.scert.kerala.gov.in>)

Table 2- course structure

Module 1			
Tour Co-ordinator			
Units	Periods	Ideas/ Concepts/ Skill	Practicals
Introduction to travel & tourism industry	31	1. Professional Skill 2. Interpersonal skills 3. Self Learning skills <ul style="list-style-type: none"> • Tourism- Scope and definition • Travel - purpose of travel. • Types and forms of tourism • The basic components and elements of tourism • Role of National Travel Organisations in promoting tourism • Travel and Tourism Terminology 	<ul style="list-style-type: none"> • Introduction to use internet • Familiarise various search engines such as ted.org, Wikipedia, Google earth, edutoipa.org • Power Point and Chart preparation of components and elements of tourism. • Chart preparation of NTOs • Tourism Terminology: Visitor, Tourist, Excursionist, Day Tripper, International, domestic, inbound, outbound, Tour Itinerary, Package, Travel Agency, Tour Operator, Airline, Destination, Origin, Configuration, ETA,

		4. Computer skills	ETD, Charter flight, Cruise liner, Car rental, <ul style="list-style-type: none"> • Parts of computer , input , output device. Types of software's, Computer languages and operating systems
Communication Skills in travel and tourism industry	36	<ol style="list-style-type: none"> 1.Communication skill 2. Professional skill 3.Self Learning skills 4.Interpersonal skill 5.Temwork skill 6. Functional skills <ul style="list-style-type: none"> • Communication relevant to travel and tourism industry, Communication Process, Elements, Types • Self introduction, meet and greet, language and tone required for travel and tourism industry. • Communication in Travel and Tourism industry • Personal Hygiene, manners, etiquettes, types of Handshakes • Formal communication with customers <ol style="list-style-type: none"> 7. Computer Skill 	<ul style="list-style-type: none"> • Audio-video presentation and interpretations, edu sat .com, Ted.com, news paper • Inviting guests, Meeting and greeting • Speech: Self Introduction session Handshakesdemonstration, body language • E- travel magazines, brochure preparation • Role plays- Front Office, TIC • Customer care videos • Key board familiarisation, power point - Report writing
Destination management	35	<ol style="list-style-type: none"> 1.Social Development skills 2. Product knowledge skills 	<ul style="list-style-type: none"> • Field visit to nearby destinations • Picture album on various of tourist destinations, map work

		<p>3. Communication skills</p> <ul style="list-style-type: none"> • Types of tourist destinations • Local and state wide tourist destinations • Destination Facilitators • Impacts of Tourism- Social, Cultural , Economic, Environmental • Responsible Tourism in Kerala <p>4. Computer skills</p>	<p>for identifying destinations, chart preparation, CD presentation, conduct an exhibition on based on the practical works done by the students.</p> <ul style="list-style-type: none"> • Meeting tour guides and sharing experiences • Seminars, Case studies, Debates, Chart preparation based on impacts of tourism • Case studies based on responsible tourism in Kerala. • Prepare a tourism glossary • Internet and web page designing based on tourist destinations, Procedure of manipulating text and formatting documents.
Practical	238		
Total periods	340		
Module 2			
Travel Assistant			
Travel Essentials	34	<p>1. Documentation skills</p> <p>2. Presentation skills</p> <p>3. Numeracy skill •</p> <ul style="list-style-type: none"> • Definition and Significance of Travel • Travel Documents • Travel Motivator • Modes and means of tourist transport <p>4. Computer skill</p>	<ul style="list-style-type: none"> • Online passport application and formalities • Familiarisation of TIM- visa, health requirements, airport tax -a comparative study • Album preparation- Travel Through the Ages , Motivation for travel • Group discussion/ Debate/Album preparation on means and modes of transport - adv& dis adv • Govt. Letters and govt.order

			preparation, Table creation and mail merge, e-mail receiving and sending, free e-mail services.
Travel Geography	37	<ol style="list-style-type: none"> 1.Product Knowledge skill 2.Observation skill <ul style="list-style-type: none"> • Continents, Oceans and Seas • States, Capitals, cities • Major fairs and festivals of India • Major airlines and airports of India • Importance and reading of signage • Travel terminology 4.Computer skill 	<ul style="list-style-type: none"> • Preparation of facts file of Kerala • Map work - identification of districts, major rivers, lakes backwaters, hill stations , WLS, NPS, bird sanctuaries, tiger reserves, beaches, historical monuments, pilgrim centres, national highways, pilgrim centres. • Preparation of Tourist Circuits:. Picture album of major fairs and festivals of India. • Preparation of fact file of India : identification of states, major rivers, lakes backwaters, hill stations , WLS, NPS, bird sanctuaries, tiger reserves, beaches, historical monuments, pilgrim centres, national highways, pilgrim centres, • letter code of cities, airport. • Identification of signage • Travel Glossary preparation • Chart preparation, Google map search
Tourist transport facilities in india	31	<ol style="list-style-type: none"> 1.Product knowledge skill 2.Observation skill 3. Numerical skill <ul style="list-style-type: none"> • Air transport 	<ul style="list-style-type: none"> • PPP in 5 major international airlines , five airports, 5 low cost airlines, Chart preparation on on charter

		<p>operations</p> <ul style="list-style-type: none"> • Parts of an aircraft • Sea transport • Tourist trains • Special Fares • Various forms Road Transport <p>4.Computer skill</p>	<p>flights</p> <ul style="list-style-type: none"> • Chart preparation on carry on items and extra baggage allowance of various airlines, customs 3.3 Design a model aircraft using thermocol, airport visit • Map work of seaports and ppp of tourist facilities available in cruise ships • PP of various trains ad its facilities, picture album, route map of the luxury trains and heritage train service. • Chart work and news collection of special fares - Air, Rail • Quiz on the major air, rail and sea transport in inda. • PPP showing facilities of modern trends in airline industry 3.9 Tourism glossary
Practical	238		
Total Periods	340		
Module3			
Tour and Hospitality Assistant			
Tour Handling	25	<ul style="list-style-type: none"> • Preparation of itineraries • Tour costing and Pricing • Tour brochure Preparation • Approval of tour guides in India in Region wise 	<ul style="list-style-type: none"> • Construct tour itineraries • Construct tour costing • Prepare chart of foreign language phrases • Role plays using basic phrases in foreign languages. • Field visits to Museums, heritage sites. • Introduction to Photoshop

		<ul style="list-style-type: none"> • Etiquettes of Tour Guides • Basic greetings- phrases in foreign languages [French&German]. 	<ul style="list-style-type: none"> • Prepare a tour brochure
Hospitality Management	37	<ul style="list-style-type: none"> • Hospitality industry • Major hotel chains in India and world. • Departments in hotel • Front Office, Lay out of Front Office, Types of reservation • House Keeping, Functions of Housekeeping, Types of Room, Types of Bed • Food and Beverage Production Food and Beverage Service, Equipments used in kitchen • Operations with other Departments. • Terms used in hotel industry. 	<ul style="list-style-type: none"> • Preparation of organizational charts • Picture albums of different kinds of hotels and resorts • Field visits to Hotels/resorts • Table setting in a hotel/ restaurant • Introduction to Coral draw • Drawing lines, shapes, inserting pictures, objects, tables and tinplates. • Creation of Visiting cards and Id cards. • Creation of outline map of (India/Kerala) using coral draw
Event Management	25	<ul style="list-style-type: none"> • Event Management • Characteristics of event management • Five C's(Conceptualization, Costing, Canvassing, Customization, Carrying out) • Categories of event, Process of event 	<ul style="list-style-type: none"> • Organize a event in connection with World and National Tourism Day celebration at school • Prepare a sample event budgeting/ expenditure in excel format • Prepare a chart and PPT of C's of events and categories of events

		management <ul style="list-style-type: none"> • Key elements of events • MICE , ICCA, ICPB • Major travel fairs in the world ITB Berlin, Arabian Travel Market (ATM), WTM ,KTM 	<ul style="list-style-type: none"> • Prepare a picture album of Major tourism events in the world • Visit to any major event like KTM/TTF /Exhibition /Fairs etc • Logo Creation on any aspect of tourism(e.g. organizations, airlines, car rentals
Practicals	253		
Total	340		
Module 4			
Air Travel Management and Electronic Booking Tool			
Air Travel and Airport Management	35	<ul style="list-style-type: none"> • Air Travel Organizations- ICAO,IATA –UFTAA- PATA,ASTA TAAI • International Conventions Warsaw,Chicago, Montreal • Freedoms of Air • Major continents of the world , TC Areas • Major countries capitals, cities, airports with codes • Airline codes • Currency codes • Airport procedures • Various class of services in a flight • Arrival formalities • World Time Zone and Flying Time 	<ul style="list-style-type: none"> • PPT - type of journey with examples • Field visit to Airports Visit Tourist Reception Centre of KTDC and CRS • PPT presentation of air travel organizations • Role play of Check-in formalities • Preparation of chart showing World Time Zone • Networking, Browsing skill and fundamentals of Web designing • Website creation of a tourism firm.

		<ul style="list-style-type: none"> • Calculation • Journey • Global indicators • Familiarization of (Manual)Fare calculation (One way- Mileage principle HIP, BHC, ec)- • Air cargo and logistics 	
Global Distribution System	21	<ul style="list-style-type: none"> • Introduction to Galileo • Functions of Galileo • Types of screens • Working with GDS • Phonetic alphabets • SSR and OSI codes • Billing and Settlement Plan [BSP] 	<ul style="list-style-type: none"> • Map work – IATA Codes for cities and Airports, Routing • Visit Seva Kendra/Passport Seva Kendra and familiarize with the Amenities at the Airports. • Practicing PNR creation in GDS (AMADEUS/GALILEO) • Travel portals: Make my trip, Yatra.com, Travel advisor.
Marketing & Recent trends in Tourism	31	<ul style="list-style-type: none"> • Tourism Marketing • Unique features of Tourism Product • Major steps in Tourism marketing • Marketing Mix-7 P's of Marketing • Tourism Market segmentation ,Benefits • Criteria used for dividing market segmentation • Major travel portals and travel apps 	<ul style="list-style-type: none"> • Prepare a chart of Marketing Mix • Prepare PPT/Chart - features of tourism products • Prepare international tourist arrivals in excel format- graphs.pie diagram etc. • Prepare individual Blogs of Students on tourism. • Familiar with Apps .used in travel industry. • Practice in online travel web sites like IRCTC, yatra, clear trip, etc
Practical	253		
Total	340		

Source: <http://www.scert.kerala.gov.in>

3. Curriculum review

- The curriculum is structured in such a way that students attain required skills for working in tourism industry.
- The Tourism curriculum gives an in depth knowledge to the students both in theory and practical
- The curriculum encourages students to enter in self employment activities.
- The syllabus assigns adequate practical oriented assignments and projects to the students. In fact practical hours are more than theory hours. It helps to improve essential skills required in tourism business.
- There are 70% hours for practical and 30% hours for theory in each module.
- Practical classes make the students easier to guide a tourist, to do bookings in air, rail, and hotels, to prepare packages tours.
- The curriculum has been updated in the recent years.
- Each Module (Tour Co-ordinator, Travel Assistant, Tour and Hospitality Assistant, Air Travel Management and Electronic Booking Tool) which are included in the curriculum are equally important to work in tourism industry.
- Curriculum offers information regarding job opportunities and business opportunities to the students.
- Curriculum suggests for field visit to Museums, Heritage sites and other nearby tourist attractions. It gives more idea about tourist destinations and its importance
- Field visit to travel service centres, hotels and airports help the students to familiarise with industry and make them confident to work after completing Vocational trade.
- Event management subject make the students to organise small events and give opportunities to visit to any major event like KTM/TTF /Exhibition /Fairs etc
- Workshop and Seminar help the student to get more exposure on tourism industry.

On-the-Job Training in VHSE

On-the-Job Training (OJT) is an important component in VHSE course. It aims to equip the students to train within the work environment that are under normal working conditions and thereby improve the skill sets. Through on the job training, students can gain both general skills and specific skills for a particular job. On-the-job training typically includes verbal and written instruction, demonstration and observation, and hands-on practice and imitation. As the part of practical training, the students are taken to a travel agency or hotels or tour operation or airport or other travel related service centre to work in a real life situation under the guidance of an expert practitioner. There must, therefore, be provision for On-the-Job Training (OJT) for certain number of hours for every vocational course. The teacher and

the industry expert may evaluate the project work given to the students individually or in small group. It encourages the students to consolidate their knowledge, learn to communicate, and achieve the time target. The OJT must be given in two spells of 15 days each or OJT must be given as internship after the completion of the course and the learner opt either higher study or internship

4. Suggestions

The following suggestions are made in view from some literature, observation and interaction with teachers.

- Vocational Higher Secondary Schools shall coordinate placement services in association with industry. This would motivate to the students to join for vocational education. It would also provide more market-orientation to the vocational course due to interaction between the employers and the educators.
- Admission criteria for VHSE should be revised and aptitude test shall be conducted
- Guidelines for starting self-employment shall be included in the syllabus
- At least six months apprenticeship training shall be made part of the course curriculum
- VHSE department shall take initiatives in establishing school industry linkages
- Funds should be allocated for field visit of students.
- Permanent teachers shall be appointed in government schools and preference should be given to those with teaching and industry experience
- Higher education institutes offering tourism course shall give preference to VHSE tourism students for admission so that more students opt tourism as a career.
- Scholarships and stipends shall be given at the time of admission and on the job training so that more students can be attracted to join the course.
- The teachers and vocational instructors shall be provided with refresher courses to update with recent technology and developments in the field of tourism and hospitality management.

5. Conclusion

Vocational Education gives strength to any state's economy and its employment. Kerala being a developing state has come a long way to enhance and implement Vocational Education. The vocational higher secondary education in Kerala is nearing its 30 years of existence in the state. The study has been able to provide a clear picture of Tourism Course and curriculum of the Vocational Higher Secondary Education in Kerala. The content of the VHSE course curriculum should give an in depth knowledge both in theory and practical.

Curriculum should be sufficient enough to develop the skills of the students in order to get a job or enter in to self-employment. The Government should take up some dynamic and creative steps in empowering the students undergoing VHSE education of the State of Kerala to make it more vibrant and dynamic.

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India's Road to Sustainable Development & Risk Management

Anirudh P S, Manu M Muralee and Padma Mohan

The Choice School, Tripunithura

Abstract

India's population of 1.3 billion exerts tremendous pressure on India's finite resources and imposes an environmental risk in the form of actual and potential threat of adverse effects on living organisms and the environment by effluents, emissions, wastes, resource depletion, etc., arising out of production and consumption activities. To sustain the ever-expanding population, it is vital for the country to adopt suitable measures to conserve its resources and at the same time improve the economic and social welfare of its people. To this effect, the Government of India's energy policy, focuses on wind and solar to achieve energy security and sustainability objectives. However, sustainable development cannot be achieved by government efforts alone. There is a need for active involvement of the public in the pursuit of long-term sustainability. A number of NGOs have been actively involved in spreading awareness and encouraging people to adopt eco-friendly lifestyles. This has contributed to the introduction of innovative techniques to combat environmental issues within the community; keeping in mind means to manage the risk in a way best suited to protect human health and environment. This paper focuses on the efforts of Energy Conservation Society, a premier non-governmental voluntary organization committed to the cause of promoting Energy Conservation, Environment Protection and Sustainable Development in the country. The activities of ECS include education and training of technicians and engineers in the practice of energy conservation, consultancy and advisory services, renewable energy development, and energy auditing in public building, industries, commercial establishments and other premises of major energy consumption.

This paper presents statistical evidence on the effectiveness of their projects, the improvement in the lives of the people and the management of risks associated with their initiatives. The results indicate that through collective and focused efforts, the goals of sustainable development can be achieved leading to a better and brighter future. Keywords: Poverty Alleviation, Alternative renewable energy, Gender equality Main Conference Topic: Sustainability, Environment & Risk Management, Education.

Sustainable Development

Sustainable development refers to development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.

A large proportion of the population mistakes sustainable development for being environment friendly. While protection of the environment is an essential component, the focus of sustainable development is far broader. It's also about ensuring a strong, healthy, and just society, and reducing absolute poverty by providing lasting and secure means of livelihood with minimum depletion of resources, environmental degradation, cultural disruption, and social instability.

India's Sustainable Development Goals India's population of 1.3 billion accounts for 17% of the world's total population. However, the nation accounts for only 2.5% of the world's geographical area. This has exerted tremendous pressure on India's finite resources and has imposed an environmental risk in the form of an actual and potential threat of adverse effects on living organisms and the environment by effluents, emissions, wastes, and resource depletion, arising out of production and consumption activities.

To sustain the ever-expanding population, it is vital for the country to adopt suitable measures to conserve its resources and at the same time improve the economic and social welfare of its people.

India's Sustainable Development Goals are aimed at striking a balance between the three pillars of sustainable development - economic, social, and environment. For this purpose, India has launched several programs to realise the goals despite being faced with the constraints of relatively low per-capita income, large population, and vast geographical expanse.

Sabka Saath Sabka Vikas, translated as "Collective Effort, Inclusive Development", forms the cornerstone of India's national development agenda. As such, India has shown great commitment in achieving universal rural electrification, road and digital connectivity for all, massive expansions of clean and renewable energy, sanitation and housing for all, and universal elementary education.

The country's Parliament has organized several forums and implemented various initiatives for the elimination of poverty, promotion of gender equality, and for combating climate change.

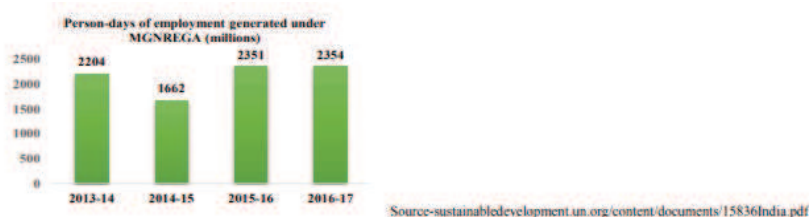
The NITI Aayog, under the chairmanship of the Prime Minister, has carried out a detailed mapping of the 17 Goals and 169 targets to fast track the implementation of SDGs across the country.

Policy Initiatives for Sustainable Development

1) Poverty Alleviation Programmes

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

provides a legal guarantee of a minimum 100 days of wage employment per household every year for unskilled workers in rural areas. In the year 2016-17, the person-days of employment generated under this scheme was 2354 million and the numbers have been steady over the last few years. Women and disadvantaged groups have been the largest beneficiaries of the programme accounting for 56% and 39% of person-days of work generated in that year. The government's budgetary allocation for this scheme has increased by 72.9% from 34700 crores in 2014-15 to 60000 crores in 2019-20. As a proportion of the total expenditure of the government, there has been an increase from 1.93% in 2014-15 to 2.15% in 2019-20 which indicates the importance of this scheme and the increasing financial commitment of the government towards providing lasting and secure means of livelihood. A basic drawback of this scheme is that the wages provided is too low and the duration of employment provided is for too short a period to make any appreciable impact on the living standards of the poor.

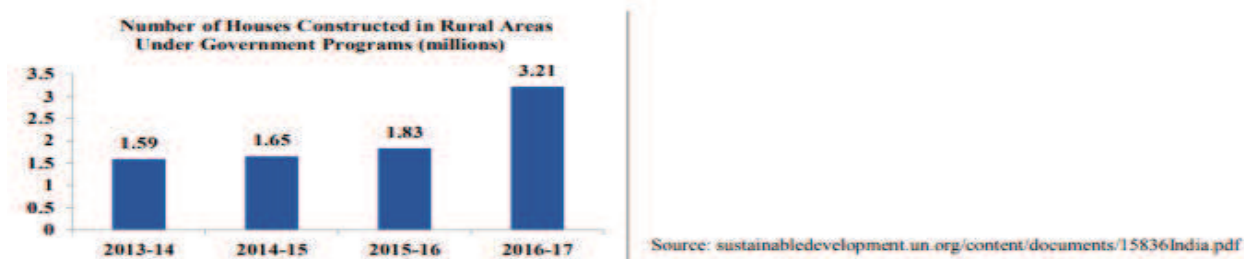


With only 2.3% of the workforce having undergone formal skill training, the National Skill Development Mission was launched to set up an institutional framework for the rapid implementation of skill development efforts across India. The focus is on imparting skills in line with industrial demand in order to make people employable. The objective of the mission is to provide the institutional capacity to train a minimum of 300 million skilled people by the year 2022.

A study by the Planning Commission had estimated that to transfer Re 1 to the poor, the Government had to spend Rs 3.65 in the form of food subsidies, showing that cash transfers would increase welfare and reduce its expenditure. To improve the efficiency of these

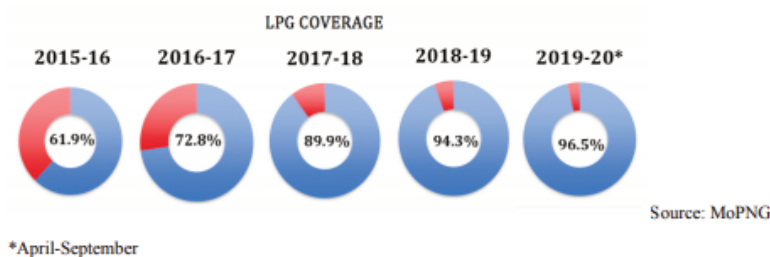
transfers, the world’s largest financial inclusion programme, The Pradhan Mantri Jan Dhan Yojana (PMJDY) was launched in 2014, which has enabled the Government to disburse a cumulative amount of 107904 crore rupees to 38 crore beneficiaries through Direct Benefit Transfers. This has allowed the Government to deliver the benefits directly into the accounts of beneficiaries and has also minimised leakages. The scheme provides an accident insurance cover of Rs 1 lakh and a life insurance cover of Rs 30000. This initiative has enhanced the effectiveness of several social security schemes in the country.

Another ambitious initiative is „Housing for All by 2022“. Under this program, the government has provided assistance in the construction of 3.21 lakh houses in 2016-17 in rural areas.



To address the problem of food insecurity, the National Food Security Act provides a basic quantity of food grains to nearly 75% of the population in rural areas and 50% of the population in urban areas at affordable prices under the Targeted Public Distribution System.

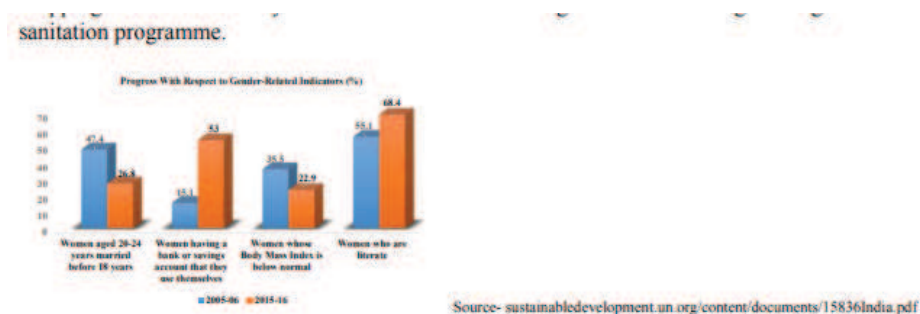
In 2016, The Pradhan Mantri Ujjwala Yojana was launched in order to meet the clean cooking fuel needs of the poor and to safeguard the health of women and children. As a result, 96.5% of households have obtained an LPG connection compared to 61.9% prior to the implementation of this scheme.



The government has also implemented several other schemes such as National Livelihoods Mission, Make in India, Integrated Child Development Scheme, mid-day

meals, Janani Suraksha Yojana (JSY), and many more which are aligned with the policy of ensuring that „no one is left behind“.

- 2) Gender Equality The Government of India has implemented several welfare schemes to curb the practice of female foeticides and sex-selective abortions. In addition, the government has launched the Beti Bachao Beti Padhao (Save the Girl Child, Educate the Girl Child) movement to catalyse a change in the mind sets of the people as well as protecting and educating the girl child. Over a period of 10 years from 2006 to 2016, the literacy rate among women has increased from 55.1% to 68.4%. Additionally, the absence of adequate infrastructure for sanitation and menstrual hygiene management in schools is one of the factors that contribute to girls dropping out of secondary school. This issue is being addressed through the government’s flagship sanitation programme.



Energy Policy India’s energy policy focuses on wind and solar energy to achieve its energy security objectives. As a tropical country, India has massive potential for harvesting wind and solar power. The government has encouraged households and firms to set up solar panels to generate electricity for self consumption and sell the surplus to the state electricity board.

There are four key objectives to India’s energy policy: Access at affordable prices, improved energy security and independence, greater sustainability, and economic growth. The policy lays heavy emphasis on de-carbonisation through the twin interventions of energy efficiency and renewable energy. While the policy does place emphasis on the two major Renewable Energy sources – solar and wind, the importance of other Renewable Energy sources is also well recognized.

However, the goals of sustainable development cannot be achieved by the government’s efforts alone. Poverty alleviation will have to largely remain in the domain of the Government, but protection of the environment and conservation of non-renewable resources are the responsibility of all citizens. Therefore, there is a need for active involvement of the public in the pursuit of long-term sustainability. Recognizing this, a

number of NGOs and individuals have been involved in promoting energy conservation and the adoption of sustainable practices for a greener and cleaner environment. This paper highlights the efforts of such individuals and NGOs.

Case Study 1 - Energy Conservation Society

Formed on 08 July 1992 at Thiruvananthapuram, Kerala, Energy Conservation Society (ECS) is a premier non-governmental voluntary organization committed to the cause of promoting Energy Conservation, Environment Protection, and Sustainable Development in the country. It is the only NGO in Kerala that solely focuses on spreading awareness on energy conservation. Their areas of activity include:

Non formal energy and environmental education at primary, secondary and tertiary levels of education. ii. Information dissemination on energy, environment, and sustainable development.

iii. Training of technicians and engineers in the practice of energy conservation.

iv. Consultancy and advisory services to educational institutions, industries, commercial establishments, and governmental agencies on energy conservation and renewable energy development.

v. Energy auditing in public buildings, industries, commercial establishments, and other premises of major energy consumption

As part of their own non formal educational efforts, they have established around 2000 school level Energy Conservation Clubs (ECC) and college level Energy Environmental Conservation Clubs (EECC) in Kerala and outside the state.

A Kerala State Energy Conservation Rally has been organised to promote the use of bicycles for Energy Conservation and health. The rally is from Kasargod to Thiruvananthapuram, covering a distance of 579 km.

Haritha Keralam is a program aimed at planting trees during the rainy season with the objective of increasing forest cover and giving back to the environment.

Energy Guard, introduced in 2015, is a program aimed at training students to become energy managers of their homes. So far, 85 such programmes have been completed. This has provided training to over 4000 students.

A 3 month Solar Energy Training programme has been undertaken for engineering graduates and practicing technicians, with 2500 being trained thus far.

„Oorja Samrakshana Yagnam“ is a project which was implemented with the ambition of training students to log the energy meter readings in their homes and thereby reduce electricity consumption. Around 12000 students from all over Kerala participated in this programme. This resulted in the reduction of 4 MW of power in a year.

More than 120 seminars have been conducted on topics such as future fuels, electric vehicles, environment impact assessments, alternate fuels, and waste to energy conversions, with at least 6000 people being trained through these seminars. Energy auditing has been undertaken in 120 small and medium industries and 45 institutions. These reports have been brought to the government's perusal. Through its efforts, ECS has trained over 30000 people in the last 10 years, and it has around 8500 student members engaged in its activities.

In the process of our study, it has come to our notice that certain individuals and establishments have adopted sustainable practices with the aim of making the world a better place. Innovations by the common people contribute to sustainable development and inspire viable ideas for the future.

Case Study 2 - Spice Village CGH Earth Resort

Spice Village CGH Earth Resort, Thekkady shows the way for a cleaner and greener future. This resort's design is akin to a „native village“, constructed with the know-how of the local populace, adhering to the spirit of the mountains and inherent traditions.

They have developed self-sustaining systems symbiotic with the environment. Albeit the construction of the resort required the cutting down of trees, it was compensated by creating a man-made forest which allowed the endangered Niligiri langurs, endemic to the Periyar Tiger Reserve, to visit the resort on a regular basis.

The roofs of the cottages are thatched with elephant grass containing silica deposits which are harvested from the forest. The furniture in the rooms is made of old wood from packaging crates. Recycled materials have also been used for the décor.

With an initial investment of Rs 5 lakh and a recurring expenditure of Rs 250 per day, a vermicomposting system is used to aerobically compost food waste from the kitchen, with 50-75 kg of waste being recycled every day. They have also undertaken efficient microbial composting where bacterial liquid is added to cow dung and food waste. This requires only 4

months to get converted into compost. These techniques are used to generate compost for the resort's vegetable and herbal farms.

A biogas plant has also been set up to convert food waste from the kitchen into methane gas which is used for cooking. The slurry left behind is diluted with water in 1:20 ratio and sprayed for plants in the vegetable garden.

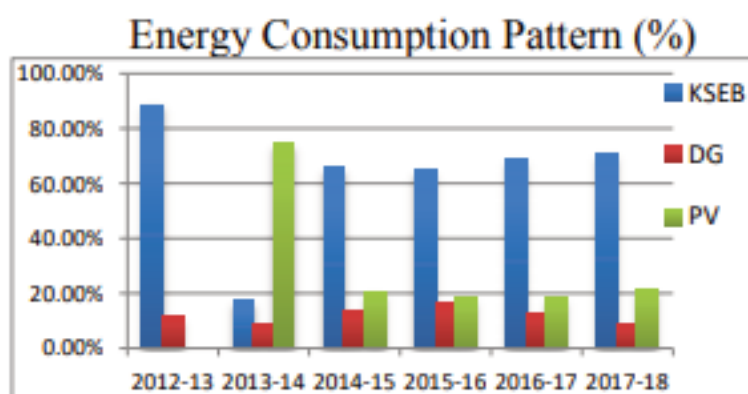
The effluent treatment plant breaks down sewage using aerobic and anaerobic bacteria reactors to recycle 45000 litres of waste water from the ayurvedic centre, kitchen, and washrooms on a daily basis. This water is used for irrigation purposes and for fighting fires.

Various vegetables, fruits, spices, and herbs are cultivated on a large organic farm which is stewarded by skilled local farmers who use traditional methods of crop raising.

All the ingredients required in the resort are procured within a 50 mile radius, thereby reducing the carbon footprint.

The Handmade Paper Making Centre uses old newspapers and magazines to manufacture 200 sheets of A4 sized recycled paper per day. The crown of pineapples is used as a tenacity enhancing agent which increases the binding quality of the handmade paper. The recycled paper is used as in-house guest stationery, invitation letters, notepads, and paper garlands for the guests.

A bottling plant has been set up where purified water is packaged in reusable glass bottles. Brushes and rinsers are used to scrub and clean the bottles. These bottles are then sterilized in a hot air oven. This has allowed them to reduce 45000 plastic bottles annually.



A solar power project was started in 2012 with an investment of Rs 3 crores. 651 silicon panels, set up to harness solar energy, produce 65 KW of power, and this meets 70-75% of the resort's energy requirements. In the initial stages of implementation, it was found that storing the energy in the batteries was both expensive and inefficient. The

solution was to convert to a grid system where the energy generated was sent directly to the KSEB (Kerala State Electricity Board). The resort then obtains its energy requirements from the board, paying for only the excess of consumption over production. In addition to this, a battery stores solar energy and a diesel generator is used for emergency situations.

The harmonious ecosystem that has been created by Spice Village shows their broad commitment towards sustainability and the environment.

Case Study 3 - Single Household

Michael Dominic and his wife Sunita, a couple living in Kochi, show how green is done right. They have adopted a grid based solar system where electricity is transferred directly to the state electricity board. As a result, their electricity bill is very minimal, at around Rs 110 per month. The family also has a rainwater harvesting system which allows them to hold 20000 litres of water in the sump. The third sustainable initiative adopted by them was a processing compost unit. All the biodegradable waste has been transformed into manure, which has resulted in faster organic growth and better produce.

Risks and its Management In the process of achieving sustainable development, there are certain risks involved and we have identified certain measures to mitigate these risks.

Eradication of poverty can be achieved only through sustained efforts focused on providing secure and lasting means of livelihood. One of the most important ways of achieving this is by making vocational training an integral part of school curriculum. The education policy of the central and state governments should make vocational subjects a compulsory sixth subject in order to impart students with employable skills which will empower the financial independence of the learner should s/he choose to exercise after the completion of higher secondary education.

India being an agrarian economy, the agriculture sector has the potential for increasing productivity and generating export surplus. This can be done by imparting education and training at the school level to enable future farmers to adopt modern agricultural practices and thereby enhance productivity. Farmers should also be made aware of the trends in agricultural produce demands in the world market so that production not only caters to domestic needs but is also geared towards the international market. This will result in an increase in agricultural incomes, leading to development of rural areas and thereby reducing the incidence of migration from rural to urban areas, hence mitigating unemployment and overcrowding in urban areas.

With an annual population growth of 1.1%, there is a need to manage this rapidly expanding population through the spread of education and awareness creation with special emphasis on health and family welfare.

There is discrimination against women as a result of social customs and long standing traditions resulting in practices like discrimination in wages, employment opportunities, and lack of participation in economic decision making within the family. This can be managed by a more effective enforcement and monitoring of “Equal pay for equal job”, more employment of women in public works (to be tilted in favour of women in rural areas), and more job opportunities to be provided closer to the home so that household responsibilities are not neglected. The infrastructure created should benefit women (eg. Drinking water, nurseries should be within an accessible range). Greater participation of women in deciding the community assets to be created, greater participation of women in the legislature, and on the Boards of Companies must become the norm and not the exception.

Women have less access to credit because they lack assets to pledge as collateral. This can be managed by expanding micro-credit facilities for women, better implementation in the laws of inheritance to ensure that equal share in property becomes a reality, adult literacy classes for women not only enable them to read and write but also develop skills that make them employable.

Resource conservation methods like conserving water and energy can be arduous and difficult to practice. But it is important to set an example, to educate and spread awareness so as to make resource conservation techniques a way of life. Eg. Using a bucket of water to bathe rather than taking a shower, use of public transport, car-pooling, use of hybrid cars, solar cookers and heaters, walking, cycling, to name a few.

Use of solar and wind power involves high initial cost. Solar panels use tellurium which is a rare element. This can be managed by providing subsidies and tax rebate to households and corporates that use solar power. During the monsoon and winter seasons, the solar energy generated and stored is not sufficient to meet the energy requirements. In order to capture and store more solar energy, a dual axis solar tracker system can be used while mounting the panels which will allow for maximum absorption of sunlight.

Use of hydel power involves the construction of dams. This involves a cost and there can arise conflicts between states/ countries since this will affect the water supply. This can be tackled by joint action and an agreement between the concerned parties. The low level hum of wind turbines is said to cause sleep disturbances, headaches, ear pressure,

irritability, problems with concentration, and memory. These health hazards are collectively called „wind turbine syndrome“. To combat this issue, serrated plastic panels can be mounted on the turning blades, which act as flow control devices and decrease the noise emitted from the blades.

Conclusion

Over the past few years, mankind has developed several innovations and solutions to combat long-term issues of sustainable development. There is a need to effectively implement these to achieve the desired goals. The results of our study indicate that through collective and focused efforts, the goals of sustainable development can be achieved, leading to a better and brighter future.

Additional Reading

https://niti.gov.in/writereaddata/files/new_initiatives/NEP-ID_27.06.2017.pdf

<https://www.pmjdy.gov.in/account>

<https://www.msde.gov.in/assets/images/Mission%20booklet.pdf>

<https://sustainabledevelopment.un.org/content/documents/15836India.pdf>

Brief biographies of the authors

Anirudh P.S is a Grade 12 student of The Choice School has chosen to study Commerce and the allied subjects. Apart from a brilliant academic performance, he is a keen participant of various Inter-school activities and has also shown his mettle in organising inter school cultural activities. He works meticulously, has a deep understanding of the subjects he has chosen to study, good analytical skills and a keen interest in Economics which he intends to pursue.

Manu Muralee also a Grade 12 student of the commerce stream is very versatile and does not let any opportunity to learn go by. He was selected by the school to go on an exchange trip to Pascack School, New York as part of Student Exchange Programme. Although a commerce student, his interest in science remains undiminished.

Ms Padma Mohan is Head of the Economics Dept. with several years of experience teaching students at Higher Secondary Level. A deep love and understanding of the subject Economics has helped her tutor scores of students to excel and even continue to pursue Economics.

Self Audit for Green Profile and Sustainable Development

Anu J. Vengal, Dr. Jaya Jaise

Titus II Teachers College, Mahatma Gandhi University

Abstract

Ecological awareness is today's magic word that quickly invades all dimensions of our lives and our workplace. Lately, our lifestyle, both personally and professionally, began to affect the environment in such an adverse way that we cannot risk letting the effects be uncontrolled. It is better that we change our life habits or face the consequences. For this the first and the most effective method is to bring in sustainable education for all. The concept of green school is on the rise all over the world as an initiative for sustainable development. Building a green school and satisfying all the components of it is a demanding process in terms of money and time. Self audit can fuel the metamorphosis of every school into a green school. It is an essential first step of a green journey to a sustainable way of living. A self audit discovers the gaps in one's green living by accurately tracking the potential untenable practices which may slow down the pace towards sustainability. Self auditing brings in best practices that help to create a green profile for each individual which enhances value added existence. Maintaining a systematic green profile over a period of time should be considered as a component in continuous and comprehensive evaluation (CCE) in education.

Key words: Self audit, Sustainable development, Green living, Green profile, Green school, Best practices, Continuous and Comprehensive Evaluation

Introduction

More and more of us are becoming conscious that our future depends on protecting the health and wellbeing of our people and the planet. In the present world, awareness about the key ideas like sustainability, sustainable living, sustainable development, green practices, and the like are seen even among common people. But the true problem lies where these concepts fail to resonate with everyday life. To do so, we must educate new generations of citizens with the skills to solve the global environmental problems we face.

Glimpses of pertinent readings related to Sustainable Development

Sustainable development and green initiatives have been extensively studied. Many research publications have come out on sustainable development, green technologies and environmental education. But bringing in green environment practices as an operative way to achieve sustainability is yet to be generalised. Green audits are usually done at institutional level to assess the impact that the organisation creates on the environment. The attitude of each individual towards sustainability counts as it can bring in a great change in the overall audit of the institution. Many of the published and unpublished works in environmental education and sustainability provide motivation to focus on green environment practices and green profile.

Environmental, social, and economic challenges that are both local and global are demanding innovative approaches to organizational design, management, and leadership in organizations (Doppelt, 2010) as well as in schools (Kagawa & Selby, 2010). The role of the individual cognitive preferences is of particular relevance. Individuals conduct organizational operations and “the way organizational members perceive environmental issues is crucial” (Etzion, 2007, p. 640). Recently, the environmental movement has seen much success and advancement under a new green paradigm. Despite the rise of national attention to and public interest in the go-green mentality, education still seems to be caught within the old environmental model.

Global Initiatives for Sustainable Development

Many of the challenges faced by humankind, such as climate change, water scarcity, inequality and hunger, need to be discussed and resolved at a global level by encouraging sustainable development. It is a pledge to social progress, environmental balance and economic growth.

As part of a new sustainable development index, the United Nations ratified the 2030 Agenda, which comprises the Sustainable Development Goals, viz. a call to action, to care for the planet and to assure the global well-being of people. These common goals necessitate the active involvement of individuals, businesses, administrations, and countries around the world. The Sustainable Development Goals, also known as the Global Goals, points to the great challenges that humanity faces and affirms that all people should have the same opportunities to live a better life without compromising our planet.

Among the sustainable goals, the fourth one is free, equitable and quality primary and secondary education for all irrespective of region, economic status, caste, creed or gender. The targets set for the fourth sustainable goal are learning outcomes, early childhood

education and effective childhood education. But the progress is difficult to track because 75 percent of countries have no or insufficient data to track progress towards the target of this 4th Sustainable Development Goal (UNICEF, 2018). In the modern world, quality education is definitely one that equips the future citizens to face the challenges, reduce the impacts and analyse the risk

Education for Sustainability (ESD)

In 1992, at the first United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, education was recognized as an essential element for creating awareness and cultivating understanding on the issues prevalent to our earth. Education for Sustainable Development is commonly understood as education that encourages changes in knowledge, skills, values, and attitudes to enable a more sustainable and just society for all. Education for Sustainable Development aims to empower and equip current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development (UNESCO, 2018).

As we try to accomplish the ambitious United Nations Sustainable Development Goals by 2030, the Plan of Action for People, Planet and Prosperity cannot be realised without identifying the important link between educational development and sustainable learning environment. They are inexplicably associated to the ability to transform essential knowledge into conscious action so that students can become catalysts for future evolution. This emphasises the importance of sustainable schools. Students should be provided with an educational programme, physical place, and organizational culture to inspire them to develop as environmentally conscious global citizens. Students spend the majority time of their day in schools during their most vital developmental years. During this period of fundamental growth, schools must provide a space for creative thinking, a source of inspiration, and a starting point for developing a sense of awareness and responsibility.

Education for sustainable development is clearly recognised in the Sustainable Development Goals as part of target 4.7 of the Sustainable Development Goal on education. UNESCO upholds Global Citizenship Education as a complimentary approach. With its inclusive aim to develop sustainability competencies in learners, Education for Sustainable Development is an essential contribution to all efforts to achieve the Sustainable Development Goals. This would enable individuals to contribute to sustainable development by promoting societal, economic and political changes as well as by transforming their own behaviour (UNESCO, 2017).

ESD empowers learners to take knowledgeable decisions and accountable actions for environmental integrity, economic feasibility and an objective society, for present and future generations, while valuing cultural diversity. It is about lifelong learning, and is an essential part of quality education. Education for Sustainable Development is holistic and transformational education which speaks learning content and outcomes, pedagogy and the learning environment. It achieves its purpose by transforming society. The dimensions of ESD are learning content, pedagogy and learning environment, learning outcomes and societal transformations. Self audit for a green profile will bring in all these dimensions in a more operational classroom environment to enrich and strengthen student learning (Global Action Program on ESD, 2014)

Green Profile and Self Audit

The meaning of the word “green” has long outgrown the colour. It is now often used in everyday conversations to highlight everything that benefits the environment. Green refers to the activities that provide a more competent use of resources and reduce the harmful impact on the environment. As the green movement has intervened almost all walks of life, education cannot be left behind. More and more efforts are being invested in bringing consciousness from the early stages of development of a human being to cultivate the culture of conservation and sustainability. This started after the concept of green schools, which originated during the early 90s, just after the Rio earth summit at 1992. The earth summit focused on every area in which the human impacts on the environment.

The World Summit on Sustainable Development in Johannesburg in 2002, catalysed the efforts to bring about a shift in „educating about the environment“ to „educating for sustainability“. This change echoed the international climate of thinking about sustainable development as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland Report, 1987). It was felt that there was an immediate need for everyone to be aware that as we continue to exploit our natural resources in our expedition for development, the future of humanity and our planet is at stake. In view of this impending disastrous situation, there was an urgency to develop a deeper understanding to meet the environmental challenges that we face today. This can be done by enabling the young generation to use the right skills to take necessary action on environmental, economic and social issues which are intervened and cannot be viewed in isolation.

Eco-Schools developed as a response to the needs identified at the United Nations Conference on Environment and Development in 1992. The concept of green school was encouraged by

UNEP and identified as a model initiative for Education for Sustainable Development by accepting the fact that education is the most powerful tool in bringing awareness and consciousness about the present day problems faced by the entire planet. This confirmed that the real essence of a green school can be materialised only when the concept of green environmental practices are brought to the individual level.

A green school is known to comprise those elements and practices that inculcate environmental sensitivity and encourage environmental sustainability through various environment-friendly means that ensure judicious use of resources. It also caters to the physical, mental and emotional needs of a student by guaranteeing a school environment that is physically safe, emotionally secure and psychologically enabling (Henderson & Tilbury, 2004). Building a green school satisfying all its components is a demanding process in terms of money and time. Self audit can fuel the metamorphosis of every school into a green school.

Self Audit means a systematic, objective and documented review of a student on the learning as well as living circumstance/environment that is related to meet the requirements of green profile. A green profile is always a sustainable outline of an individual's choices that maintains and creates an environmental responsibility that is conducive to a learning lifestyle while saving energy, resources and money. Self Audit can be an effective introspective strategy to create a green profile. This is an assessment that allows an individual to explore environmental issues, engage in problem solving and take action to improve the environment and one's own life. As a result, one will develop a deeper understanding of their immediate surroundings and have the skills to make informed and responsible decisions that lead to a green living. In this context, a school environment that encourages best practices for a green living can be considered as a prospective green school.

A green school works on a basic understanding that an individual should meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainability. Self audit done on a daily basis will collect enough information about oneself on a benchmark of universally accepted dimensions of sustainability. The evidences collected over a period of time is analysed and interpreted for a report which can be documented as a part of Continuous and Comprehensive Evaluation at schools. CCE is a process of assessment mandated by the Right to Education Act of India in 2009 that covers all aspects of a student's development (NCERT, 2003). Self audit index can be used as an evaluation tool to assess oneself and to collect information to create a green profile

Sample Index for Self Audit

Sl. No.	Statement	Always	Frequently	Occasionally	Rarely	V. Rarely	Never
1	I like to volunteer in the extension activities carried out by school.						
2	I understand that none of the roles/tasks given in a class is gender specific.						
3	I take part in decision making discussions in class.						
4	I felt satisfied using ink pen for writing notes.						
5	I felt happy while helping my class mates in learning difficult concepts.						

Living environment

Sl. No.	Statement	Always	Frequently	Occasionally	Rarely	V. Rarely	Never
1	I found it interesting in taking part in the harvesting from school garden.						
2	I felt glad that I could avoid junk food						
3	I find time to play with friends.						
4	I spent quality time with my family today.						
5	I drink water even before I feel dehydrated						

My Daily Audit (DATE)

Name of the Student :

Standard/Grade :

School :

Maintaining a Green Profile can be a breakthrough in sustainable education as it forms the first step towards changing a school to a green school. It operationalises the idea of green environmental practices which forms the basis of green learning and green living. Building up a green school that satisfies all the components specified can be a demanding process in terms of money and time, especially in a developing country like India. Self Audit at an individual level for a green profile will gradually transform the living environment of a student in tune with the biosphere as well as evolve the learning environment into a more democratic one that will enhance the constructivist approach in learning.

Conclusion

The entire process of Self Audit and Green Profile focuses on the change in the individual student, which is later extended to the home and the society. The society and home, which are green enough to support the green initiatives of the student, will activate the metamorphosis of any school into a Green School. In turn these efforts will add to the fulfilment of a much larger goal that is Sustainable Development.

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Brief biographies of the authors

Dr. Jaya Jaise

Faculty Professor and Dean of School of Pedagogical Science, Mahatma Gandhi University. She has published over 25 papers in the area of Education. Her main field of interest are educational research, technology, administration and innovation.

Anu J. Vengal

Assistant Professor of Natural Science Education. She has published over 20 papers in the area of Education. Her area of interests includes Sustainable Education and Innovation.

Small Fishery, Experiential Learning and Sustainable Tourism

Andrea Tarantino

Italy

Abstract

Salento is a small strip of land between two seas in the South of the Italian peninsula: a land that has always lived on very small enterprises, most often, family-run businesses. This tongue of land does not have major infrastructure or communication networks or relevant facilities and does not inherit a long history and professionalism in the tourism field but its inhabitants know the dynamics of hospitality (being between West and East, Africa and Europe) and also know how to harvest and sail from ancient times. It is here that fishery, and especially small scale fishery, better defined as traditional fishery, which regards the vast majority of the fleet in Salento, can become a strong tourist attraction (when intentionally rethought and planned) with a historical-cultural and naturalistic dimension. It can also become touristic and experiential, in the framework of effective sustainability. Fisheries have diverse connotations and experiential stimuli: knowledge of local fish, cleaning, preparation, conservation... finally involving everyday family actions and use. In this cultural and social universe bottom-up tourism can be developed, generating experiential learning combined with respect for the people, nature, traditions: sustainable and rephrase.

Keywords: experience, sustainability, experiential tourism, traditional fishery, cooking

Experiential learning

In the past few years Salento has seen a touristic upsurge and growth never seen before, thanks to the great hospitality and instinctive ability to identify the new tourist's needs. Travelers show the need to experience something new, different from standardization pressures (Bodei, 1991; Jedlowski, 2002). Tourists are looking more and more for conditions that can generate experiences and sequences of experiential learning, thus first hand, immersive, authentic days that are also unrepeatable.

Therefore, there is the request of new stimuli and new emotions, paying attention not only to objects or consumerist trends but to relationships, the environments where we live, to situations where emotions and discoveries are linked to sensations and surprises germinating researches, moments of reflection and new forms of socialization.

We can call it experiential tourism, the result of special experiential learning sequences that break stereotypes and nourish the person's resources, thus creating occasions of growth and emancipation: this involves the people in their totality, immersing them in the context and putting them in contact with the environment, stimulating all senses and stimulating them at emotional, cognitive, psychological, physical and social levels. Knowing a place means knowing how to live everyday "passages", immersing oneself, even if for a short period of time, in the people's traditions and customs; knowing *how* and of *what* they have lived and where they come from, listening to the stories, finding out places, tastes, cooking techniques, anxieties, joys, lifestyles.

In other words, we try or we want to *ex-perire*: to start a journey through natives' customs that appears to be like a journey throughout people's history, traditions and culture. The tourist is not merely a spectator or observer of a diverse culture anymore, (Urry, 1990), because he becomes an active subject, co-actor of an experience that won't be repeated in any other part of the world: a tourist that, coping with differences, with peculiarities and distinctive aspects of a land and respecting them, thinks and comes out with questions, gets to know and explores, meets up with other people and finds a new side of himself, starting from the bottom, (Simonicca, 1997), without presumption and arrogance.

Related work

It is just a trend, not consolidated or a wide spread praxis: it is something foreseen that waits to be understood, interpreted and valorized.

Our project idea starts from here and pinpoints a specific problem because it shows as possible the effort of joining an antique need – the lack of job that causes social precarity and existential insecurity- and new opportunities that are generated by political choices - including at the European level, such as PCP program (Politica Comune della Pesca: Common Fishery Policy), issued by the European Union.

Decisions issued by Europe are aimed at the protection of the marine environment, to the sustainable management of all commercially exploited species and, in particular, to a good ecological state within 2020, as per art. 1, par. 1 of the 2008/56/CE guideline of the European Parliament and Commission.

For this purpose, the PCP protocol aims to reduce the impact of fisheries on the marine environment, safeguarding fish stock for future generations, granting a sustainable fishery from the ecological, economical and social point of view, although it should also grant a source of healthy foods for the Union citizens.

Fishermen communities and the people working in the satellite activities have at their disposal many diverse tools, economical and legislative subsidies, benefits from the professional reconversion into activities alternative to fishery in a strict sense; support to

activities collateral to fishery in order to implement satellite activities, such as fishing tourism and recreational fishing.

Moreover, fishing zones and techniques employed are Slow Food presidia. These latter techniques support small traditional production that are at risk of disappearing. They value the land, saving ancient jobs and working processes and also saving local resources from extinction including some varieties of vegetables and fruit.

In particular, the fishing zone we refer to includes the part of the sea between Torre Pali e Torre Mozza, extending almost 3 miles away from the coast. Here the sea floors are not deep and they have shallows, going from 5 meters to 70 cm of depth, where we find the famous shallows of Ugento. Fishery is performed by artisanal fishermen that know the insidious sea floors very well, from centuries, and have been the heirs of a long tradition in the fishing art. These traditions have been, historically performed with techniques respectful of the sea and of the biological cycles of its species, and fish varies depending on the season. For each and every species a special net is used, with meshes of diverse dimensions so as to grant a high selectivity and therefore fishing sustainability.

Model (performance)

The behavioral program that we have planned on specific theoretical processes (A. Tarantino, 2018), has its context in this sea strip and in the new tourist's sensitiveness and parameters from which duties and action points are defined, to be developed using experiential learning suggestions and analysis (A. Tarantino, 2018; L Fabbri and A Romano, 2017) and the transformative learning theories (J. Mezirow, 2003).

From these analyses we get a special methodological instrument, the "journey", which involves small groups of tourists, usually 8/10 people; a journey that we use to name in a complex and evocative way that changes with the season, the type of group and of the suggestions, always respecting a procedure that remains solid and stable and that we hereby briefly describe.

Once on the field, the experiential path is structured as described below:

1. Familiarization with the fishermen and the context
2. Sailing to the sea Departure at 02:00AM;
 - ☐ The group with the fishermen casts the nets. The fishing technique displayed here is called *drift net fishing*, sustainable and not invasive;
 - ☐ We wait in the sea for a couple of hours, time that fishermen use to get to know better the group, socialize and tell stories regarding the sea and their lives;
 - ☐ At sunrise nets are removed and rearranged and the fish set free;
 - ☐ On its way back the group, with the fishermen's support, peels and eviscerates the fish which, in a short time, will also be cooked;

□Return at 11:00;

3. Depending on the fish caught, the group will cook the meal and eat together; the menu will change accordingly to the unpredicted results of the adventure in open sea. Local wine will be served and traditional salentinian music will help in socializing.

4. Part of the fish will be taken to the restaurants run by the fishermen's wives that will prepare dinner following traditional cuisine. This will be a real tasting experience because unusual parts of the fish will be eaten that are not sold on the market, foods that only fishermen would typically eat.

5. Dinner will be accompanied by a detailed description of the dishes directly by the fishermen's voices: fish will be described, their characteristics, the fishing floors, techniques, the cooking methods, etc.; then anecdotes on fishermen's traditional cuisine and its evolution; there will also be stories on the fishermen and the sea and new plans for the trip of the following day.

The procedure is surely important but, by itself, does not give an answer to the meaning and the soul of the experience. It is a journey (usually at least five days) and therefore a path full of important learning occasions: learning sequences that help thinking, acquiring meanings that recall values. This gives the qualitative measure of the experience and produces deep and meaningful change.

Briefly, the practitioners accompanying the group throughout the *journey* show their abilities and involve travelers so they can do the same. It is not about selling/buying more or less made-up dishes but about learning how to fish and treat the fish so as to learn how to taste, select, and benefit from everything fishing can offer. It is about learning by doing, exploring the culture in its constitutive elements, to face situations, events, the differences among the group, so as to create a team with the right taste for collaborative action.

Implementation

While undertaking this journey few critical moments are foreseen by the involved actors. Sometimes the situation leads to eradicate behavioral habits ; we have to cope with ways of living different from those of the everyday life, and even self-perception is silently questioned in relation to the environment. Often a cognitive and emotional disorientation takes place and requires immediate adaptive changes so to adapt the behavior to a completely different context.

This allows facing problems and difficulties identified in the inception phase while performing the activities and to which it is necessary to promptly and effectively answer at least in order to smoothly proceed with the complex experience of the journey.

Each and every experience represents a moment for reflecting so to improve the next experiences, always with bottom-up logic of improvement.

Results

The results that we have obtained after few years of work are in different directions, symptom of how the project is just the beginning of a process that will involve diverse sectors, skills, sensitivities that aim at the sustainability of the processes.

In detail.

1. In the project implementation, diverse abilities have been involved, not included in the specific field, such as those of interpreters, drivers, tourist guides, advertisers, enologists, musicians....
2. A restaurant has been set up that processes the products of the fishery with respect for the cooking tradition of the salentinian fisherman. Moreover, this restaurant helps to revitalize customs and traditions under the big threat of globalization, avoiding a “taste oblivion” and employing more than twenty families, at the moment;
3. *Apprendimento esperienziale e padronanza di sè* (Experiential learning and self-control) (Tarantino, 2018) is a monographic study that has been published targeting university students where the above described model, planned with pedagogical intentionality, forms not only a macro-metaphor for the experiential learning but also a real learning set to work for training groups and also at an individual level in terms of behavioral improvement. This model has been verified and approved by the University of Salento and implemented by a university Spin-off. Moreover, all this has improved researches and study of pedagogists, sociologists, psychologists and other collaborators.
4. Inadvertently and transversally, while living the experience, we are put in contact with all the respectful behaviors concerning nature and those, indirectly, have an impact on the involved people and represent a moment of awareness-raising and reflection with important educational achievements in favor of social and personal emancipation.

Conclusions

With no need to completely change what already exists, i.e. the nature and its inhabitants but, on the contrary, rediscovering and re-evaluating the habitat and traditional culture, we have started a bottom-up process, sustainable, easily replicable, at least in its inner logic, in all seaside touristic zones.

Offering touristic experiences harmonized with nature and its inhabitants means listening to what it can offer in its peculiarity and exclusivity, considering these activities that strengthen a world ruined by globalization and homologation. Respecting, safeguarding and

taking care of what surrounds us are the first steps towards open-mindedness and hospitality of the far-away “Other”.

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Logistics and Sustainability: A Comparative Analysis of a Global Logistics Corporation and a Global Tractor Producer

Manuel Arzente, Abey Kuruvilla and Mariacarmela Passarelli

University of Calabria, University of Wisconsin- Parkside, University of Calabria

Abstract

According to a United Nations Department of Economic and Social Affairs report (2018), around 55% of the world's population live in urban areas, a percentage that is projected to reach 68% by 2050, causing congestion and pollution. This problem has been aggravated by the rapid growth of e-commerce, with an increasing demand for goods, and services related to them. Transportation and the need for systems capable of optimizing and more efficient management is therefore, fundamental. The literature suggests that the concepts of sustainable and livable cities can be supported by the collaboration of logistics companies. We develop a qualitative explorative analysis, with the aim of identifying the main factors in logistics that can help the creation of a sustainable and efficient urban transport systems. Results of a questionnaire addressed to senior leadership of a global logistics corporation and a manufacturer of trucks are also reported.

Keywords: urban freight transport; environment; sustainability, innovations, joint delivery system

Introduction

According to an Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2017 (EPA, 2019) the emissions produced by the urban distribution of goods account for about 28% of the greenhouse gases produced by human activity. Most of the goods that arrive in large port hubs by ship are subsequently shipped to urban centers by road which involve congestion, air pollution and noise. The protagonists of this pollution can therefore be identified in two categories: heavy and light commercial vehicles. However, logistics activities are a fundamental part of every country's trade, so it is necessary to find sustainable solutions. According to Sanders (2012), "Sustainability can be defined as meeting present needs without compromising the ability of future generations to meet their own needs". Today environmental sustainability is a significant area of focus for a range of stakeholders in the industry (shippers, freight carriers, residents, administrators) which is becoming one of the main drivers in the field of innovation. It has therefore become essential to examine logistics, which, if oriented to the

resolution of environmental problems, is a strategic key to development and innovation. Sustainable logistics has the main objective of achieving significant results in environmental sustainability and cost containment. Given the greater attention of the community and of legislators, the larger corporations have begun to evaluate environmental sustainability not as a barrier, but rather as a real opportunity for growth and therefore the future key for development and competition between various economic systems. They have already started environmental sustainability programs, having understood that eco-compatible production activities that entail economic and image advantages. Both production and logistic companies now demonstrate ever greater attention to environmental protection and quality of life. (Evangelista et al, 2018)

In this regard, this paper identifies some aspects of sustainable logistics through the experience of two big companies.

Literature review

Russo, et. al. (2016) recognize that the rapid growth of urban freight transportation and supply chain activities have contributed to a threat to the environment and economy (i.e. air pollution, congestion, etc.) resulting in increased logistic costs and prices of the products. In order for companies to implement a sustainability strategy in their supply chain operations, the logistics function must play a key role. According to Al-Odeh and Smallwood (2012), "*Sustainable transportation is another important element in developing effective sustainable supply chain management. Many factors including fuel sources, type of transport, infrastructure, and operational and management practices should be considered in developing environmentally-friendly transportation systems*" It is important to configure sustainable logistics in the environment that proposes solutions for transport, delivery and recycling of goods and products, in accordance with respect for the environment, with the aim of achieving a long supply chain that includes the environmental compatibility and mobility problems, for a more complete and effective value chain. This ambitious goal can be reached through radical change that goes from the transport of materials and finished products, to the recycling of packaging; from emissions of harmful substances due to production, to the possibility of producing goods that are proactively designed with recycling in mind.

In the sustainable logistics field, the concept of city logistics can be useful (Dolati et al., 2019). Taniguchi et al. (2001) defined city logistics as "*the process for totally optimizing the logistics and transport activities by private companies with support of advanced information systems in urban areas considering the traffic environment, traffic congestion, traffic safety and energy savings within the framework of a market economy.*" A recent literature review on city logistics (Dolati et al., 2019) gives a clear definition that: "... not only comprises urban freight

transportation and distribution, but also encompasses the goods handling and storage, waste and return management and home delivery services". It highlights the impact of three main important factors of city logistics on sustainable development. The first defines environmental responsibility. The second concerns the role of networking and the third is related to advanced technologies applications in the city logistics system (technologies such as autonomous electric vehicles, ground drones, replicators or additive manufacturing and crowd logistics (Haas and Friedrich 2017; Rai et al. 2017).

In alignment with the factors identified above, we present multiple case studies.

Empirical qualitative analysis - A multiple case study

The empirical analysis proposes a multiple case study on CNH Industrial and Fedex. Both provide opportunities for insight.

The qualitative analysis was developed by collecting secondary data from reports and from the firms' web site. Moreover, to delve deeper, interviews were conducted with Alberto Mela, responsible for air and sea transport contracts and the management of carriers, transport logistics of CNH, Prasannalyer, Director of Supply Chain & Logistics of CNH Industrial in Racine (Wisconsin) and with John Mahar, Fedex Global Accounts Manager (between October and December 2019). The study provides an overview of three main factors to increase sustainable development in the perspective of city logistics: environmental responsibility, networking and advanced technologies.

Environmental responsibility

CNH Industrial is a global leader in capital goods that implements design, manufacturing, distribution, commercial and financial activities in international markets. They employ more than 64,000 people, own 66 production facilities and 54 research and development centers in 180 countries. Thanks to its global presence we can say that CNH is a company among the leaders in the reference sectors. They own several brands, through which they produce the vehicles that make agriculture and industry grow. From tractors and combines to trucks and buses, as well as propulsion solutions for road and off-road and maritime vehicles, they design, produce and sell machines for work.

CNH Industrial is a company that is committed to operating in an environmentally and socially responsible manner, promoting its global growth and profitability while maintaining a high level of sustainability and offering even greater long-term value to all its stakeholders. In the last year it has been able **to reduce emissions** in the logistics sector from 300 tons of Co2 to 250. To do this the company uses different ways to optimize transport.

The first method that offers a significant reduction in CO2 emissions was to move from truck to rail. This method is particularly useful for northern Europe. Shipments to northern Europe can be a challenge. Given that the roads can be congested, driving rules are increasing and transport capacity is lacking, CNH Industrial's transport logistics team devised a sustainable business solution: **the introduction of an intermodal transport route**. The new intermodal service will be much faster than road transport and will achieve a more stable flow of finished products with lesser bottlenecks.

Fedex, is a transport company specializing in express shipments with overnight mail and parcel services, in land transport, air transport and logistics services, having a network covering over 220 countries. Fedex has its own approach to sustainability, which can be summarized in 3 words and is applied in all fields of the corporate context: *Reduce, replace, revolutionize*. Reduction: minimize or eliminate impact from activities and operations. Replace: apply the right solutions in the right applications. Revolutionize: discover and use cutting-edge technologies and solutions. According to the Global Citizenship Report of Fedex 2019, collectively, these efforts have contributed to an approximately 37 percent reduction in CO2 emission intensity (based on revenue) across the company in 10 years, a time when revenue grew by 84.5 percent. With regard to intermodal rail transport, the FedEx Freight company states in its sustainability report that the use of intermodal rail transport is 70 percent more efficient than road transport, and has saved 25,000,000 gallons of fuel and avoided about 300,000 tons of CO2 emissions. This reflects a 10 percent increase in rail miles for FedEx Freight intermodal shipping during fiscal year, and 18 over the previous year. This resulted in an 11 percent increase in diesel fuel savings due to the increased use of intermodal railways to offset the impact of maintaining some older vehicles and improve overall FedEx Freight emission reductions during the fiscal year 18.

Networking

According to Alberto Mela (Responsible for Air and Sea transport contracts and the management of carriers, transport logistics in CNH Industrial), a fundamental step for the implementation of the project was to **find a partner** who was interested in transporting vehicles in the opposite direction, so that the trains do not return empty. This is where the concept of joint delivery becomes fundamental. The team found two long-term CNH industrial partners that together formed a new company. CNH Industrial partners also invested in the **terminal infrastructure**. This created a completely intermodal element to develop all the points of contact where the different forms of transport meet and the products can be transferred using customized equipment, which are highly efficient and sustainable. The only

disadvantages that this solution presents is that this would increase the transport times, but as Prasanna states it was an easy sale, “ *it is because when we ship our trucks during the winter, when you put them on open trucks, they are exposed to rust due to salt on the road, rust increases the ruin of the machines. When we put them on the train there is no exposure to rust in the trains, so this is a triple advantage in terms of costs because trains are cheaper than trucks, they increase in quality and reduce CO2.*”

Since firms have always been reactive, the electronic logging devices on trucks, the availability of information has enormously increased. In the last months they are trying to look at the forecasts and their suppliers for the next 3 months, attempting to convert data into information to drive the best way and the best network that would optimize shipment. This should help reduce shipping miles with a consequent reduction in emissions and fuel costs. Prasanna adds that an approach for the future, which will be quite challenging, is how to collaborate with the carrier network to reduce the empty mile.

Advanced Technologies

Looking at the truck industry, 40-50% of the miles traveled by couriers are empty miles that go to the collection point. There are companies that are trying to connect to those logging devices to provide real-time visibility. Introduction of **big data** will be important as key enabling technologies for firms. As Prayanna says, “ *When I talk to my large carriers, it looks like they're moving from a trucks company to a digital plant, usually you don't hear it from the trucks company and for big companies it seems to be their strategy. So, if you can cooperate to exploit the nearest truck in order to reduce empty miles, it may be the solution but this will be a more challenging problem due to data privacy*”

Fedex recognizes the problem of congestion in the city as the number of vehicles in the cities continues to exceed the infrastructure, and this raises concerns for them because it affects their efficiency and increases the costs associated with running the business. Fedex is attempting to find last-mile delivery solutions by assessing the potential of **artificial intelligence** in connecting vehicles to infrastructure as traffic lights, which could help optimize routes, helping to minimize the number of larger vans and trucks in congested cities.

Concerning the parcel locker, according to Fedex, the benefits they present are lower than the costs they present. They state that the costs in Locker technology are prohibitive for the moment. Thus, they are more oriented to use partners as access points. This strategy is also due to the growth of e-commerce, so they increased their retail network in collaboration with retailers like Walgreens and Walmart in the US and 7-Eleven in Asia. The benefits of this network are different, because usually these retailers occupy a key position in the cities, which simplifies the collection and shipment of packages by customers, but also helps to prevent

theft of packages, optimizes the delivery capacity of the last mile and improves environmental efficiency and last but not least the possibility of simplifying the procedures for sending the returns reducing the environmental impacts of logistics to a minimum.

Conclusion

Given the greater attention that consumers place on sustainability, it becomes a significant factors for success in today's market. The case studies have been aware of this for years, improving their performance relative to emissions. It is also interesting to see how companies that have been able to innovate their processes and have a sustainable supply chain, also present better economic results (Rao & Holt, 2005). From the analysis of these two big companies, even if conceptually they operate in different fields, what can be highlighted is that both make sustainability a strength of their activity, implementing different practices to achieve the same goal according to the company. The answers received are consistent with the related work, which enhance the theory with its own economic and environmental impact results. The results show examples of good business practices, which can offer growth opportunities for profitability and corporate reputation. For long journeys, both companies claim that the intermodal system turns out to be a winning solution, and collaboration and cooperation can reduce empty miles by having strong advantages. The answers also converge on the introduction of advanced technologies and the increased use of data as the winning key for sustainable logistics and for a competitive advantage in relation to its competitors in the reference market.

Some practical implications emerge: first of all, in the perspective of city logistic, to boost sustainability, firms are encouraged to create more collaboration between private firms and public administration, to encourage joint delivery, to use stores as delivery points, to increase the use of electric vehicle and alternative combustion vehicle, to optimize product and waste logistics (reverse logistics), to think of logistic costs savings in the same way that energy saving is intended. Regarding the long-term future, the key solutions seem to be in the direction of reducing road transport and efficiency. Environmental sustainability then means creating operational infrastructures and designing efficient and sustainable transport management, by encouraging inter-modality, increasing transport efficiency, avoiding empty vehicle returns, optimizing routes and intelligently locating warehouses and suppliers.

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Brief biographies of the authors

Manuel Arzente

Master's Student in Economics and Business, University of Calabria

AbeyKuruville

Dr Kuruville is an Associate Professor in Operations Management at the University of Wisconsin Parkside. He also serves as Executive Director for International Affairs. He works closely with his students on applying class principles with industry partners and both CNH and Fedex are partners in those endeavors.

MariacarmelaPassarelli

She is a Faculty Professor of Management at University of Calabria (Italy). Her main fields of interest include Supply chain management, Innovation and technology transfer.

Connecting Human Resources and Sustainability

Bryanna Thomas

University of Wisconsin – Parkside

Abstract

The topic of how Human Resources and sustainability are connected to positively impact the world are discussed in this paper. Businesses align their strategies with sustainability issues to address environmental degradation, and to be accountable for the part they play. The basis of this study focuses on the behaviors businesses demonstrate to benefit their organization and the environment.

Keywords: Human Resources, sustainability, green HRM, University of Wisconsin-Parkside

Introduction

Corporations and organizations are inadvertently the cause of numerous environmental issues that we face. Overtime, organizations have begun to practice Green Human Resource Management to help reduce the damage being afflicted on the environment. Green HRM is defined as the set of policies, practices, and systems that stimulate a green behavior of a company's employees in order to create an environmentally sensitive, resource efficient and socially responsible workplace and overall organization.

Human Resources deals with hiring, recruiting, training and development, rewards and incentives, and compensation. The relationship between human resource management and green initiatives intersect to create positive societal, environmental, and business impact.

After observing the new environmentally friendly products posted around my school cafeteria, I was able to conduct a short interview about the green HRM methods that Dining Services at University of Wisconsin-Parkside were using. The objectives of this paper are to create a better understanding of green HRM and establish the link between sustainability and human resource business practices and discuss the findings of research with University of Wisconsin-Parkside Dining Services.

Literature Review

Green Human Resource Management

Green Human Resource Management (Green HRM) is a paradigm shift towards sustainability. Although this concept has been around since the late 1900's, it is still an emerging topic with growing research. The first edition of a book titled Greening People:

Human Resources and Environmental Management was first published in 1996 edited by Walter Wehrmeyer. Green HRM is defined as the use of HRM policies to promote sustainable use of resources within business organizations. These policies assist in transforming normal employees of an organization into green employees while benefiting the business, society, and the natural environment.

The importance of green HRM lies between the issues of global warming, pollution, overuse of natural resources, deforestation, destruction of natural habitats, health concerns of people, and the natural disaster minimization. With awareness of these environmental issues steadily increasing, there has been growing interest in environmental management and its potential benefits. In terms of Human Resources, policies in recruitment, compensation, training and development, employee rewards and incentives are what connect HR and sustainability and allow for alignment of a company's environmental strategy (Opatha, Henarath & Anton Arulrajah, Anthonypillai (2014).

Green Recruitment

Green recruitment refers to the procedure of hiring people having behavior, knowledge and skills of environment management systems in the organization (Obaid, Tareq. (2015). According to Wehrmeyer, the process of recruitment can assist firms in producing effective performance including performance related to the environment by ensuring that newly hired staff is aware of the environmental culture of the organization and he/she can maintain the environmental values followed by the organization (Obaid, Tareq. (2015). When recruiting and hiring new people, organizations look for people who are not only skilled, but they must fit company culture. Culture fit is the glue that holds an organization together, and the result of poor culture fit due to turnover can cost an organization between 50-60% of the person's annual salary (Bouton, 2015). Therefore, recruiting employees who have a sense of environmental value have been found to actively enhance their environmental knowledge, which in turn enhances the environmental performance of their firms (Saeed et al 2019). Firms should therefore attract and select candidates with green awareness using a series of tests, to ensure that all employees are positive about environmental issues. From a job seekers perspective, seekers tend to take information about an organization's environmental performance and description as criteria to judge how organizations treat their employees. Job seekers can also be attracted to organizations with positive green signals (Saeed, et al 2019).

Green Compensation

In human resources, compensation, rewards and incentives are a vital component to organizational effectiveness and encouragement of employees. Although it may be difficult to incorporate and monitor monetary rewards into the compensation packages for green practices, a combination of monetary and nonmonetary rewards have been shown to be more effective for employee engagement. For example, nonfinancial rewards should be offered alongside financial incentives, in the form of green travel benefits, green tax benefits, and green recognition (Saeed, et al 2019). Employee compensation programs can be modified to give bonuses based in part on the employee's appraisal ratings on the behavioral and technical competencies ("Green HRM – Human Resource Management Institute", 2019). When an organization introduces rewards for innovative environmental initiative/performance, employees become motivated to engage in and contribute to green activities (Renwick et al., 2013). Recognition and rewards for the organization are abundant as well. Green recognition and certifications are a rewarding factor that in turn allow for financial gains because investors can ethically support organizations who share their environmental sustainability values. Some of the most known Green Business Certifications are *Green America*, *Green Business Bureau*, *Fair Trade USA Certified*, *Green seal* and more. These certification programs certify organizations that use business as a tool for positive social change, adopt sustainability vision statements, and take corporate social responsibility. Green recognition rewards lead to feelings of pride among colleagues and good company reputation, which is reward for clients, customers and employees.

Green Training and Development

In order to perform effectively in an organization, training and development is there to help equip employees with necessary skills and knowledge to perform tasks, goals, and objectives. Allowing training and development to take place regarding green HRM is a way to establish better ethics, attitudes, awareness, and behaviors amongst employees regarding environmental health. Having employees engage in things such as workshops or e-learning showing the importance of environmental sustainability and how their company orchestrates their goals around those objectives brings change. Newly acquired knowledge and understanding of the importance of why a company engages in environmentally friendly practices leads to better performance. The skill development and the exploratory learning are the potential means of encouraging innovations in the organization, and training and development can be used for innovation and enhancement of performance and competitiveness of the organization as a whole (Obaid, Tareq. (2015).

Findings

After observing several ecofriendly signs posted around my university, University of Wisconsin- Parkside (UWP), I decided to reach out to several college officials and find out more information about the environmentally friendly practices that they partake in. One particular area that stood out was the UWP Dining Services. A brief interview with the Executive Chef, Jeff Willis, and Food Service Director, John Nicholds, allowed me to gain insightful knowledge about the practices being conducted inside my college. One major goal for the UWP Dining Services is to reduce their carbon footprint. They are involved with the seafood project which involves only using sustainable seafood. For example, only line-caught tuna is used in the making of any foods to help reduce the use of net catching and over fishing of sea life. Greenware is now used in cafeteria. Greenware is biodegradable, compostable, and recyclable, further reducing the use of plastic containers, forks, spoons, knives, lids and straws. Employees who work for UWP Dining Services are required to properly sort biodegradable ware for proper disposal. Without proper disposal of biodegradable products, they will never truly degrade and be reused. Scales are also used to measure waste produced. This gives UWP Dining Services usable data to determine more or less food production. Aligning the standard of operations for UWP Dining services allows for them to meet their strategic goals of reducing carbon footprint and providing excellent service to the students at the university shows how these HR strategies that implemented fall in line with each other. Employees working with Dining Services now have better engagement and understanding of the importance of sustainability and these practices are being transported to students all over campus. Employees are engaged, the environment is being saved, and their mission is being carried out.

Conclusion

In response to connecting HR to sustainability, there are increasing numbers of researchers that are suggesting that organizations should assume green HRM practices to efficiently and implement organizational green policies. Although there is still ongoing research that needs to be conducted on this topic, the subsequent objective of green HRM is to enhance the sustainable environmental performance of organizations. HR officials play a vital role in supporting sustainability. It is the role of HR to facilitate and ensure that the organization's business strategy is based on a sustainable approach to managing its employees, and investments should be made in the education of green HRM, since it is, they who are responsible for implementing the projects.

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HAB and Lake Management under Climate Change Conditions in an Applied Study on Lake Utah Data Sets and HAB Prediction

Sander, H., Skalbeck, J. and Kügow, F.

*Ostfalia University of applied Sciences,
University of Wisconsin- Parkside*

Abstract:

This applied study is offering options on environmental management measures and predictions of lake development for Lake Utah, discussed under the emerging impacts of climate change. The study is based on different data sets by various sources, acquired via automated Lake buoy measurements May - November 2017 (Utah DWQ HAB Network Utah Division of Water Quality), US climate data and measurements of Phosphate in lake sediments (Brigham Young University 2015). Shortterm and Longterm lake management options are discussed as well as future development and prediction of harmful algal blooms (HAB).

Keywords: climate, lake development, harmful algal blooms

Introduction

Lake Utah is a shallow freshwater lake of 39 km length and 21 km width with covering an area of about 380 km² with a mean depth of 3.2 m, lake volume 870.000 acre feet (1.07×10⁹ m³) (Jackson and Stevens, 1981). The climate around the lake corresponds to desert climate and is classified as semiarid. 60% of the inflow comes from two rivers, namely Provo River (36%) and Spanish Fork River (24%). Other tributaries include the American Fork River, Current Creek, Dry Creek, Hobble Creek and Mill Race Creek. In addition, a variety of smaller tributaries and hot springs lead into the lake. The only outflow from the lake is the Jordan River (Utah DEQ: Utah Division of Water Quality 2009, PSOMAS). The inflow amounts to a total of about 0.754 km³/a, the outflow about 0.750 km³/a with a mean retention time of about 1.5 years. About 42% of water losses are caused by evaporation leaving the lake slightly salty with 31-190 mg/l Na and 32-273 mg/l Cl, depending on season, water level, and measurement site (Fuhrman, D.K., Merritt, L.B., Woodruff Miller, A. and Stock, H.S., 2017).

Annual phosphorus accumulation is estimated to be 214.1 t/a, based on the annual input (297.6 t/a) and and output (83.5 t/a) values (PSOMAS, 2009). Total phosphorus is a nutrient contributing to plant and algal growth in aquatic systems. Elevated total phosphorus

levels enhance algal development along with low dissolved oxygen, elevated pH, and potentially cyanotoxin production by cyanobacteria. Consequently, harmful algal blooms (HAB) in Lake

Utah can occur mostly during the late summer and fall and have been observed in the 1970th (Palmer, 1962; Strong, 1974; Whiting, Brotherson and Rushforth, 1978) and even 1930 (Tanner, 1930; Snow, 1932). Four algal species have been identified so far as responsible for HAB (*Aphanizomon flos-aque*, *Anabaena spiroides* var. *Crassa*, *Ceratium hirundinella*, *Melosira ganulata* var. *Crassa*; PSOMAS, 2009; Whiting, Brotherson and Rushforth, 1978). Studies indicate that HAB are checked by natural turbidity in the lake resulting from mineral precipitation rather than nutrient availability (Merritt and Miller 2016).

Buoy Location and Parameter Sets

In 2017 3 buoys were installed automatically measuring lake water quality parameters at lake surface continuously starting at the beginning of May to December in 15 min. increments, while no parameter measurements from various other depths were taken. Lake Utah Buoy Locations were: One buoy 2 miles W of Vineyard, another buoy 1 mile E of Bird Island and the third buoy 1 mile W of Provo Marina (Fig. 1).

Buoys were measuring water temperature ($^{\circ}\text{C}$), turbidity (NTU), conductivity ($\mu\text{S}/\text{cm}$), oxygen saturation (%) and pH as general parameters and Chlorophyll a (RFU, $\mu\text{g}/\text{L}$) and BGA Phycocyanin (RFU, $\mu\text{g}/\text{L}$) as parameters of algal development and cyanobacterial occurrence.

In addition, Total Phosphorus (TP) content in sediments near the buoy sites were derived from another Study (Merrel, 2015).

Daily air temperature (as min and max temp., $^{\circ}\text{C}$) and precipitation data (mm/d) were derived from US Climate Data for Provo 2017 and moreover back until 1948 for Salt Lake City (SLC).

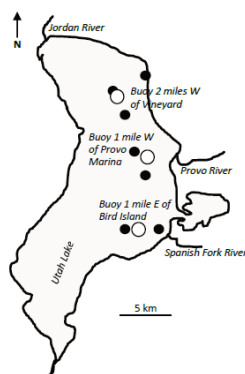


Fig. 1 Schematic Diagram of Lake Utah Buoy Locations (white circles), Total Phosphorus sampling sites (black dots), inflow (Provo River and Spanish Fork River) and outflow (Jordan River)

Air and Water Temperature

Daily air temperatures (Provo weather station, Utah County, Local Climatological Data Set from NOAA National Centers for Environmental Information, formerly National Climatic Data Center) as well as precipitation events and Relative Humidity data (daily mean) from May to Dec 2017 are shown in Fig 2a and b. Fig 3 a - c displays water surface temperatures from the three measurement sites. Note, that water surface temperatures follow air temperature conditions fairly closely. Water temperature data of the three buoy sites behave uniformly independent from measurement station within the lake.

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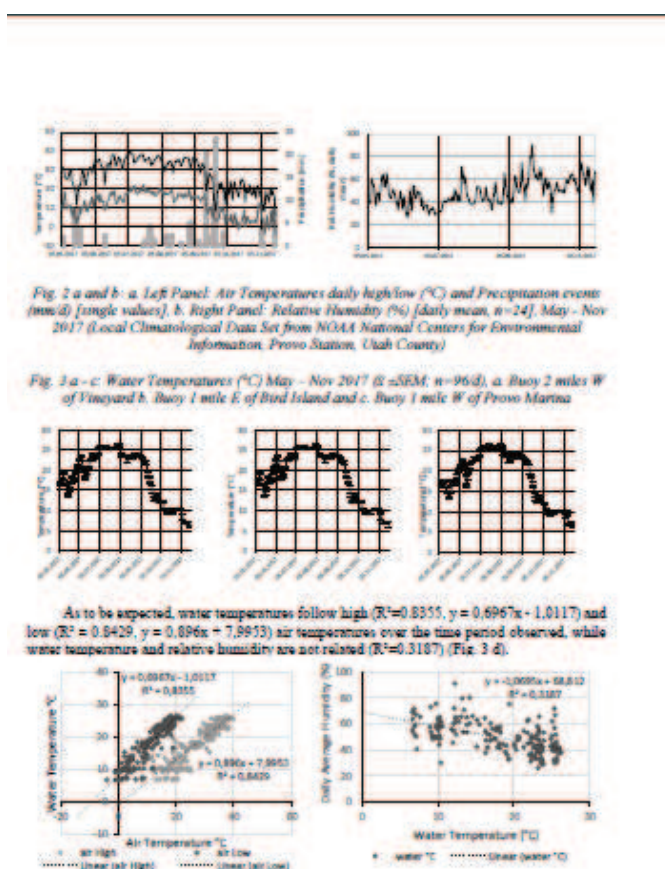


Fig. 2 a and b: a. Left Panel: Air Temperatures daily high/low (°C) and Precipitation events (mm/d) [single values], b. Right Panel: Relative Humidity (%) [daily mean, n=24], May - Nov 2017 (Local Climatological Data Set from NOAA National Centers for Environmental Information, Provo Station, Utah County)

Fig. 3 a - c: Water Temperatures (°C) May – Nov 2017 ($x \pm SEM$; n=96/d), a. Buoy 2 miles W of Vineyard b. Buoy 1 mile E of Bird Island and c. Buoy 1 mile W of Provo Marina

As to be expected, water temperatures follow high ($R^2=0.8355$, $y = 0,6967x - 1,0117$) and low ($R^2 = 0.8429$, $y = 0,896x + 7,9953$) air temperatures over the time period observed, while water temperature and relative humidity are not related ($R^2=0.3187$) (Fig. 3 d).

Fig. 3 d and e: Linear Regression of d. high and low air temperatures (daily values, Local Climatological Data Set from NOAA National Centers for Environmental Information, Provo Station, Utah County) versus water temperatures ($^{\circ}\text{C}$) from Buoy 1 mile W of Provo Marina ($x \pm \text{SEM}$; $n=96/d$) [left panel] as well as e. water temperatures versus relative humidity (% , daily mean, Local Climatological Data Set from NOAA National Centers for Environmental Information, Provo Station, Utah County) [right panel] during a time period of May – Nov 2017.

General parameters Turbidity, Conductivity, oxygen saturation and pH

Daily Surface measurements of conductivity, turbidity, oxygen saturation (%) for the three measurements sites (Fig 4) again show a fairly uniform behaviour of those parameters throughout the lake, when the three measurement sites are compared. Please note, that only the data sets from the buoy 2 miles of Vineyard are complete, the buoy 1 mile E of Bird Island did not perform in Midjune to the beginning of July and the buoy 1 mile W of Provo Marina stopped sending valid data after November 5th. While pH remains fairly high (8-9) throughout the measuring period, conductivity is showing changeable behaviour until the end of June, then rises steadily until the end of the measurement period. Turbidity values are changeable early from May to Midjune and again later in summer from Midseptember until the end of the measurement phase, while oxygen saturation values are fairly stable between 80-90% from May to Midjune and then again from Midseptember to the end of the measurement period, while exhibiting changeable values from 70-120% in midsummer indicating high algal bioactivity.

Algal development parameters Chlorophyll a and Phycocyanin

Daily Surface measurements of Chlorophyll a (Chl a) and Phycocyanin values (Fig. 4) again show a fairly uniform behaviour throughout the lake, when the three measurement sites are compared. Please note again, that only the data sets from the bouy 2 miles of Vineyard are complete, the buoy 1 mile E of Bird Island did not perform in Midjune tot he beginning od Jule and the buoy 1 mile W of Provo Marina stpped sending valid data after November 5th. While Chl a values remain at around 5 $\mu\text{g/L}$ from May to Midjune, two Chl a peaks are observed around Midjuly and approx. 2-3 weeks in August with values ranging slightly higher than at the beginning (10-17 $\mu\text{g/L}$) afterwards until the end of the measurement period. With Chl a values between 8- >25 $\mu\text{g/L}$ the lake can be considered eutrophic. Phycocyanin values

start low (0.5 $\mu\text{g/L}$) after winter, peak early in June (6 $\mu\text{g/L}$) and again remain stable at around 0.5-3 $\mu\text{g/L}$ thereafter.

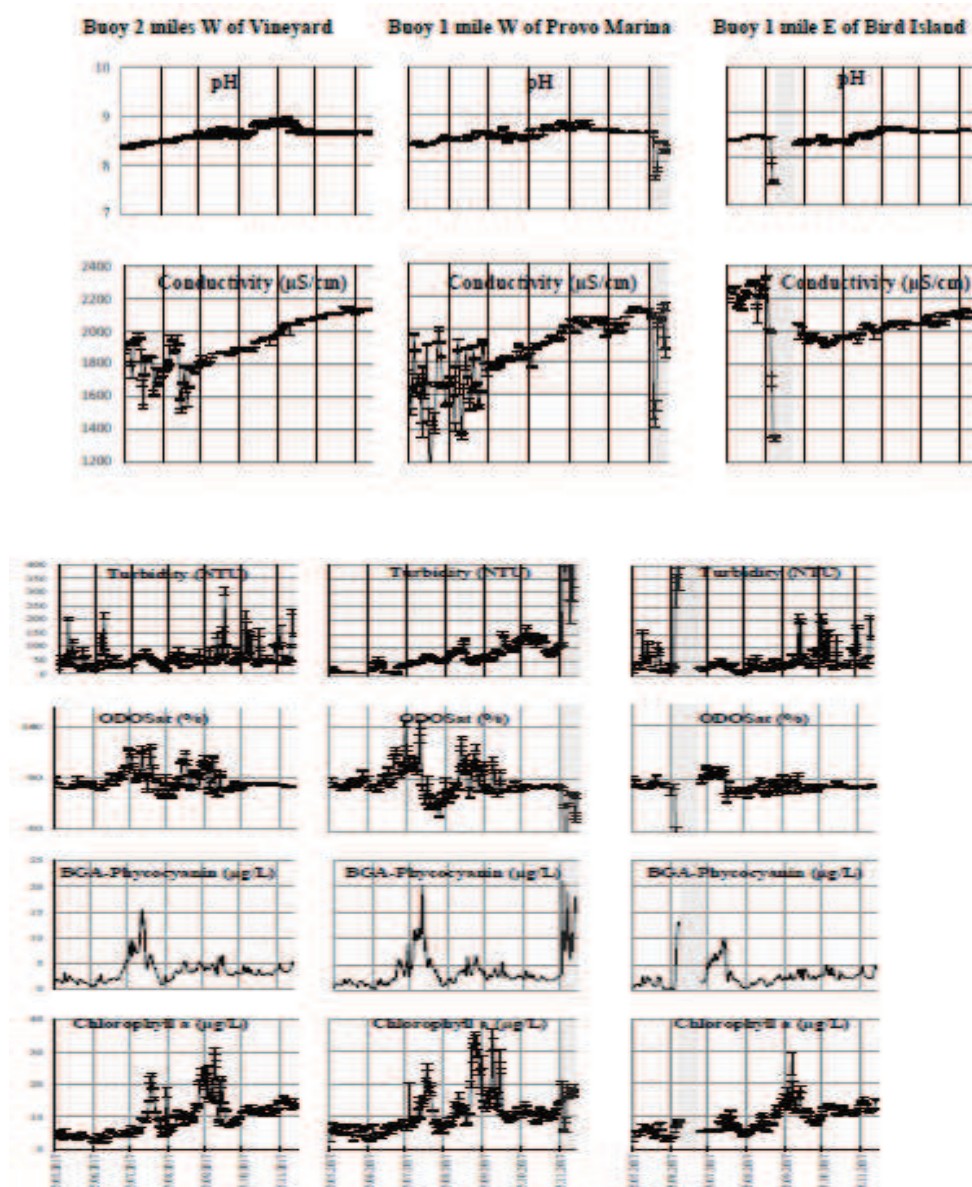


Fig. 4. Comparison of buoy parameters over time May – Nov 2017 ($x \pm \text{SEM}$; $n=96/\text{d}$; grey=probe malfunction)

Comparison of Parameters

Behaviour of general parameters and algal development parameters (Fig. 4) corresponds well in stable and changeable periods: While algal growth (Chl a) is exhibiting peak values in Midjuly and August, pH is slightly elevated accordingly. Turbidity values are more stable over the summer period and Oxygen saturation values are elevated and more changeable in all three buoy measurement sites indicating bioactivity from algal

development. Sites behave similarly in change of values over time with a slightly less pronounced change in the Buoy 1 mile E of Bird Island at the more southern part of the lake.

Phosphate Accumulation within Lake Sediments

In Lake Utah annual phosphorus accumulation is estimated to be 214.1 t/a, based on the annual input (297.6 t/a) and and output (83.5 t/a) values (PSOMAS, 2009). Phosphorus release from sediments is dependent on several intertwined factors such as sediment resuspension, temperature, pH, Fe and Ca concentrations, redox potential and microbial processes.

In 2015 a study (Merrel, P.D., 2015) on lake sediments (n=56 samples, 0-10 cm) showed an average Total Phosphorus content of 710 ppm (Range 306 - 1710 ppm) within lake sediments with varying distribution throughout the lake and higher values at the Provo and Orem areas. Phosphate values near the buoy measuring sites were 766-786 ppm near Buoy 2 miles W of Vineyard, 762-872 ppm near Buoy 1 mile E of Bird Island and 896 ppm near buoy 1 mile W of Provo Marina (locations see Fig.1).

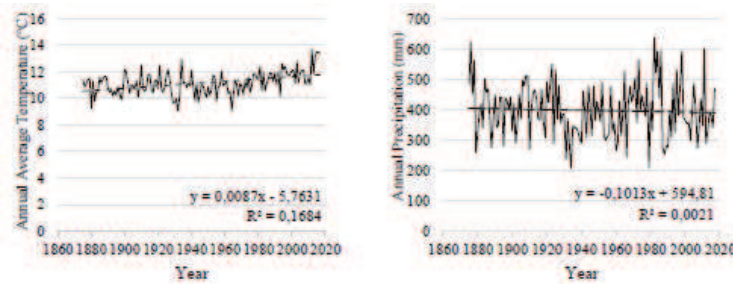
Prediction of Parameter Development

As climate change is to be considered as an option in the Lake Utah region, some thought as to future development of annual temperatures, precipitation and consequently evaporation and possible nutrient concentration should be given in order to determine, whether these effects may add to eutrophication processes in Lake Utah.

Air Temperature and Precipitation Development

For trend estimation annual air temperature and precipitation data were investigated from Salt Lake City as the nearest measuring station to the Lake Utah region with an unbroken data record ranging from 1875 to 2017 (Data derived from US Dept of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Salt Lake City Weather Forecast Office, 2017). Linear regression reveals an annual increase of +0.0087°C yr⁻¹ (0.087°C per 10 yrs), a value similar to an average annual increase estimated for Salt Lake City earlier (+0.015°F yr⁻¹; Bardsley et al., 2013). This is accompanied by a slight decrease in precipitation of 0.1013 mm per year, but correlation coefficients ($R^2 = 0,1684$ for air temperature and $R^2 = 0,0021$ for precipitation over time) show the uncertainty of these assumptions due to variation within the annual data set (Fig. 5). Based on these data not much of a change in annual evaporation rates is to be expected, but as one factor possibly affecting lake nutrient concentrations it should be looked into nevertheless.

Fig. 5.



Development of Annual Air Temperature (°C; left panel) and Annual Precipitation (mm; right panel) in Salt Lake City 1875-2017 (single values/year)

Development of Evaporation (Dalton Model)

There are numerous models for estimation of evaporation of open water surfaces due to the complexity of the process, the number of influencing factors and boundary conditions. In the present case the fitting application of a model has to bear data availability in mind. As estimates from water or temperature balance as well as estimates based on micrometeorologic measurements of surface near air layers (Vietinghof, H., 2002) or use of the Turc method (Kappas, M, 2009) lack the needed data input, the study opted for the more empiric Dalton approach (Wittenberg, 2011) for estimation of evaporation:

$$E = b * v * (es - ea) = \left[\frac{mm}{d} \right]$$

with E = evaporation over open water surface mm/d; b = wind factor [decreasing with length of open water surface, assumed value 1.1 based on lakes of similar length, this factor decreases with increase in length due to water vapor saturation of air on the way]; v = mean wind velocity in 2 m height [m/s; assumed value 3 based on Utah State Park average measurements 2010-2017 giving 6.8mph = 3,03 m/s], es = saturation vapor pressure at temperature TW of water surface [hPa], ea = actual vapor pressure at air temperature TL:

$$es = 6.11 * 10^{\left(\frac{7.48 * T_w}{237 + T_w} \right)} = [hPa]$$

$$ea = 6.11 * 10^{\left(\frac{7.48 * T_L}{237 + T_L} \right)} * rel. Humidity(\%) = [hPa]$$

For an estimate served the data set May – November 2017, for TL the NOAA climate data set (Fig 2a, b) and for TW the buoy data (Location Provo) on water temperature development (Fig. 3c), results of estimate of evaporation in comparison to real evaporation data are shown in Tab. 1.

Evaporation	May	June	Juli	August	September	October	November	Total
Season 2015 [m ³]	-50.325.984	-65.127.744	-77.215.848	-69.691.620	-48.969.156	-32.933.916	-18.132.156	-362.396.424
Estimate Season 2017 [m ³]	-43.027.561	-70.336.664	-89.486.266	-84.467.251	-54.484.711	-32.679.754	-13.479.644	-387.961.851

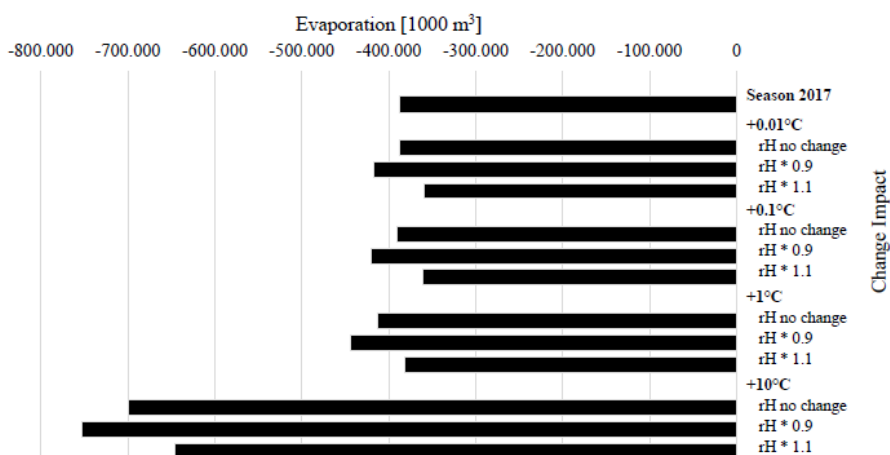
Tab. 1. Real Lake Utah evaporation data (Merrel, P.D., May – December 2015) and estimate of evaporation in Lake Utah based on buoy and NOAA data sets from May – November 2017

Based on these values a change in evaporation can be estimated for changes in air and water temperature conditions as well as the impact on humidity changes using the Dalton formula (Tab. 2.)

Evaporation [1000 m ³]	May (Start 05/05/17)	June	Juli	August	Sept.	October	Nov. (End 11/17/17)	Total	% Lake Volume
Estimate Season 2017	-43.086	-70.556	-89.487	-84.468	-54.485	-32.680	-13.479	-388.241	36
+0.01°C									
rH no change	-43.055	-70.380	-89.540	-84.518	-54.519	-32.701	-13.488	-388.200	36
rH * 0.9	-46.468	-74.918	-95.946	-90.364	-59.328	-35.534	-15.087	-417.645	39
rH * 1.1	-39.642	-65.842	-83.111	-78.671	-49.622	-29.869	-11.891	-358.756	33
+0.1°C									
rH no change	-43.300	-70.770	-90.020	-84.972	-54.818	-32.896	-13.571	-390.346	36
rH * 0.9	-46.734	-75.334	-96.460	-90.850	-59.655	-35.745	-15.178	-419.956	39
rH * 1.1	-39.867	-66.207	-83.578	-79.095	-49.982	-30.045	-11.962	-360.737	34
+1°C									
rH no change	-45.828	-74.774	-94.940	-89.637	-57.900	-34.892	-14.413	-412.381	38
rH * 0.9	-49.463	-79.593	-101.731	-95.840	-63.017	-37.920	-16.123	-443.686	41
rH * 1.1	-42.191	-69.954	-88.148	-83.434	-52.782	-31.863	-12.705	-381.077	36
+10°C									
rH no change	-79.080	-127.014	-158.530	-149.993	-98.015	-61.472	-25.718	-699.820	65
rH * 0.9	-85.389	-135.167	-169.859	-160.424	-106.834	-66.888	-28.783	-753.347	70
rH * 1.1	-72.769	-118.861	-147.199	-139.560	-89.197	-56.056	-22.652	-646.294	60

Tab. 2. Lake Utah evaporation data estimates (Dalton equation) under different climate premises (Temperature, °C; relative Humidity (rH; %)) based on buoy and NOAA data sets from May – November 2017 (assumed lake volume 1.073.129.000 m³)

Data from Tab. 2 show a slow increase in evaporation with rising temperatures, the difference being 19.571 acre feet at a +1°C change, thus 6.2% of Season 2017 total value on the assumption, that relative humidity stays the same. Only assuming a 10°C temperature increase evaporation is estimated to be almost double compared to evaporation estimates for season 2017 (Tab. 2, Fig. 6)



Evaporation (Fig. 6) rises with sinking relative humidity (rH*0.9 at +1°C: 25.379 acre feet difference) and falls with rise in relative humidity (rH*1.1 at + 1°C: 25.379 acre feet difference) when compared to values under unchanged relative humidity conditions ($\pm 7.6\%$)
 Fig 6. Estimated changes in Lake Utah evaporation with changing climate assumptions (temperature, relative humidity)

Development of TP in Lake Water and Sediments

Since the influence of increasing air temperatures is marginal Phosphorus concentration over time will not be notably influenced by a slight temperature increase due to climatic changes. However, change in runoff caused by temperature change was not included into the above considerations, but there is indication from observations within the region that temperature changes alone will lead to earlier runoff and reduced runoff volume (flow reduction on average 6.8% °C-1; Bardsley et al., 2013).

Thus, climatic change and subsequent alteration in evaporation will not drastically modify lake size and Phosphorus concentration in the near future, not as much as annual input of the element due to anthropogenic influence (waste water treatment plants, agriculture). Annual Phosphorus accumulation is estimated to be 214.1 t/a based on the annual input (297.6 t/a) and output (83.5 t/a) values, output mainly via Jordan River (PSOMAS, 2009). Phosphorus is described as derived mostly from waste water treatment plants (76%) and to a lesser extend from agriculture with elevated values visible in April and May presumably from fertilization (PSOMAS, 2009).

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Total P Inflow (t/a)	22.4	22.7	23.7	29.6	29.9	23.6	23.4	22.4	25.3	26.8	25.6	22.2
Total P Export (t/a)	-2.6	-2.0	-3.2	-5.3	-12.1	-12.5	-15.4	-14.1	-9.7	-3.2	-1.9	-1.5

Table 3. Total Phosphorus Inflow and Export - Lake Utah (t/year; monthly average values 1980-2003; Data from PSOMAS, 2009)

Management Options

Longterm measures for lake remediation would need cooperation with wastewater treatment plants serving a growing population around the lake with the aim to diminish that TP annual load, since elevated total Phosphorus levels – bioavailable as Orthophosphate - enhance algal development along with low dissolved oxygen, elevated pH, and potentially cyanotoxin production by cyanobacteria. Harmful algal blooms (HAB) occur mostly when nutrient conditions are favourable for cyanobacterial growth, their occurrence is enhanced in shallow eutrophic and polytrophic waters (Phosphate values >0.01 mg/L). Thus, Phosphate input from wastewater treatment plants would have to be controlled as a means of considerably diminishing the source of Phosphate influx. At the same time release of Phosphate from lake sediments would have to be diminished or remediated in order to restore more natural lake conditions.

Longterm treatment options could thus include Phosphate elimination within wastewater treatment plants especially with estimates of a growing population around the lake. As a technology based effluent limitation Phosphorus concentrations should be <1 mg/L from all wastewater discharges into surface waters by 2020 according to Technology-Based Phosphorus Effluent Limits or TBPEL Rule, R317-1-3.3. (Utah State Bulletin, 2016).

In addition, Phosphate loaded lake sediments could be viewed as a resource for an increasingly scarce element necessary to plant growth and hence agricultural application by wastewater treatment plants and used accordingly. The process of hydrothermal carbonization (200°C) for up to 70% dewatering of sludge followed by acid induced pH change 9 to 2 and back is one option promising an >80% Phosphate recovery from sludge alongside hydrochar production (Heilsmann et al., 2014).

However, other studies point out, that despite the excess Phosphate overload the low light availability caused by natural turbidity of the lake is an effective growth-limiting factor impeding algal growth (Merritt and Miller, 2016). The authors also point out, that Phosphorus levels would have to be lowered to near 0.01 - 0.02 mg/l to limit algal development and maintain that this is hard to achieve given the overall lake loading of 60times the 0.01 mg/l value.

Effects of longterm treatment measures may only become visible 10-20 years after the onset of improved Phosphorus elimination processes as other examples show. Similarly, a successful Phosphate elimination program has been implemented at Lake Constance, Germany, with considerable water quality improvement after 30 years of combined effort between neighbouring states around the lake shore (Fact Sheet igkb, 2013), which resulted

in a Phosphate decrease from 0.08 mg/L PO₄-P in 1980 to 0.01 mg/L PO₄-P in 2010. Measures were directed mainly at improvement of waste water treatment performance, secondly at the agricultural sector (fertilizing regimens). Lake Constance (Bodensee) in Southern Germany with the border nations of Switzerland, Austria, and Germany is even larger in size than Lake Utah covering an area of 536 km², a length of 63 km, width of 14 km and a volume of 48 km³. However, mean depth of 90 m is much different from Lake Utah lake depth (3.2 m on average). Catchment area is 11.487 km² (mean effluent (1978-90) 381 m³/s, mean rainfall 0.45 km³/a, mean evaporation 0.29 km³/a) and a 1.6*10⁶ people live around the lake. 223 Waste Water Treatment Plants > 50 p.e. (population equivalent) serve the public.

Shortterm options would be of immediate effect but rather treating symptoms than the causes of the trophic state of the lake. The usual measures include impediment of release of Phosphorus from lake bottom via sediment cover. With the distribution of precipitants, such as calcite, zeolites, aluminum and silicon oxides above the sediment, release can be diminished. Another option is the addition of mineral substances (such as sand or loam) as purely physical barriers or introduction of carrier systems (clay or PU foam) into the body of water. Planting reeds in the shore area as phosphorous sinks can have additional beneficial effects, as the higher plants compete with the algae.

For monitoring HABs, HAB forecast and information to the public more data are needed to implement a reliable model of HAB Prediction, such as algal growth parameters for different strata within the lake (0, 1, 2, 3 m). Such parameters include water temperature (°C), turbidity (NTU), conductivity (µS/cm), oxygen saturation (%) and pH as general parameters as well as optional Chlorophyll a (RFU, µg/L) and BGA Phycocyanin (RFU, µg/L). In addition, measurements of Phosphate at lake bottom and surface will be needed as an additional input to feed a simple general prediction model of HAB after Gotthold et al. (Gotthold et al, 2016; von Orgies-Rutenberg et al., 2017).

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Brief biographies of the authors

Hedda Sander

Ostfalia University and Board Member of the Center of Scientific, Interdisciplinary Risk and Sustainability Management, Visiting Professor der University of Wisconsin (Parkside), College of Natural and Health Sciences. Her preferred research topics are biomodelling and bioremediation (eutrophication, harmful algal blooms, heavy metal contamination and organic residues).

Fabio Kügow

Bachelor student, Ostfalia University, Bio and Environmental Engineering Course of Studies.

John Skalbeck

Faculty professor of University of Wisconsin at Parkside, Geosciences Department and the Academic Director for the Master of Science in Sustainable Management program. Dr. Skalbeck has experience as a groundwater consultant specializing in soil and groundwater contamination and remediation. His current research includes modeling of gravity and magnetic data for hydrogeologic applications, wetlands characterization, and water quality of beaches.

Case Study: Impact of Solar Power on Energy Sustainability at Indianapolis Motor Speedway and Pocono Raceway with Emphasis on Horizontal Expansion of their Programs across Motorsports

Garrett Jones

University of Wisconsin – Parkside

Abstract

Motorsports and environmental sustainability appear at first glance to be complete opposites with the only relationship being an antagonistic one, but not in the 21st century. Various motorsports organizations have been expanding on ways to leave a greener footprint on the world for decades. A diversity of methods is to counterbalance any negative residue caused by motorsport activities. Methods practiced range from food waste and oil recycling to smart and renewable energy. Since 2008 the National Association for Stock Car Auto Racing has pushed its green initiative that partners with racetracks, race teams, auto manufacturers, sustainability-focused companies, and fans to reduce and offset their impact on the environment. This article is a focused Case Study on the impact of solar power on energy sustainability at Indianapolis Motor Speedway and Pocono Raceway with the potential horizontal expansion of their programs across motorsports.

Keywords: solar farm, Pocono Raceway, Indianapolis Motor Speedway

Introduction

The world is dying, or so all the news outlets say. Every night someone on the news or social media is pointing at temperatures rising and polar ice caps melting. Cars and the beef industry are being blamed with the only popular solutions being complete veganism or no more driving. Extremes are talked about more often than moderate solutions I've noticed. A lot of folks want one big solution to fix everything, but I am not one of them. I believe that to fix a large problem, you need a lot of little things not just one big thing. My background is in agriculture and I have learned at least two things from over 15 years-experience: 1) each little step moves you forward, and 2) there are only so many hours in a day. With over 6 billion tons of CO₂ being pumped into the air each year, tackling the 4 million tons produced by motorsports heavyweight National Association of Stock Car Auto Racing (NASCAR) seems inconsequential. But, what organizations within and attached to NASCAR are doing could have a wide-reaching impact on the world. What NASCAR affiliates Pocono Raceway and the historic Indianapolis Motor Speedway are doing with solar energy is laying the

groundwork for meaningful CO2 offset while providing complete electrical energy sustainability.

Research Findings

Pocono Raceway

Pocono Raceway is a 2.5-mile-long superspeedway located in Long Pond Pennsylvania situated within the Pocono Mountain Range. Known as the “Tricky Triangle” for its unique triangular configuration Pocono Raceway can hold 76,812 spectators to enjoy its events. Pocono Raceway hosts 4 NASCAR national touring series races annually along with 1 IndyCar race per year, bringing fans from across the world to enjoy the spectacle of auto racing.

According to CEO Nick Igdalsky and Vice President George Ewald in 2009, Pocono Raceway began exploring the use of alternative energy sources to power the track. After consulting with experts, they contracted enXacto, an EDF Renouvelables Company with a moniker of being a renewable energy solution company, to build a solar farm large enough to cover track energy usage. It was decided that the solar farm would have a maximum output of 2.977 megawatts of power. This limit was put in place because by law if they made over 3 megawatts, the racetrack would have to be reclassified as a power company under the law. Costs at the time-averaged \$8.50 per watt (Matasci). 1 MW is equivalent of 1,000,000 watts. I estimate that the cost for the Pocono Solar Farm was around the \$25 million mark based on Matasci’s cost per watt figure multiplied by the wattage Pocono Solar Farm is capable of. In August of 2010, the raceway flipped the switch on a 25-acre solar farm located on the edge of the racetrack’s property that is home to 39,960 75 watt thin-film solar panels capable of generating the 2.977 megawatts of power per year. Thin-film panels versatility allows tailoring and engineering of the layers in order to improve device performance (Chopra). These thin-film panels are designed to capture solar energy even in overcast/cloudy conditions, at a 30% efficiency compared to sunny conditions. Weather conditions are partially cloudy on average year-round, so the thin-film technology allows even this gloomy area to benefit from solar power. According to Mr. Ewald, when the system was installed these panels were expected to give Pocono Raceway 25 years of energy sustainability. This places their expiration around the year 2035. Pocono plans to explore the advancements of solar technology 2 years prior.

The power generated by the solar farm is more than the racetrack needs for yearly operation. To make use of the excess power generated Pocono Raceway sells the power generated to the electrical company that is then used to power 300 homes in the area. The system offsets more than 3,104 Metric Tons of carbon dioxide annually. According to Pocono Raceway: Solar, the raceways live data stream of their solar farm, the solar farm

total CO2 offset is equivalent to 616,772 trees being planted. Energy generated equals 2,775,475 gallons of gas saved. And, total energy produced equals 993,688 propane cylinders. The solar farm has already generated over 34,000,000 kilowatt-hours of power and is expected to generate over 72,000,000 kilowatt-hours of power by 2030, effectively doubling the CO2 offset already reached.

Indianapolis Motor Speedway

Indianapolis Motor Speedway (IMS) is a 2.5-mile-long rectangular oval located in Speedway, Indiana, just West of Indianapolis. The “Brickyard,” as it is often called, is the oldest permanent racetrack in the world dating its construction back to 1909. IMS also holds the record as the highest-capacity sports venue in the world with a permanent seating capacity of 257,325. The Indianapolis 500, the tracks premier race, has been run there for over 100 years while situating itself as one of the “Triple Crowns” of the motorsport world. Numerous events are held each year aside from the Indy 500, including the Brickyard 400 (NASCAR), airshows, concerts, and other racing events. The track was added to the list of National Historic Landmarks in 1987.

In February of 2013, Indianapolis Motor Speedway announced a partnership with SunWize Technologies (California), Blue Renewable Energy (Arizona), and the Indianapolis Power & Light Company (Indiana) to build a 25-acre solar farm on IMS property northeast of the track. The solar farm is made up of 39,314 units of 48” x 72” photovoltaic solar panels, with the entire system occupying roughly 68 acres of land. Each panel can produce up to 230 watts per day, and with all 39,314 panels functioning, a whopping 9,064 kilowatt is produced daily. This amount not only powers the racetrack but over 1,000 homes and businesses in the area. Since going online, the solar farm has produced over 60,000,000 kilowatt-hours of power while offsetting more than 91,395 metric tons of CO2 emissions.

To describe best the partnership between Indianapolis Motor Speedway, SunWize Technologies, Blue Renewable Energy, and the Indianapolis Power & Light Company, I look to another. In the words of Gary Dick when the plans were announced “The solar farm represents a significant private-public partnership among national and Central Indiana companies, all of which are committed to finding creative solutions to increasing sustainability by helping to increase sources of renewable energy generation”. The solar farm allows Indianapolis Motor Speedway to enjoy 100% clean energy sustainability.

A few key differences appear when comparing Indy and Pocono’s respective farms. First off, IMS does not own or operate the solar farm. SunWize Technologies, Inc. and Blue Renewable Energy co-developed the project. Blue Renewable Energy entered into a land-lease agreement with IMS to build the system on the property. The system was designed, engineered and installed by SunWize Technologies. Clenera and Swinerton Builders

finalized the engineering and constructed the project on behalf of Centaurus Renewable Energy, which operates the facility. Indianapolis Power & Light, the utility company of Indiana's capital city, owns the Solar Renewable Energy Credits (SRECs) and the power produced. Second, because IMS leased the land to a registered power company, they can produce more than the 3-megawatt limit before reclassification applies. This allows the farm to produce three times the amount of power compared to Pocono. Third, IMS uses 646 fewer panels than Pocono but creates more power. They also cover less area at IMS at 21.6 acres to Pocono's 25 acres. Pocono's solar panels can produce 75 watts a piece where is Indy's can produce more than triple the amount at 230 watts apiece. The discrepancy can be primarily traced to the rapid advancement between the completion of Pocono's Solar Farm and the start of Indianapolis Motor Speedway's Solar Farm project.

Recommendations

Before first considering horizontal expansion, it is important to understand what knowledge has been gathered by analyzing Indianapolis Motor Speedway and Pocono Raceway. In 2010 a 25-acre solar farm ran a cost upwards of \$25,000,000 to build as each watt of power generating capability cost \$8.50. It was filled with 75-watt panels that were sized 48" x 72". By 2014 those same 48" x 72" panels could generate upwards of 230-watts, triple the amount of just four years prior. In 2019 the cost to generate a watt of solar power has dropped to \$2.99 per watt of power generated. Wattage capability has also increased to a minimum of 320 watts of power generated by the same size panel. Current capabilities point to needing only 24% (6 acres) of the land that Pocono Raceway is using to generate the same amount of power and at 35% (\$8.75 million) of the cost.

Given the information above, there are still only a few tracks that are fit for horizontal expansion of solar power. Most racetracks do not have the land access that Pocono and Indy have. Short tracks, including Martinsville, Bristol, and Richmond, fill the surrounding land with fans each race weekend. Indy and Pocono each had land either not being utilized or available for repurpose. Road courses like Watkins Glen and Road America do not have enough surrounding populace to justify the additional power. Indy is located 5 miles away from a major US city that can use the excess 9.2 megawatts of power. Pocono has enough populace around it to justify current classification but not enough to justify reclassification. However, all the aforementioned tracks could make solar sustainability a reality based on how the panels are installed. I will just be focusing on select tracks that I theorize could utilize solar farm capabilities the best and are most logical to apply for a horizontal expansion to take place at this time.

The following tracks fit what I believe is the premier conditions for a solar farm to be most effective. Premier conditions include population, climate, and space available. I look for tracks with populations in the area exceeding 500,000 people so that there can be an abundance of beneficiaries of the clean energy source. Climate is sunny for most of the year so that more effective solar panels can be utilized; thin-film panels work best for cloudy areas because of the way they are made but there are more effective models for sunny areas. Space available is important because you must have a place to put the solar farm. If you copy Indy, then the more space you can afford to a solar farm then the more power available to be produced cleanly.

Through an interview with Sonoma Raceway's Matt Ellis it was discovered that multiple tracks have consulted them about including solar power into potential track renovations. Located in Sonoma, California Sonoma Raceway introduced solar panels in mid 2011 through a partnership with Panasonic (Brennan). What differs them from Pocono and Indy is that they have a solar array instead of a solar farm. There are fewer panels in an array and the system only covers 41% of the tracks energy usage compared to the 100% coverage that Indy and Pocono's solar farms do. Throughout the years numerous tracks have consulted Sonoma including 3 that fit the aforementioned criteria which would be Texas Motor Speedway, ISM Raceway, and Las Vegas Motor Speedway.

Texas Motor Speedway is a 1.5-mile quad-oval racetrack a few miles Northwest of Fort Worth, Texas. This track is situated in the Northeast portion of the fabled republic with sunshine most of the year and average temperatures around 65 degrees. The population of the area exceeds 741,000 people.

ISM Raceway is a 1-mile racetrack sitting on the outskirts of Phoenix, Arizona. Arizona, as a state, is mostly high mountain desert with plenty of sunshine to go around and average temperatures in their coldest months situated around 66 degrees according to US Climate Data. The area only has on average precipitation 36/356 days of the year. The population of the area exceeds 1,660,000 people.

Las Vegas Motor Speedway is a 1.5-mile tri-oval like Texas Motor Speedway situated on the outskirts of Las Vegas, Nevada. Situated near the Nevada-Arizona border, Las Vegas experiences some of the highest average temperatures in the United States, with an annual average of 69 degrees according to the US Climate Data. US Climate Data also shows that the area only experiences an average of 21/356 days of precipitation a year. The population of the area exceeds 644,000 people.

Conclusion

Though the world is pointed towards chaos, there is still time to correct course. Billions of tons of CO₂ may be pumped into the atmosphere, but we can steadily offset its effects. Each step gets you closer to completing your goal. Pocono Raceway started this. Indianapolis displayed the promise. What track will signify the boom in solar farm additions?

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Brief Biography of the Author

Garrett Jones

Garrett hails from the Commonwealth of Virginia originally and is a Senior level student at the University of Wisconsin – Parkside studying Business Management and Marketing. He is currently an Assistant Production Supervisor Intern with Case New Holland in Racine, Wisconsin. Garrett is also a managing partner with Creator Farms, a premier heirloom agricultural startup right in between Chicago and Milwaukee. He plans to enter into a Master's program after his graduation in May of 2020.

Financial Sustainability: A Case Study on Cash Value

Noah N. Prokash, Abey Kuruvilla, Yusef Salameh

University of Wisconsin-Parkside

Abstract

This case study offers a viewpoint on sustainability from the perspective of personal finance. In financial planning, considering the use of permanent life insurance to set the foundation towards building a bulletproof diversified portfolio of securities, and saving for a bountiful retirement, are among the long-term approaches to growing sustainable and reliable wealth. Cash value whole (permanent) life insurance is an increasingly common tool that is able to provide a high level of sustainability in the lives and long-term financial goals of policy owners. The death benefit of a life insurance policy forms an immediate estate. Policy owners of cash value permanent life insurance also have the ability to retain living benefits from the policy, such as the ability to earn annual dividends based on the financial position of the insurer, as well as the ability to accumulate cash value for the purpose of taking advantage of life's opportunities, or being prepared with a source of financial security in times of economic hardship. Cash value is a source of liquid assets stored inside the life insurance policy that are ready for whatever life has to offer. Specifically, this paper focuses on the importance of cash value permanent life insurance and the significance it has in the lives of policy owners, and their ability to accumulate sustainable and reliable wealth.

Keywords: Sustainability, Cash Value, Liquidity, Finance, Policy Owners

Introduction

“Compounding interest is the 8th wonder of the world.” This assertion came from the late theoretical physicist, Albert Einstein himself. Compounding interest is a vital component for building wealth and sustaining long-term growth in value of an investment. There are many threats to any investment, such as annual inflation, taxes and segregated fees, as well as the chance, in retirement, that one could outlive their nest egg. Knowing how to properly allocate money in areas that work more efficiently than others and understanding the benefits of timely and imminent withdrawals can help investors, especially in qualified plans, to avoid these common threats. Northwestern Mutual, a participating commercial insurance organization, is reinventing the experience of financial security, to help their clients live the life they want now, and in the future. This American financial service mutual organization will

be heavily referenced throughout the duration of this case study. This case study will help individuals better understand the reliability of cash value permanent life insurance in correlation to other proposed securities for generating both an estate, the ability to build living wealth, and leave a legacy. However, we also hope the novice inquiring to the significance of cash value permanent life insurance, or the uphill battle against the decrease in value of saved capital due to inflation for the first time, will be able to better understand the significance of interest and compounded growth. Finally, we hope all will focus on the value of building a living estate that has the ability to generate living benefits, and leave behind a lasting and profound legacy in the case of eventual mortality.

Reference

For international reference, Northwestern Mutual is an American private mutual company, in the financial services industry, in 2018, ranked 104/500 on the Fortune 500 list. With its company headquarters based in the city of Milwaukee, Wisconsin, the privately held financial security company provides consultation on wealth and asset income protection, as well as financial planning, planning for retirement, investment advisory services, business and estate planning. Northwestern Mutual's products include life insurance, disability insurance, long term care insurance, as well as investments and annuities.

Theory- Sustainability in Cash Value

“More than ever, life insurance is a unique and preeminent necessity for 99 families out of 100.”

The theory is, financial stability comes from having a solid and formidable foundation. Upon this foundation sustained wealth is grown and accumulated over the course of a lifetime. The confidence a policy owner of a permanent life insurance policy has in knowing they have the foundation of an established estate allows them to “live their life like they want.” The estate is created immediately upon the policy’s effective date, and instantly can handle life events which a policy owner is unable to control, all while leaving financial support in the case of death. Life insurance, whether whole, universal, or term creates an instant estate in the name of the policy owner, in the form of a death benefit, to be given to a chosen beneficiary upon the death of the policy owner. This benefit can be distributed as a financial tool to the beneficiary in order to maintain the cost of living which the deceased will no longer be able to provide, or instead, the death benefit of the policy can be used to pass on as a legacy to the desired beneficiary. The principal values of life insurance are essential to the foundation of preserving and building sustainable wealth. The purpose of a permanent life insurance policy is to insure the policy owner for the remainder of their life.

Furthermore, policy owners of cash value permanent life insurance have the added benefit of earning annual dividends. However, dividends are only offered to policy owners if the private insurer is a participating insurer and are never guaranteed. Participating insurers are insurance companies that pay dividends directly to their policy owners. In the case of Northwestern Mutual, a participating insurer, the company pays dividends to the benefit of their policy owners, and in doing so have built a strong history for sharing the company's success. Chart 1a shows that Northwestern Mutual has been issuing dividends annually since 1872. Each year the dividend rate continues to grow, and the company continues to issue more in dividends. Dividends are often a reflection of a favorable financial position of a participating insurer and are often taken into consideration when a prospective insured is attempting to choose a solvent and reliable insurer. In the case of Northwestern Mutual, the company is expected to pay out a record 6 billion in dividends to respective policy owners for 2020. These dividends as well as the accumulated cash value are both forms of living benefits retained by policy owners of cash value permanent life insurance.

The cash value in a permanent life insurance policy will have the ability to start building cash value in an account separate from the policy's death benefit. This cash value is built upon payments toward the premium made by the policy owner. The accumulated cash value is guaranteed to grow over the course of the life of the policy owner. Not only is the accumulated cash value guaranteed to grow, but cash value is also liquid, which means that it is money that can be accessed at any point by the policy owner through withdrawals, policy loans, or other collateral arrangements. Cash value in a permanent life insurance policy offers sustainability and growth, sheltered from the day-to-day volatility of the market, and is accessible as needed, giving a policy owner total financial security.

Cash value is a continuously growing liquid source of capital, compounding outside the volatility of the day-to-day market. As any investor should understand, diversification within the market is a proven strategy to minimize losses and sustain growth. However, diversification within the market does not offer the necessary liquidity if the capital put into investments are meant to yield long-term growth. Furthermore, having a substantial amount of capital stored within a standard savings account is engaging with the opposite of risk, which comes with significant opportunity cost when taking into consideration the annual effects of inflation. The federal treasury attempts to keep the rate of inflation around 3% annually, which on average, correlates to a 1.5% loss in the value of money stored within a savings account each year, even if nothing is withdrawn. Having a savings account through a bank is one of the safest places to store money, however there are more efficient "buckets"

that allow the same access to liquidity. Cash value permanent life insurance, between five of the major insurance providers in the United States typically grows at a rate of 4% or higher, (shown in figure 1b). Having access to liquidity through cash value, is a much more effective approach to build and preserve wealth when compared to the rate of interest offered through the standard conservative savings account.

1a. Figure 1a depicts a graph of annual dividends paid by Northwestern Mutual from years 1872 through 2016.



1b.

The Northwestern Mutual Life Insurance Company (Northwestern Mutual)

BEST VALUE Northwestern Mutual has the highest cash value return among major insurance companies. - as compiled by Blease Research

While other companies tout sales illustrations and advertised rates, there is one important, easy-to-compare and unbiased number to know when it comes to permanent life insurance policy performance: the historic actual cash value return.

Who is Blease Research?
 Roger Blease, founder of Blease Research, is a former manager of product analysis for one of the nation's top credit rating agencies. His company publishes software that enables subscribers to conduct detailed comparisons of cash value life insurance policies based on data provided by more than 50 of the nation's leading life insurance companies.

Company	20-year cash value returns
Northwestern Mutual	4.97%
New York Life	3.98%
Mass Mutual	3.65%
MetLife	3.48%
Guardian	3.40%

Best Cash Value Return

Northwestern Mutual's permanent life insurance offers more than death benefit protection. It also has provided the highest cash value return among major insurance companies, as measured by Blease Research. Over a 20-year period ending in 2011, the actual cash value return of its flagship permanent life insurance product was 25% greater than the nearest major competitor.

Source: Blease Research Full Disclosure 2011 Whole Life Edition (www.full-disclosure.com)

Policy results are based on \$250,000 whole life policies issued in 1991 to 45 year old males (best underwriting class unless noted otherwise). Premiums vary by company.

Cash value internal rates of return (IRR) are based on actual dividends used to purchase additions. The IRR is the level annual return needed on premium to produce the respective value or benefit. A higher IRR is, of course, more favorable. The IRRs do not take into account the time value of money.

The Northwestern Mutual dividend scale interest rate (DSIR) for un-borrowed funds is the interest rate used for crediting interest on policy values after deducting mortality and expense charges. Because of the mortality and expense charges, the (DSIR) should not be used as a measure of the policy's internal rate of return. The dividend scale and the underlying interest rates are reviewed annually and are subject to change. Future dividends are not guaranteed.

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Figure 1b compares the cash value return among the five major insurance companies over 20-year period.

Methods and Findings: Down Markets Matter

After the age of 59 ½, investors gain the ability to access their investments stored in the form of a 401k or individual retirement account without facing federal early withdrawal penalties. The average age of retirement according to the U.S. Census Bureau's 2018 report is 65 years old. However, the United States life expectancy among men and women continues to increase annually, thus, the average person is living longer after reaching the average age of retirement. This increase in life expectancy requires more preparation among investors and retirees to compete with the rising threat of annual inflation and the increasing potential of outliving their capital investments or other designated retirement plans. Therefore, continuing to invest and allowing money to grow in retirement is imperative to accumulating living wealth, as well as a financial legacy to pass on to the next generation.

Continuing to keep capital in a qualified plan during retirement requires vigilant preparation and attention to federal regulations concerning taxes and required distributions. Down Markets Matter (shown in figure 2a), presents graphical data showing the growth and volume of an IRA with a beginning balance, at the collection phase of the investment, of 1.5 million U.S. dollars in correlation to the returns of the Standard & Poor's 500 over the years of 1977 to 1996. The table of calculable data in (figure 2b), which directly correlates to that represented in (figure 2a) of Down Markets Matter, demonstrates the statistical opportunity cost for taking more than the minimum required distribution after years of negative returns and the impact it has on the growth of the money throughout retirement.

In a modern study, Required Minimum Distributions: More Government Regulations for Thrifty Savers explains, "At age 70.5 Required Minimum Distributions (RMD) must be disbursed from the owner's traditional IRA accounts resulting in taxes due. Good investors must be aware of rules regarding the amount and timing of these RMD in order to minimize taxes and penalties and properly manage retirement earnings" (Vance, &Wadlinger). RMD's are significantly important for the owner of a qualified retirement plan to understand in order to avoid tax consequences after reaching age 70 ½. This tax consequence results in 50% of the excise amount, which is the amount specified to be dispersed as an RMD from the retirees' qualified plan. Essentially, RMD's are a federal regulation that allows the federal government to receive their tax revenue from the owner of the qualified retirement plan, where the principal's balance is allowed to grow tax deferred. Also, RMD's are a way the government can manage the growth of the balance after age 70.5 when the IRA recipient is expected to be coming up on the end of their life, but still has a large principal growing tax deferred. Referring back to the table of statistical data (shown in figure 2b), there are only

two years with negative returns, (-2.07% and -0.87%) that impact years 65 and 82. The option to withdraw more than the required minimum distribution directly impacts the difference between the two end of year balances at age 84, showing a dramatic (\$2,820,416 - \$1,471,672) \$1,348,744 difference in return.

The study done by Vance and Wadlinger on RMD's mentioned previously, confirms once again the importance of having a diverse allocation of assets that allow other higher return assets, such as in the form of an IRA, to continue to grow through down markets, "Accounts that can be left untouched may remain invested to continue growth and likely necessitate different investment allocations than accounts that must be disbursed monthly, quarterly or annually. However, the overall asset allocation consideration for both long term and required disbursement accounts should be considered relative to the wealth, risk tolerance and cash flow necessities of the owner"(Vance, &Wadlinger). Taking the required minimum distributions allows for the preservation of the IRA's balance after years of negative returns, thus allowing the balance to regenerate through interest and grow on a sustained principal during years of positive returns. This is the opportunity where cash value steps in as a valuable asset for the policy owner of a permanent life policy to use as a source of supplemental income, vital during years of negative returns. Being able to receive living benefits from a life insurance policy such as the accumulated cash value and annual dividends, allows the policy owner to enjoy financial freedom as well as the incentive of building wealth even in retirement. By choosing to receive these benefits, as opposed to systematically withdrawing more than the required minimum distribution from a qualified plan in retirement, allows the principal to be compounded in subsequent years that generate a positive return, thus, preserving the longevity and continuation of growth over the course of retirement. Having access to liquidity through a cash value policy gives the policy owner the ability to defer the liquidity of other investments within their portfolio, such as a qualified retirement plan, that can generate a higher rate of return. In conclusion, Down Markets Matter proves how cash value life insurance is a compliment to an entire balance sheet of assets and is a key component to the growth of sustainable and reliable wealth over the course of a lifetime.

Discussion: Leaving a Legacy

At the inception of sustainable investments, there needs to be reasonable expectations. The first expectation being, guaranteed growth of the principal balance over the course of a lifetime, and the second being that this capitalis readily available when needed the most. Sustainable investments are made through a defined, whole-picture planning approach including both insurance and investments. Financial advisor, Yusef

Salameh of Northwestern Mutual, aims to achieve the short and long-term goals of each of his clients and “empower people to spend life living.” He shares his expertise and strategy for building reliable wealth: “In a time where most Americans are not properly prepared for retirement, the topic of financial sustainability is of utmost importance. The biggest problem, other than individuals not investing, that I see in the world of retirement, is that most plans end up with a fixed income, meanwhile the cost of living rises. During retirement we are living longer than we have in the past. If in retirement, inflation is 3% and we retire at 60, in effect by the time you are in your 90’s the cost of living will have tripled. If you have a fixed income in a situation where the cost of living is rising, you guessed it, it does not amount to a sustainable situation. In order to keep up with the cost of living and ensure a legacy for your family, you need to have a solid financial plan. One that will guarantee, no matter if you incur a sickness and cannot work, that you can continue to save and invest. One that will not only keep up with the continuously rising cost of living but ensure there is more than enough to live off, so you can pass part of your wealth to the next generation. The absolute best way to do that is to make sure your income is protected, and that you invest in equities which have the ability to outpace the cost of living, with a cash reserve that continues to grow, and one that can withstand at least two market crashes. Having a financial advisor can help dramatically, especially at Northwestern Mutual where we have the tools to help with these types of inquiries. These are my thoughts on personal finance, which in effect, intertwined with global finances, debt, and tax advantages are all related and important to plan for” (Y. Salameh, personal communication, December 2, 2019). Having access to liquidity is essential to sustained wealth building. In effect, this allows money stored in high yield vehicles during the accumulation phase of investing, to continue to work for you, other than be withdrawn and do the work. Maintaining the capital balance earning compound interest and avoiding early withdrawal penalties are imperative for success in long term investment planning.

Cash value permanent life insurance is used to take the fear out of uncertain future events, or investment plans. It is a security vehicle that ensures a legacy for the policy owner, and is able to offer living benefits when needed the most, Advisor Today: National Association of Insurance & Financial Advisors Service Corporation examines the benefits of having leverage through a life insurance policy even while being well positioned financially, “Yet even clients who are financially well positioned to leave a legacy may be hesitant to trade liquidity for leverage through a death benefit. On paper, they know they have enough income and liquidity to live comfortably in retirement. But psychologically and emotionally, risks like market volatility, inflation and the rising costs of health care erode their confidence, driving their financial decisions regarding estate planning” (Griesemer). In this

case, policy owners of cash value permanent life insurance do not have to decide between leverage or liquidity. This is because both liquidity and leverage are offered within a cash value permanent life policy. With the cash value of the policy guaranteed to grow, an annual trend of growth established in the form of dividends, the policy is tied up with a death benefit amount that will be left to the chosen beneficiary when the policy owner becomes deceased. Furthermore, “Every client has a desired legacy — for people they love.

2a.

DOWN MARKETS MATTER

MINIMIZING IRA WITHDRAWALS IN DOWN MARKETS MAKES A BIG DIFFERENCE

Taking systematic withdrawals from a qualified retirement account, such as an IRA or 401(k), without considering the market's performance, can have a negative long-term effect on the value of the account. For example, when taking systematic withdrawals beginning at age 65, an IRA account that had a value of \$1.5 million in 1977 would have had a balance of \$1,471,672 after 20 years. In contrast, by skipping withdrawals during the years when the market was down, and instead taking only the required minimum distributions (RMDs)* and replacing the withdrawals with distributions from cash assets such as permanent life insurance[^] or bank savings, the IRA balance would have been preserved in excess of \$2,820,415.

Minimizing Withdrawals During Down Markets

This example is for illustrative purposes only. Past performance is not a guarantee of future returns.



[^]The primary purpose of permanent life insurance is to provide a death benefit. Using cash values to supplement your retirement income will reduce the benefit and may affect other aspects of your life insurance plan. Accessing the cash values through policy loans, surrenders of dividend values, or cash withdrawals will or could reduce the death benefit, possibly greater than anticipated, as a result of an unexpected taxable event. Assumes a non-Modified Endowment Contract (MEC).

*Required minimum distribution from the IRA under federal tax law.

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2b.

THE EFFECT ON THE VALUE OF AN IRA WHEN MINIMIZING IRA WITHDRAWALS DURING DOWN MARKET YEARS

IRA Value When Taking Systematic Withdrawals

Age	Balance at Beginning of Year	Withdrawal First of Year (3% Inflation Rate)	50/50 Portfolio Return (pre-Tax) 1977-1996	Balance at End of Year
65	\$1,500,000	\$20,000	-2.07%	\$1,351,434
66	\$1,351,434	\$23,600	3.98%	\$1,276,640
67	\$1,276,640	\$27,308	10.19%	\$1,266,392
68	\$1,266,392	\$31,127	17.56%	\$1,334,617
69	\$1,334,617	\$35,061	0.67%	\$1,297,593
70	\$1,297,593	\$39,113	27.02%	\$1,357,130
71	\$1,357,130	\$43,286	15.44%	\$1,401,201
72	\$1,401,201	\$47,585	10.71%	\$1,387,878
73	\$1,387,878	\$52,012	27.13%	\$1,571,256
74	\$1,571,256	\$56,573	16.87%	\$1,653,153
75	\$1,653,153	\$61,270	4.00%	\$1,551,483
76	\$1,551,483	\$66,108	12.35%	\$1,556,469
77	\$1,556,469	\$71,091	23.09%	\$1,704,153
78	\$1,704,153	\$76,224	2.90%	\$1,572,163
79	\$1,572,163	\$81,511	23.28%	\$1,714,326
80	\$1,714,326	\$86,956	7.54%	\$1,642,458
81	\$1,642,458	\$92,565	9.87%	\$1,592,997
82	\$1,592,997	\$98,342	-0.87%	\$1,383,429
83	\$1,383,429	\$204,292	27.96%	\$1,508,764
84	\$1,508,764	\$210,421	13.35%	\$1,471,672

From 1977-1996, there were only two years in which the market had negative returns. By not taking systematic withdrawals and taking only the required minimum distributions (RMDs) during those two years, you would end up with more than \$2,820,416 in assets versus \$1,471,672 had you taken the systematic withdrawals.

This is why it is critical to have assets not invested in the market (e.g., cash reserve, permanent life insurance*) that can be tapped into during the down market years in order to preserve qualified account balances.

IRA Value Without Systematic Withdrawals

Age	Balance at Beginning of Year	Withdrawal First of Year (3% Inflation Rate)	50/50 Portfolio Return (pre-Tax) 1977-1996	Balance at End of Year
65	\$1,500,000	\$20,000	-2.07%	\$1,351,434
66	\$1,351,434	\$0	3.98%	\$1,405,154
67	\$1,405,154	\$27,308	10.19%	\$1,407,994
68	\$1,407,994	\$31,127	17.56%	\$1,501,085
69	\$1,501,085	\$35,061	0.67%	\$1,375,176
70	\$1,375,176	\$39,113	27.02%	\$1,569,985
71	\$1,569,985	\$43,286	15.44%	\$1,646,910
72	\$1,646,910	\$47,585	10.71%	\$1,659,903
73	\$1,659,903	\$52,012	27.13%	\$1,916,981
74	\$1,916,981	\$56,573	16.87%	\$2,057,302
75	\$2,057,302	\$61,270	4.00%	\$1,971,778
76	\$1,971,778	\$66,108	12.35%	\$2,028,670
77	\$2,028,670	\$71,091	23.09%	\$2,285,008
78	\$2,285,008	\$76,224	2.90%	\$2,169,833
79	\$2,169,833	\$81,511	23.28%	\$2,451,104
80	\$2,451,104	\$86,956	7.54%	\$2,434,752
81	\$2,434,752	\$92,565	9.87%	\$2,463,491
82	\$2,463,491	\$98,342	-0.87%	\$2,246,915
83	\$2,246,915	\$137,848	27.96%	\$2,698,657
84	\$2,698,657	\$210,421	13.35%	\$2,820,416

Hypothetical example for illustrative purposes only. Beginning value \$1.5 million in IRA, S&P 500 historical return during 1977-1996 including dividends, \$100,000 withdrawal each year with a 3% inflation rate applied. \$0 withdrawal in years after negative return except for required minimum distribution. The 50/50 portfolio is represented by the S&P 500 index for equity and the Ibbotson Sinquefeld Aggregate Bond Total Return USD for fixed income. The S&P 500 index is a list of securities frequently used as a measure of U.S. Stock Market performance. These numbers do not reflect fees and charges associated with an actual investment. Historical S&P 500 returns from Bloomberg.

*The primary purpose of permanent life insurance is to provide a death benefit. Using cash values to supplement your retirement income will reduce the benefit and may affect other aspects of your life insurance plan. Accessing the cash values through policy loans, surrenders of dividend values, or cash withdrawals will or could reduce the death benefit, access to age-rated cost of insurance, or result in an unexpected taxable event. Assumes a non-Modified Endowment Contract (MEC).

*Required minimum distribution from the IRA under federal tax law.

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causes they care about and goals they want to make sure are achieved when they're gone. Legacy planning can play a part in any well-thought-out financial strategy for clients across the income spectrum and permanent life insurance can be an ideal tool for this purpose" (Griesemer). All in all, ensuring a legacy to be passed to the next generation can be much

more profound and lasting than just having wealth while alive, and this goal can be strategically attained through cash value permanent life insurance.

Conclusion- An Emphasis on Sustainability

In response to the proposition of building sustainable and reliable wealth, having a suitable, permanent life insurance policy in tacked is imperative to achieving total financial security. The benefits of a permanent life policy include the accumulation of cash value and the ability to earn annual dividends as a policy owner. Permanent life policy owners can retain living benefits because of these two important assets, all while having the security and stability of their death benefit, which provides the confidence that loved ones will be taken care of financially in the case of the policy owner's death. Furthermore, it is imperative for investors to have a firm understanding of the collection phase in retirement. This includes a variety of tax implications such as required minimum distributions, and the importance of continuing to grow and invest due to the continuous increase in life expectancy rates, as detailed in the discussion of Down Markets Matter.

The conclusion and findings of this research expose the opportunity cost of taking systematic withdrawals of a qualified plan during retirement, in years of negative returns. The findings also emphasize a high level of importance in having an allocated cash value balance of liquid capital, as well as earned dividends stored and growing annually. Having a holistic foundation including, cash value, dividends, and a death benefit gives a policy owner the freedom to spend their life living or have the confidence to make further financial acquisitions during their life in order to build wealth or a legacy, all while having a source of financial sustainability derived from the benefits of a cash value permanent life insurance policy.

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Brief Biographies about the Authors

Noah Prokash

Undergraduate student studying Accounting and Finance at the University of Wisconsin-Parkside. He has spent this last year interning with Snap-on Incorporated in corporate treasury. His main field of interest is in finance involving portfolio analysis, risk management, and securities.

Abey Kuruvilla, PhD

Abey Kuruvilla is an Associate Professor in the Department of Business at University of Wisconsin-Parkside. He also serves as Executive Director for International Affairs. He works regularly with his students on projects engaging industry. Northwestern Mutual is one of them.

YuesfSalameh

Financial advisor with Northwestern Mutual, specializing in tax efficient investment solutions, personal holistic financial planning, and small business financial planning. He has a long personal history and connection with Northwestern Mutual and brings his passion for helping others and his experience in education to strengthen the overall financial position of his clients.

A Study about Awareness of Paleo Diet in Tourism and Hospitality Sector to Sustainable Healthy Living

V.Ramachandran, I.M.Karthikeyan, S.Mohan Dhas

Madurai Kamaraj University, Rural University, Gandhigram University

Abstract

The Aim of the study is to create awareness about paleo diet among students and Peoples. The Paleolithic diet also called the paleo diet is based mainly on foods presumed to be available to Paleolithic humans. The paleo diet is the healthiest way you can eat because it is the only nutritional approach that works with your genetics to help you stay lean, strong and energetic. Research in biology, biochemistry, ophthalmology, dermatology and many other disciplines indicate it is our modern diet, full of refined foods, trans fats and sugar that is at the root of degenerative diseases such as obesity, cancer, diabetes etc. At its most basic, leading a paleo lifestyle means you are consuming foods found in nature. Following a paleo diet means you are eating mainly fish, grass fed pasture, raised meats, vegetables, fruits, roots and nuts. It excludes grains, legumes, dairy products, salt, refined sugars and processed oils. It leads to improvements in body's composition and metabolism when compared to other diet. The purpose of following a paleo lifestyle is to achieve better health, maximize your cross fit training and to look good. The dietary habits, lifestyle, sleeping patterns and so on were estimated in 100 Peoples. A questionnaire regarding the diet and lifestyle of the peoples was prepared and they were asked to fill the questionnaire with consciousness and the results were based on the percentage. The study shows that 67% peoples are aware about paleo diet. In spite of the knowledge, 60% of the peoples often eat foods from the cafeteria and 50% of the people eat both Vegetarian and non-vegetarian. Out of 100 peoples 75% of the peoples eat sugary foods. Thus it shows that people these days have a bad nutrition and are interested in paleo diet. 85% of them believe it to be the most efficient and 70% are willing to follow on their daily basis.

Keywords: Paleo diet, healthy diet, caveman diet, Stone Agediet, Tourism and Hospitality, Paleolithic humans.

Introduction:

The aim of the study is to estimate the effect of paleo diet and to determine current knowledge on the same and to create awareness on Paleolithic diet. The Paleolithic diet is called as paleo diet, caveman diet or Stone Age diet is mainly based on foods presumed to be available to Paleolithic humans. Like other famous diets, the paleo diet is promoted as a way to improve health. Limited data exist on metabolic effects on humans eating the die, though the available data suggest following this diet may lead to improvements in terms of body composition and metabolic effects as compared to the typical western diet. The diet is a fast growing trend and hence changes and awareness have to be made. Even though the diet is very diverse, most people don't follow correct diet patterns and tend to eat the wrong food. Therefore, it is imperative that awareness is generated about the diet.

What is the Paleo Diet?

The Paleo diet, also referred to as the Paleolithic diet, emphasizes an increased consumption of lean meat, fish, shellfish, fruit, vegetables, eggs, nuts, and seeds while excluding grains, legumes, cereals, dairy, processed foods, refined sugars and added salt. The Paleo diet has gained popularity all over the world, and in 2014, this diet pattern finds its roots in our human Paleolithic ancestors who consumed foods available from their environments through hunting, fishing, and gathering. Since humans followed hunter-gatherer lifestyles for many thousands of years, the advocates of the Paleo diet claim the human body became especially well adapted to this diet. However, the composition of the ancient Paleolithic diet varied greatly based on geographic region. Critics of the contemporary Western diet postulate that the rise in chronic illnesses such as diabetes mellitus, hypertension, and cardiovascular disease, is due to the influx of processed, refined, and sodium-heavy foods made widely available to the public, and that the nutritional quality of an ancestor-based diet may have therapeutic value in the treatment of chronic disease.

Benefits to consuming a Paleo diet

At first glance, it appears as if the Paleo diet would be healthy as it encourages an increased consumption of meats and vegetables, which may reduce blood pressure, low-density lipoprotein (LDL) levels, and reduce risk for congestive heart disease and stroke. The increase in consumption of fruits and vegetables also increases the dietary consumption of some essential vitamins like Vitamins A, C, and E. However, there is a paucity of scientific research supporting many of the claims associated with the diet. The Paleo diet discourages the consumption of sodium; short-term reductions in sodium may reduce blood pressure in some individuals. In addition, the Paleo diet eliminates the consumption of refined

carbohydrates, which in excess, can be associated with an increased risk for type 2 diabetes and congestive heart disease. Under short-term circumstances (i.e. 12 weeks), a Paleo diet has been shown to improve fat mass, insulin sensitivity, glycolic control and leptin in patients with type 2 diabetes.

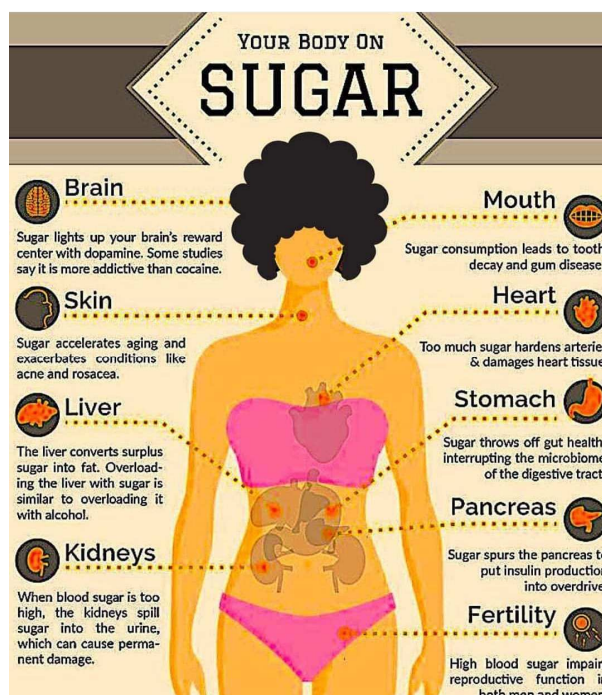
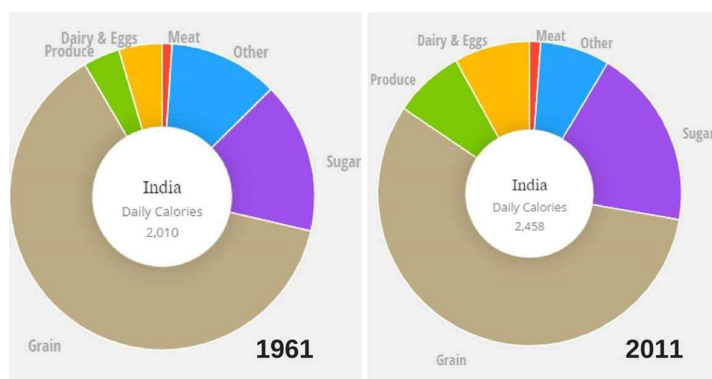
Adults and are inversely associated with all-cause and cause-specific mortality in adults. A review of four randomized, controlled trials examining the effects of the Paleo diet on factors related to metabolic syndrome reported that waist circumference, triglycerides and blood pressure were significantly decreased with consumption of the Paleo diet; HDL-cholesterol and fasting blood sugar were not affected. Positive effects were more drastic in the single trial that provided the meals to participants rather than ones that only gave dietary recommendation. The quality of this evidence was rated as moderate based on the grading Recommendation Assessment, Development and Evaluation Approach used by Team.

How does the Paleo diet compare to the current Dietary Guidelines .Adherence to a Paleo diet results in a macronutrient makeup that varies from the recommendations set forth in the Dietary Guidelines shows some notable differences in nutrients in reported hunter-gatherer diets, a contemporary Paleo diet, and Dietary Guidelines recommendations.

Protein: While evidence shows that the average late Paleolithic era diet has protein composition that falls within the current guidelines, the contemporary diet contains slightly more protein than the Dietary Guidelines recommend. The diets of hunter-gatherers were likely to be made up of 50 to 80 percent plant sources and 20 to 50 percent animal sources of protein, which would suggest that some groups of hunter-gatherers also fell outside the guidelines.

Carbohydrates: The contemporary Paleo diet falls quite short of the recommended carbohydrate intake compared to the Dietary Guidelines despite evidence that ancient hunter-gatherers had higher intakes of carbohydrates than what is suggested by the modern diet.

Fats: The contemporary Paleo diet exceeds the recommended fat intake despite lower fat content in ancient diets. This may be due to the animal protein; ancient game meat was vastly different than the domesticated animal protein consumed today in both total fat content and macronutrient content of the meat.



MATERIALS AND METHODS

The study was conducted among the college students and Peoples. The dietary habits, lifestyle, sleeping patterns and soon were estimated in 100 Peoples. questionnaire regarding the diet and lifestyle of the students and peoples was prepared and they were asked to fill the questionnaire with consciousness and the results were based on the percentage.

RESULTS

Paleo diet is considered to be the healthiest means of diet promoting the metabolism and reducing the ill effects of the people. The study was done among the students and peoples a questionnaire comprising regarding diet and lifestyle were prepared and distributed. The study shows that 67% students are aware about paleo diet. In spite of the

knowledge, 60% of the student often eat foods from the cafeteria and 50% of the people eat both veg and non veg. Out of 100, 75% of the students eat sugary foods. Thus it shows that people these days have a bad nutrition and are interested in paleo diet. 85% of them believe it to be the most efficient and 70% are willing to follow on their daily basis. The study shows that people are aware about the diet but people are addicted to unhealthy foods which they should avoid and prepare a proper schedule to maintain a balanced diet.

DISCUSSION

The study examined the knowledge of people about the paleo diet and found that people are aware about the paleo diet but lack some knowledge regarding it. The study helps people to understand about the harmfulness regarding the western diet and how it affects the health of the individual. It also shows people that paleo diet can transform the individual from unhealthy to healthy being and guides people to bring a balanced diet in their life which will be a means of improvising their lifestyle. Humans have come a long way in terms of most things – be it medical science, language, space exploration or even food options. However, believers of the Paleo diet think that all the progress made in terms of food isn't desirable, and we should go back to eating like our ancestors did thousands of years ago. Commonly referred to as the 'caveman diet' – paleo diet consists of food products that were available back in the days when cavemen used to live. Followers give up all forms of processed food that is usually unhealthy along with all forms of legumes and grains. People following the Paleo diet do not keep a count of their calories. However, some experts say that it can help people lose weight without trying. The fruits which are high in fiber combined with lean meats high in protein makes it good for those looking to lose weight. Besides these health benefits, following the paleo diet will also help prevent cancer, keep you looking younger and many more. This is because most fruits and veggies have nutrients, antioxidants and vitamins that are extremely healthy. Most cases of heart disease are caused due to unhealthy lifestyle and bad eating habits. Followers of the paleo diet stay away from most unhealthy foods and consume fruits and vegetables that cut risk of heart disease. 10,000 years was "plenty of time" for an evolutionary change in human digestive abilities to have taken place. Thus the study of paleo diet influences people to stay healthy, wealthy and wise.

We cannot change every unhealthy individual, since most of them are unhealthy. Unhealthy in their life style, food habits. Out come is most of them are running around hospitals due to obesity, Diabetes, Hypertension, Infertility, Micro and macro vascular complications due to diabetes, hypertension, obesity like heart attack, stroke, renal failure needing dialysis, kidney transplant, non healing ulcers in toes, legs demanding amputations

of their toes ,legs .knee pain in obese people ,since knee is weight bearing joint .sleep apnoea in obese people ,sometimes need BPAP mechine to sleep .Neuropathy in legs resulting in loss of sensation in legs ,numness or burning sensation in legs . Retinopathy and loss of vision after uncontrolled diabetes .Indigestion and gastric ulcer due to improper foods and eating at irregular timings.irritable bowel syndromes ,and so many auto immune diseases due to improper diet.

All the above complications start after 40 years ,now for some at early 30s.

What to do ????

Follow proper diet which suits you with the help of your physician , do exercise ,reduce stress ,have good sleep ,reduce junk food ,avoid alcohol ,smoking ---become healthy and set an example to your family ,friends ,relatives .

This is the only way -Be an example .

" Management standards of medical care in diabetes emphasizes on a patient centered, individualized approach is under girded by an acknowledgment that based on the current evidence that, a Low carbohydrate is both safe and effective used a medical nutrition therapy for upto two years in adults in order to lower blood sugar, reduce diabetes medicine usage and support weight loss"

Avoid junk foods ,

Avoid refined carbohydrates ,

Take healthy fat ,

Avoid deep fried foods ,

Provide kids healthy snacks at home fruits , sprouts , eggs .

Use healthy cooking oil like coconut oil olive oil ,ghee ,fat .

Take adequate protein (0.8- 1 GM per kg body weight)

Drink enough water 2-3 litres per day (except those with kidney ,heart failure)

Expose skin to direct sunlight-so that you will get enough vitamin-D

Avoid smoking ,alcohol .Eat enough vegetables ,greens to get healthy fibres .

Conclusion

அமெரிக்க
நரிழிவு சங்கம்
2019 பரிந்துரை

The American Diabetes Associations 2019 Lifestyle Management Standards of Medical Care in Diabetes emphasis on a patient-centered, individualized approach is under-girded by an acknowledgment that based on the current evidence, a low-carbohydrate diet is both safe and effective used as Medical Nutrition Therapy for up to two years in adults in order to lower blood sugar, reduce Diabetes medication usage and support weight loss.

CONCLUSION

The present study reveals the awareness about the paleo diet among the students and Peoples. The study shows that people are aware about the diet but people are addicted to many unhealthy foods due to the advancements made in the food technology which they should avoid and prepare a proper schedule to maintain a balanced diet. Further awareness about the paleo diet would improve the health of the people.

This survey based study concludes that paleo is comparatively better than our normal diet plans. Paleolithic diet is highly useful for overweight individuals. However the experts didn't accept with the benefits of Paleolithic diet.

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Applying Psychology Based Tools to Build Strong, Enduring Relationships

William Burnett

University of Wisconsin-Parkside

Abstract

International relations by definition start and depend upon strong and enduring personal relationships between individuals. In most cases, we establish such international relationships in pursuit of some explicit common higher purpose. Defining and applying a set of psychologically based tools to speed and enhance the building of such relationships in the real-world creates a scientific problem. You want these to be genuine real world relationships, but the real world environment contains innumerable, unpredictable, and often hidden influencing variables. That puts investigators into the position of being unable to create an environment that would allow the investigator to create controlled experiments or longitudinal studies with a reasonable set of identifiable causal variables. Nevertheless, we can attempt to combine and apply a bit of lab based experimental science to try to increase the likelihood of success in building such relationships deliberately and successfully and we heard back from roughly 5% of users, all of whom attribute their success to the tools. This paper lays out how the tools were formed based on pre-existing psychological experiments into behavior and decision-making. It covers what each tool should influence, how they are applied, and the expected outcome. It also explains why so many people were willing to use these tools in such a personally important situation as a job interview. One fundamental proposition comes from an almost universal belief on the part of recruiters and staffing experts, that the person who gets the job is the person the hiring manager likes the best. The anecdotal evidence strongly suggests the tools are effective in creating that important good personal relationship and that the science, from which the Peak Interview tools emerge, is correct in a real world application. (Burnett, 2010)

Keywords: Peak/End, Counterfactual Hypothetical, Self, Relationship

Introduction

This paper lays out how the tools were formed based on well-tested and established psychological experiments into behavior and decision-making. It covers what each tool should influence, how they are applied, and the expected outcome. It also explains why so many people were willing to use these tools in such a personally important situation as a job

interview. The anecdotal evidence strongly suggests the tools are highly effective in creating a good personal relationship in a very short time and in a first face-to-face meeting of the participants. In this research, we did not seek feedback directly, although a good deal of direct feedback came our way. Most feedback was given to third parties who then relayed it back to us. Thousands of people used the Peak Interview tools over the past nine years.

Related Work – The Peak/End Rule

The Peak/End ideas started when Gerry Kent published a paper suggesting that incidental procedures: “There was a closer association between remembered and expected pain than between remembered and experienced pain, particularly for those patients who scored high on the Dental Anxiety Scale.” (Kent 1985) Ninety days after patients had their dental procedure, they remembered the pain they’d expected to feel before their procedure rather than remembering the pain they actually felt. A few years later, colleagues Ed Diener and David Thomas reported that people who recorded their positive and negative moods through the day, were not able to correctly approximate their moods for the day as a whole. (Thomas 1990) They found that people tend to overweigh their negative feelings and under weigh the positive ones. The memory was different from the experience. In the end, memory is all we have. A little later, Dr. Donald Redelmeier and Princeton’s Professor Daniel Kahneman created an experimental study in which colonoscopy patients recorded their pain level every minute during the procedure. At the conclusion of the procedure, and 30 days later the patients recorded their memory of their overall pain experience. When Kahneman and Redelmeier examined the data, they found that one could reliably predict what that memory of overall pain would be based on the worst moments and the final moments of the colonoscopy. Although the duration of the procedures varied between 4 and 69 minutes, the length didn’t have any effect on the remembered pain. (Redelmeier 1993) This outcome triggered a question for Kahneman: ‘Could people be induced to make an irrational choice to endure more pain over less pain?’ Traditional economics suggest that people will rationally choose the most pleasure, and the least pain. However, Kahneman recognized that memory is all we have, and if a memory is not accurate it may cause us to make an ‘irrational’ choice based on that faulty memory. Next, Kahneman recruited his colleagues, Barbara Fredrickson, Charles Schreiber and Don Redelmeier, to set up several of experiments to find this out. (Kahneman 1993) what we will call ‘The water torture’ was one of them. Test subjects were asked to immerse one of their hands into a bucket containing seven liters of cold water (14°C) for 60 seconds. They were not told about the duration. Periodically during the 60 seconds the test subjects were asked to indicate on a ‘discomfort meter’ how much discomfort they felt on a scale of 0-14. Next, they dried off their hand on a towel, then performed a diversionary ‘personality inventory’ for

seven minutes. Next, they were instructed to place the other hand into the same temperature water. After 60 seconds had passed the temperature of the water was raised slightly. The subjects kept their hands in the water for an additional 30 seconds. The water was still cold enough to remain uncomfortable and again they periodically recorded their discomfort level. After another seven minutes wait, the subjects were asked, "For today's third trial, you can pick one of the previous two cold-water trials. Which one do you choose?"

Note that in the prior two water immersions the subjects were not told about the duration. In both, the subjects experienced the same 60 seconds of pain. However, in the second immersion they experienced an additional 30 seconds of discomfort. Ignoring this additional period of pain, nearly seventy percent of subject chose the more pain option for their third immersion. The reason was that it had ended with slightly lower level of discomfort and thus felt like a better experience. The scientists repeated this type of experiment in various ways including with loud sounds, pleasant and unpleasant video clips, etc. In the case of colonoscopies, a second study found that manipulating the very end of the colonoscopy to be the least painful part, resulted in a higher return rate in patients for the follow-up colonoscopy five years later. (Redelmeier 2003) Consistent across these experiments the results showed that it is our faulty memory that determines our decisions. Kahneman and his colleagues labeled the phenomenon as the 'Peak/End Rule'.

The brain invokes the Peak/End Rule for experiences consisting of a defined beginning, a consistent middle, and a defined ending. This is called an episodic experience. The Peak/End Rule states that the most intense moment, and the feeling at the end predict people's overall evaluation of the episode.

Some later researchers suggest that the change at the end does not always color the evaluation of the experience, particularly when that evaluation is an explicit cognitive evaluation. That is, when you ask someone to choose which loud noise experience they liked better you are triggering a cognitive evaluation rather than a subconscious one. The water torture experiment choice was based on a subconscious evaluation, as was the return rate for colonoscopy patients.

However, even those scientists who want to show contrary evidence to the Peak/End rule agree, "When the last part of an experience is particularly meaningful, and colors the perception of everything that preceded it, we would naturally expect it to disproportionately impact the overall evaluation." (Tully 2014) This insight is built into the methods used in the test-bed job-interview approach mentioned above. That method sought to combine the most

intense peak the interviewer experienced with the end of the interview. The approach called for creating a great deal of personal meaning for the interviewer with the ending peak.

Related Work – Self-talk

Nine years ago, when the Peak Interview tools were first used, no study existed that showed clearly what would create a strong peak for the hiring manager at the end of the interview. We speculated that the strength of peaks correlated with how active the brain was, since fMRI studies had shown increase activity in the ventral tegmental area was associated with increased pleasure. An active brain was desirable. fMRI scans had already shown brain activity during listening and brain activity during talking. Because talking involves the same brain activity as listening (the brain listens to our own speech to modulate the sound and correct flaws); plus more cognitive demands needed to formulate the content of speech; and far more complex motor control to articulate speech, the brain is more active when we are speaking. This suggested that we should attempt to create the end peak in the hiring manager's brain while the hiring manager was talking. Some scientific work had been done to suggest that the human reward system was more engaged during self-talk than at other times. And in the layman press were 'experts' like the TV commentator Barbara Walters who'd written about their experiences getting people to talk about themselves. (Walters 1983). We don't know how differences in cultures may affect this insight. But we do have some indications that it may be universal. One area of self-expression is manifest in the form of selfies (self-portrait digital photograph) It seems that nearly every population in the world, regardless of culture is prone to this behavior. Among the top 100 places in the world for posted selfies are: (Wilson 2014).

Table 1: Excerpt of Time's Listing of Most Selfies Cities

Makati City, Philippines	Oslo
Manhattan	Auckland
Petaling Jaya, Malaysia	Doha
Tel Aviv	Thessaloniki, Greece
Milan	Panama
Eskişehir, Turkey	Belgrade
Bali	Carapicuíba, Brazil

Table 1: Excerpt of Time's Listing of Most Selfies Cities

In 2012, researchers at Harvard university studied this self-talk idea using fMRI and other techniques. They found that, "Self-disclosure was strongly associated with increased activation in brain regions that form the mesolimbic dopamine system, including the...ventral tegmental area." (Tamir 2012). When people talk about themselves the pleasure centers of the brain are activated. We get pleasure from talking about ourselves.

The Harvard study went on to show that we benefit from this self-talk even when one is listening. Introspecting is rewarding. But when someone is listening, then “disclosing information to other people is more rewarding than merely introspecting.” (Tamir 2012). Thus, at the very end of the job interview we ask the hiring manager to talk about herself with this question: “You must have done some interesting things in your career. What’s the one thing you’ve done that you’re most proud of?” The candidate’s job is to be an attentive listener. No matter how alike the hiring manager’s story is to something the candidate did, the candidate’s job is to listen attentively. The key is to let the hiring manager have the moment. As the hiring manager is talking she is creating the peak, which will define the quality and value of the interview experience and she will end up liking the candidate more.

Related Work – The Counterfactual Hypothetical

As mentioned at the beginning, international relationships are usually formed around some higher goal. People are getting together to pursue some identified outcome. The stronger the belief that together the outcome is truly achievable, the more likely we will want to pursue it together. In the initial meeting, not only do we want to create a good personal relationship, but we want our counterparty to believe that together we can be successful pursuing the higher goal we’ve set for ourselves. A challenge we face daily, particularly as educators, is having confidence that our message is getting through. This could be our own fault, we’re not being clear. Or, our listeners could be lost in thought and not doing their jobs of paying attention. However, when we allow the message to be constructed while our student or counterparty is doing the talking, then we know it’s getting traction. That’s why we ask open-ended questions, or have students do presentations. Among the best open-ended questions to use in engaging the brains of our listeners is the Counterfactual Hypothetical. In the job interview we had candidates ask this question: “*Lets say, it’s now a year into the job, we’re going over my annual performance review, and say, I’ve had a truly outstanding year, I did everything you expected, wished for and more, what have I accomplished in this first year?*” Since all the candidate is asking is ‘what makes for outstanding performance?’ the hiring manager knows he or she must answer the question. Earlier in the interview the candidate would have talked about prior accomplishments, and the hiring manager would have talked about the job at hand. Those two sets of descriptions provide the narrative ingredients the hiring manager can draw upon to answer the question. It turns out that answering this question creates an interesting subconscious impact. (Burnett 2010). Perhaps the best known experiments into the behavioral influence of the Counterfactual Hypothetical was the work done by Gavan Fitzsimons and Baba Shiv.

They reported, “that even though such questions are purely hypothetical, respondents are unable to prevent a substantial biasing effect on their behavior.” (Fitzsimons 2001) In their two-part experiment they enlisted 377 undergraduate students. One part (a disguise for the real study) was about the effects of a change in environment on how consumers express opinions about products. Additionally the students were told they would get to choose a snack for participating in the study. In the test portion of the study, subjects were given either the control set of questions, or the test set of questions to answer.

Participants in both groups were asked to estimate how many times a month they consume cakes, pastries, and so forth. (Generally college “students have a fair knowledge of nutritional requirements for health.” (Abraham 2018)) Asking the question about eating frequency of cakes, pastries, etc., help to prime the students to be more aware of the health risks of food choices.

The test group got this additional question, “If strong evidence emerges from scientific studies suggesting that cakes, pastries, etc. are not nearly as bad for your health as they have often been portrayed to be, and may have major health benefits, what would happen to your consumption of these items? Please think carefully before you respond to the question. You will be asked to justify your response later.” Next both groups spent an hour doing the diversionary part of the study. At the conclusion of the hour they walked to a second room of the experiment. While in the hallway they were given a choice between two snacks — a piece of chocolate cake or a serving of fruit salad. 66 percent of the test group chose the cake, while only 25 percent of the control group did so.

All the study participants were asked if they believed the hypothetical about cake having major health benefits was true. All of them knew it wasn’t true. It turned out that just answering the counterfactual hypothetical was enough to cause more than twice as many students to select the less-healthy snack option.

The researchers then wondered what might amplify the influencing effect of the counterfactual hypothetical. Based on the earlier experiment they suspected it was both relevance and elaboration and tested both.

To test relevance, they posed two different versions of the cake question to groups of students. In the high relevance version, they suggested cakes have “major health benefits.” Sixty-six percent of subjects in the high relevance group took the cake. In the low relevance

condition, the cakes have “minor health benefits”. Just 36 percent of participants took the cake (slightly more than the new control group, which again came in at 25 percent). The more relevant the Counterfactual Hypothetical question is, then the more influence it has on subsequent behavior. (Fitzsimons, 2001)

Then, Gavan Fitzsimons and Baba Shiv collaborated with Sarah Moore, and David Neal to further investigate elaboration. Elaboration is the amount of work (thinking or talking) a person does in answering a question. The team used the health benefits-of-eating-cake experiment as they had before. The control group did not get the Counterfactual Hypothetical question and once again chose cake 25 percent of the time. Two subgroups became test groups. One was the high elaboration group. This subgroup received an additional instruction: “*Please think carefully before you respond to the question. You will be asked to justify your response later.*” The low elaboration subgroup answered the Counterfactual Hypothetical question without these additional instructions (Moore, 2012).

The Counterfactual Hypothetical question still changed the behavior in the low elaboration subgroup’s behavior. In the low elaboration subgroup 45.5 percent took the cake. For the high elaboration group (those who were told “*You will be asked to justify your response later*”) 69 percent of subjects took the cake. Fitzsimons and colleagues concluded that a Counterfactual Hypothetical answer will have more cognitive impact when the person answering the question experiences more elaboration and relevance.

Methodology

In looking for success in collaborative work for initiatives such as Sustainable Globalization, the popular press suggests there are other things we can do in that first conversation to help form the important relationships.

- Assume you have something to learn
- Think of it as a listen, not a conversation.
- When you do speak, be brief
- Use open-ended questions – How? What? Why?
- Be in the moment. Not 50%, e.g. checking for a text messages.
- Don’t pontificate- nobody cares
- If you don’t know, say you don’t know.
- Don’t compare your experience with theirs - it’s not about you
- Be the actor playing a person with almost unbounded interest in what the other person has to say.

These are intuitive insights and likely useful. Rather than relying entirely on intuition this paper presents three fundamental insights based on science: the Peak/End; the Self-talk; and the Counterfactual Hypothetical. Through these we derive two questions that help us form stronger personal relationship to support some collaborative work towards our higher purpose. First we use the Counterfactual Hypothetical. If you are using the Counterfactual Hypothetical question to help form strong international relationships, you might think about how to set it up. If you ask a question along the lines of: *“Now this isn’t true yet, but imagine it’s two years from today and we are meeting together. We’ve spent the last couple of years working together on our initiative and we’ve been remarkably successful. What exactly have we been able to accomplish?”*

In setting up a Counterfactual Hypothetical answer, it helps to give the person answering the question, a set of narrative elements they can use in building their answer. You can do this by preceding the question with a couple of stories. The stories will be about similar collaborations that turned out great, either from personal experience, or the experience of others.

When you get to the end of your conversation, after all house-keeping has been done, you ask the Peak End question along the lines of: *“It has been wonderful talking with you. Clearly you’ve done interesting things in your career. Looking back over your career, what’s the one thing you’ve done that you’re most proud of?”* Your job is to listen and encourage. Assuming they have a story or two to tell, when they are done, you end the conversation appropriately, for example reach out to shake their hand and say something genuine like *“That was wonderful, I’m so glad we got the opportunity to meet and I am looking forward to continuing our conversation.”* and then walk away. When you make their story the last thing that happens in your meeting, you create a big peak for them, and they will value your relationship more. Finally, something wonderful often happens when you ask the Peak End question. It is surprising how often people have done amazing and wonderful things in their lives, without fully appreciating how valuable their contribution is. We always encourage people with this suggestion, if you get this question yourself, don’t be bashful, tell your story in its full glory!

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Brief biography of author

Bill Burnett

Associate Professor, Adjunct and a retired executive who ran global operations for Diners Club International as well as driving the implementation of the company’s global strategic initiatives. He has lived in seven countries, and worked with local teams in over 60 additional countries. He’s written 5 books focused on psychology and business outcomes.

Can One Man's Trash Be Another Man's Medicine? Upcycling and Zero-Waste Initiatives bring Sustainability to the Ever-Growing Wellness Industry

Betsy Balkcom

dōTERRA Wellness Advocate

Abstract

The medicinal use of essential oils and herbs has been around for thousands of years, however with modern day globalization and an increased demand for wellness products, the need to manage the supply chain in a sustainable way has never been greater. The responsible production of essential oils intersects global business, sustainability and health, and is having positive economic benefits on both ends of the supply chain in a way that is able to flourish far into the future. Using dōTERRA as a model for exploring these benefits, this article will highlight a selection of plants that are sourced and distilled using sustainable innovative practices such as 1) upcycling organic waste by-product, 2) creating zero-waste closed loop systems for the distilling of plants into essential oils, and 3) developing a program for sustainable economic development in impoverished areas where oils are sourced, with an aim to show that sustainability only increases profitability in a market contingent on ecological viability.

Keywords: sustainability, upcycling, essential oils, labeling, coimpact sourcing

Main Conference topics: Innovation and Entrepreneurship, Sustainability, Environment & Risk Management

1. Introduction

Sustainability is a notion that emerged in 1972, but is now a buzzword attached to everything from cardboard packaging to fashion and travel. Simply put, sustainability means lasting power. But because the concept is broad and far-reaching, there are a myriad of ways to define it. Most popularly known as “the ability to meet the needs of present users without compromising the ability of future generations to meet their own needs, particularly with regard to use and waste of natural resources” (Basiago, 1995), sustainability can also be described as “a desire to create a society that is safe, stable, prosperous and ecologically-minded” (Caradonna, 2014), or simply the avoidance of depleting natural resources. One thing is certain: it is impossible to separate the concept of sustainability from the supreme importance of plant life.

Plants are the backbone of health, for the planet and the human body, and preserving the wellbeing of both should be the two-fold end goal of any effort in sustainable practice. The use of plants and herbs as medicine dates back to early human existence, and can be found throughout ancient religious and historical texts for worship and anointments, customs and rituals in birth and death, and health remedies ranging from stings, wounds, headaches, fever and ulcers (Petrovska, 2012). Essential oils are metabolites, compounds with very small molecules, which made their way from herbal medicine and became known for their biological versatility, such as antioxidant, antiseptic, diuretic, stimulating the central nervous system, sedative, expectorant, and digestive, which gives them a distinct efficacy for producing homeostasis in the human body, and also which are the very constituents that compose important drugs in western medicine like atropine, codeine, dioxin, morphine and quinine (Hosseinzadeh et al., 2015). Aromatherapy, specifically, is defined as the use of essential oils for therapeutic purposes (Garg, 2005), and is used to address a wide range of problems, including anxiety, depression, digestion, respiratory problems, and insomnia (“Demand for Natural,” 2019). Using plants to care for ourselves is an ancient practice that has been perpetual, and we are now seeing an increase in more sophisticated ways to do so.

This paper finds dōTERRA, a company responsible for sourcing over 95 different essential oils from plants in 40 different countries, at the intersection of global business, global sustainability and global health. dōTERRA started in 2008, registered annual revenues in excess of one billion dollars by 2015, was ranked by Forbes as number 10 in America’s Best Employers of 2016, experienced 30.0% growth per year and was named 2017 Verified Leader Award in the Global Aromatherapy and Essential Oils Market (“Verified leader,” 2018). With a presence in 148 countries and over five million customers worldwide, dōTERRA was acknowledged by the United Nations for its sustainability practices (Interactive Health System, 2016), and therefore serves as a model of leadership in the health and wellness market for using innovative practices in sustainability. Specifically we will look at that ever-expanding market and then the role of upcycling in the sourcing of plants, efforts in zero-waste distilling of essential oils, and long-term partnerships with farmers in developing countries – all part of a supply-chain program called Co-Impact Sourcing.

2. Theory

The natural health market is growing all the time. The world of wellness, also called CAM (complementary and alternative medicine), is increasing in popularity as a way of caring for physical, emotional and mental health by relieving symptoms of chronic illness, mitigating side effects of conventional medicine or simply in support of a “holistic health philosophy” which seeks to treat the whole body preventatively (Barnes, Bloom & Nahin,

2008). CAM includes but isn't limited to a range of modalities like biofeedback, aromatherapy, chiropractic, energy work and a whole host of diet-based therapies, and in his article "The Rise of Alternative Healthcare," Michael McQuaide explains that not only are there more alternative caregivers in the field, in the early 1990s Americans were spending \$14 billion on forms of alternative medical care; by 1997, the figure had increased to \$21 billion, and remarks, "there can be no doubt that alternative medicine is playing to a broader audience than at any time since it was pushed to the margins of respectable medicine in the early 20th century" (2005). Between 2002 and 2007 increased use was seen among adults for acupuncture, deep breathing exercises, massage therapy, meditation, naturopathy, and yoga. And although the same study found CAM use for head or chest colds to show a marked decrease from 2002 to 2007 (9.5% to 2.0%) (2008), the National Center for Integrative and Complementary Health, a government agency within the U.S. Department of Health & Human Services, found 2008 studies to conclude that use of CAM increased from 36% to 38.3% of adults in 5 years (2017). Government surveys show that 42% of Australians report using CAM treatments, specifically a \$2.3 billion expenditure in 2000 on alternative therapies, a 62% increase since 1993. Similar findings have been made in the United States and Great Britain. "In sociological terms, what appears to be occurring is a social movement featuring the increasing legitimacy of CAM within the healthcare services of Australia and other nations" (Coulter & Willis, 2004). Anbari and Mohammadreza published a similar study done in Iran on the use of CAM and when asked the reasons for the use of complementary and alternative medicine, respondents said their experience "has shown that, contrary to conventional medical therapy, complementary medicine therapies are safer and have fewer side effects" (2016). It has been estimated that in the United States, plant drugs constitute as much as 25% of the total drugs, while in fast developing countries such as China and India, the contribution is as much as 80%. Consumers have reported positive attitudes towards these products, in large part because they believe them to be of "natural" rather than "synthetic" origin, they believe that such products are likely to be safer than drugs, they are considered part of a healthy lifestyle, and they can help to avoid unnecessary contact with conventional "western" medicine (Hosseinzadeh, 2015).

As demand for complementary and alternative medicine has increased, so have a whole host of wellness products marketed to support a healthier lifestyle. PRN Newswire predicts by 2024-end, over \$22 billion worth of natural health supplements will be consumed across the US and Canada ("Supplements Market," 2017). The global homeopathy products market was worth \$3.8 billion in 2015. The market is projected to grow by a compound annual growth rate of 18.2% to reach \$17.4 billion by 2024. The global plant-based protein market was valued at an estimated \$4.16 billion in 2017. The market is projected to reach

\$7.38 billion by 2025. Essential oils are widely used in aromatherapy products. The global aromatherapy market was estimated to reach \$1.8 billion in 2018. The market is expected to grow at a CAGR of 10.4%, thanks mostly to the growing popularity and awareness of aromatherapy products. Demand for essential oils is projected to rise in the coming years, thanks mostly to increasing consumer awareness of the beneficial properties of aromatherapy products. The expected growth is also associated with the rising popularity of supplements, herbal and Ayurvedic medicine (“Demand for Natural,” 2019).

This growing interest brings with it an increase of labeling on products designed to attract consumers looking for transparency from their food and body products, mostly from the baby boomer generation, born between 1946 and 1964. Research shows that this generation is most concerned with both origin and safety of ingredients in supplements. (2019). 71% of European shoppers consider that the most important feature when purchasing supplements is that they contain no preservatives. This is reflected not only in “newer” products like healthy snack foods, supplements, and body products, boasting labels to show lack of pesticides, dyes, preservatives, parabens and GMOs (genetically modified organisms), just to name a few, but also attached to more conventional products like coffee, chocolate, meat, and vegetables. And along with labels that ensure product safety from undesirable substances, are labels that address the story behind the product – where, how and by whom was this product made? (Steinrücken & Jaenichen, 2007). If you haven't seen some combination of the following labels on your products, you will now: organic, fair-trade, free-range, grass-fed, hormone-free, gluten-free, no added sugar, no added color, nitrate-free, nitrite-free, no MSG, not tested on animals, and made with 100% post consumer recycled material, are promises attributed to everything from chicken nuggets to coffee to mascara. In his article “Consumer Rights to Informed Choice on the Food Market,” Beekman addresses key qualities of labels reflecting transparency, involvement, responsibility, trustworthiness and authenticity, saying people are “substantively concerned about public and personal health, genetic modification, animal welfare, the natural environment, international justice or regional foods” (2007). In short, if consumers are more willing to purchase something because of a label, it tells us something about what consumers value.

Chicago and Denver consumers in a 2002 study were willing to pay a 19% premium for steak labeled “U.S.A. Guaranteed: Born and Raised in the U.S.” (Umberger, Fuez, Calkins & Sitz, 2003). In a study specifically on perceptions regarding labeling and willingness-to-pay (WTP) in Malaysia, respondents were willing to pay more for food products with “No Added MSG” (Radam, Yacob, Bee & Selamat, 2010). Perceptions and

attitudes toward organic food products were studied in 390 consumers in Northern Thailand and results indicated that the main reasons for purchasing organic food products are an “expectation of a healthier and environmentally friendly means of production” (Sangkumchaliang & Huang, 2012). In a paper on consumers’ attitudes towards buying chocolate with sustainability labels, Svit Koren found a significant number of consumers in the world are indeed willing to pay extra money for chocolate products with sustainability labels, and concludes “we live in a time when sustainability issues play an important role in a consumer’s life” (2015). Over the last three decades, a number of public and private initiatives have started communicating sustainability-related information about food to consumers, introducing labels and logos in-store and on-pack, namely Fair Trade, Rainforest Alliance, animal welfare-related and carbon index measuring logos. Indeed, stress on the resources of our planet is a concern at the forefront of the conversation for those individuals and companies conscious of the growing population, mass consumerism and, therefore, waste. “The objective of these schemes,” writes Grunert, Hieke and Wills, “is to increase transparency along the food chain and inform the consumer in a way that can promote sustainable consumption” an idea that has been in play since the early 1990s, as Western European markets have witnessed the growing popularity of goods that seek to follow socially responsible practices that do not jeopardize the needs of future generations (2014).

3. Methodology and Results

3.1 Upcycling

When it comes to sustainable consumption, few practices are as innovative and exciting as upcycling, a process practiced by dōTERRA in the sourcing of a growing number of their essential oils. While *recycling* is the process of turning waste into a reusable material or product, *upcycling* is the process of transforming by-products, waste materials, useless, or unwanted products into new materials or products of better quality and environmental value, and is also known as creative reuse (Sinai, 2017). Truly “waste is a lucrative business,” and there is a an exciting win-win built in to the possibility of transforming trash into treasure (Wohlt, 1981) – for consumers, for suppliers and ultimately for the planet (Tuck et al., 2012).

In one of the best sources in my research describing the “life-cycle thinking” approach toward sustainable production and consumption, holding a myopic view of a single piece of the supply chain is discouraged, and instead calls for considering all agro-industrial waste for its potential:

It is estimated that around 140 billion tons of biomass from the agricultural sector are generated every year in the world [8, 9], and a considerable part is recognized as waste and not conflicting with food availability, e.g., leaves, roots, stalks, bark, bagasse, straw residues, seeds, wood and animal residues. Using alternative strategies to avoid additional losses and produce several high value-added chemicals could minimize the volume of non-renewable materials used today (i.e., roughly 50 billion tons of fossil fuels), enough to greatly reduce greenhouse gas emissions and dependence on non-sustainable resources. Therefore [...] all agro-industrial waste should also be considered for their chemical and material potential, as well as a source of energy (Zuin & Ramin, 2018).

Black Spruce

This brings us to the cold, northern boreal forest where Black Spruce grows tall and thin, and produces raw material for the lumber industry along with considerable organic waste. These trees seem to thrive in boggy swamps, chilling temperatures and never-ending winters. But these are optimal growing conditions for the Black Spruce to grow and thrive for generations. A member of the pine family and grown prolifically, the needles are blue-green and short (Lloyd, 2008).

Black Spruce is mainly harvested for the lumber, pulp, and paper industries. (Caryopsis, n.d.). When a tree is harvested, the trunk is quickly stripped of its branches and needles and left in piles that impede vegetation growth. Historically, no one has been able to capture additional value from the remnant branches and needles. Once the Black Spruce timber has been harvested and hauled away, a key partner goes in to gather all of the branches and needles that were left behind using a grapple arm excavator. Working together, doTERRA and The Forest Ministry has designed a forest management plan for harvesting Black Spruce. In an October 2019 interview, Jean-Claude Villeuementalks with doTERRA executive Emily Wright about his job to ensure that this plan is followed so that Black Spruce is harvested responsibly and sustainably:

We don't cut trees, there are already industry cutting trees for construction work, by the rule of the government and the government makes it sustainable. We take a pile of branches that the logging industry doesn't want and it's left in the forest as a pile. Nature doesn't like it because it gives less space for the vegetation to grow. Everybody wins because we take something nobody likes and we make a nice product. ("Black spruce sourcing," 2019).

These leftover materials are then steam distilled for a powerful essential oil with antimicrobial and antioxidant qualities that are excellent for respiratory health (Poaty, Lahlah,

Porqueres, & Bouafif, 2015). This is just one example of how essential oils are literally turning trash into medicine.

Green Mandarin

Now we go to the hot, humid climate of Brazil where the mandarin tree grows well. The story of Green Mandarin essential oil is also encouraging for consumers who value a sustainable supply chain. One of the sustainable efforts behind Green Mandarin essential oil has to do with cash flow for workers. dōTERRA cooperates with a network of Brazilian citrus farmers that use the income from their green mandarin harvest to cover farming costs for the year. Later, their fully ripened harvest, which is red mandarin, is mostly for profit. This creates a sustainable, steady income throughout the year for small and large-scale growers. ("Green Mandarin," 2019.).

The second sustainable practice in the production of Green Mandarin essential oil is the upcycling of discarded raw material. Mandarin trees are thinned up to three times in order to maximize harvest yield, which provides another opportunity to capitalize on organic waste, as hand thinning increases net returns by 20% to 40%. Mandarins are sometimes thinned up to three times, first by removing small, blemished fruit, later to remove sunburnt fruit, and possibly a third time for crop yield (Falivene& Hardy, 2008). Approximately 60-70% of the green fruit is removed from the tree during this thinning process. In the past, this unripe fruit was discarded or left on the ground to decompose, as the fruit was too tart to be enjoyed. However, a unique essential oil is contained in these young, unripe fruits. Now, that unripe fruit is being used to produce an essential oil with one of the most unique chemical and aroma profiles in the citrus category. The cold-pressed green rinds yield a fragrant, uplifting oil distinct from that of fully ripened red mandarins. Farmers are paid twice on one crop, and dōTERRA sources two essential oils with unique chemistry, one of which is otherwise organic waste, making this one of the most eco-friendly essential oils on the market ("Green Mandarin," 2019).

Green Mandarin is a unique citrus oil because of its chemical structure, mainly composed of γ -terpinene, a constituent studied for its effects on e.coli, pneumonia and candida, as citrus oils are incredibly cleansing and antibacterial in nature (Drobac et al., 2017). Aside from its biological benefits, γ -terpinene also contributes to the distinct, sweet aroma of Green Mandarin and offers a wider range of benefits than most other citrus oils and may be preferred for cosmetic use because it is not photosensitive, unlike other citrus essential oils, and can be used in sunscreen, bug repellent, moisturizer and lotions.

Douglas Fir

Another upcycling story is the environmentally friendly solution of harvesting Douglas Fir trees in New Zealand for the use of essential oil, which helps alleviate a very serious problem. Douglas Fir, or *pseudotsuga menziesii*, is the second tallest conifer next to the redwood, looming at hundreds of feet tall, and characterized by fir needles that provide a delicious aroma. In North America where Douglas Fir is indigenous, about 70% of U.S. timberland is privately owned, and there is little collaboration from landowners about the specifics on a sustainability program (Haynes, 2005). But in New Zealand, Douglas Fir has become an invasive and aggressive species, where it was brought for the lumber industry but is now an environmental threat to the surrounding landscape (Ronch, Caudullo & Rigo, 2016). Due to the climate and other environmental factors, the Douglas Fir tree grows 25 times faster in New Zealand than it can in North America, making its roots fast-spreading and uncontrollable, and causes the ground around the trees to become barren—making it impossible for other native New Zealand plants to grow (“Douglas Fir,” 2019). Each year public agencies spend millions of dollars trying to control the spread, while some individual farmers are spending hundreds of thousands of dollars (Peltzer, 2014).

“Working with the government there,” says dōTERRA CEO David Stirling, “they think this is an incredible solution to solving a very difficult environmental problem” (“Sourcing Douglas Fir,” 2016). Production Partner Michael Sly explains that the trees are harvested at an age from five to seven years old, before the tree has a chance to produce cones and exacerbate the issue. “We’re reducing the problem, we’re having a great ecological impact and we get this beautiful essential oil,” concludes Dr. David Hill, dōTERRA’s Chief Medical Officer (2016). Using Douglas Fir trees for essential oil provides a more environmental alternative to simply cutting trees down. Through a responsible sourcing partnership, dōTERRA is able to keep these trees from going to waste—making good use of an otherwise invasive species.

Douglas Fir essential oil has a purifying, uplifting and refreshing fragrance and is often used in the Christmas tree industry because of its fresh, woody aroma reminiscent of the outdoors. Along with an inviting, refreshing scent, Douglas Fir oil can help purify the skin when applied topically. beta-Pinene, the main chemical constituent in Douglas Fir, is known to help reduce anxious feelings and has shown in experimental research the potential for helping improve mood (Dorman, 2000).

3.2 Zero Waste

Zero Waste is a philosophy or ideal, rather than a hard target, that means “designing and managing products and processes to reduce the volume and toxicity of waste and materials.” (Zero Waste, n.d.). Examples of zero waste initiatives in business include a return system for empty detergent and cleaning bottles to a dispensary for refills, rather than buying brand new products. Or tax reduction in Sweden that allows citizens to claim back half of the labor cost on income tax for repairs of major appliances like dishwashers and refrigerators that amass in landfills. Or an initiative to encourage switching to reusable cloth diapers which uses less than half the water and need only one eighth of non-renewable and 90% less or renewable materials to produce. Of course these are small-scale ways individuals and households can alleviate the amount of overall matter disposed.

Another way for individual decisions to have a big impact is purchasing power. When consumers do business with companies committed to forward-thinking sustainable practices in the supply chain, more and more companies will be incentivized to redesign inefficient and wasteful systems. We have seen the sourcing of Black Spruce essential oil to be an elegant case of upcycling, but it is also a model of a zero waste initiative seen here in the distilling process.



Figure 1. This rendering shows the closed loop distillation of Black Spruce essential oil.

When steam passes through plant material, aromatic compounds are released. This is known as the steam distilling of essential oils. In the case of Black Spruce, the distillery is located adjacent to a local power plant, which creates power by burning wood byproduct from the logging industry. This power plant creates the steam used in the distillation process for these oils. In exchange for the steam, the remaining raw materials are then processed by the power plant post-distillation, creating an entirely closed loop cycle with net zero environmental impact (dōTERRA, 2019).

dōTERRA is continuously working to close the loop in the production of a number of essential oils. In the high mountains of Nepal, Wintergreen essential oil is distilled over a basic campfire and tray setup, and much of the wood matter that powers the fire is from the wintergreen plant itself. In Canada, Arborvitae is known as the tree of life, and every single part of the tree is used for some practical purpose. The lumber is used for framing, shake shingles or furniture, and dōTERRA partners with the lumber mill, upcycles the pulp, distills the pulp into Arborvitae essential oil and then returns the post-distilled pulp to a paper mill for more production (dōTERRA, 2014). This type of interest, commitment and continual development of sustainable sourcing practices comes from the deep conviction that our responsibility in business is to keep the future in mind, and can only be realized when mutual, long-term partnerships are formed. This is the guiding principle of a supply-chain program dōTERRA calls Co-Impact Sourcing.

3.3 Coimpact Sourcing

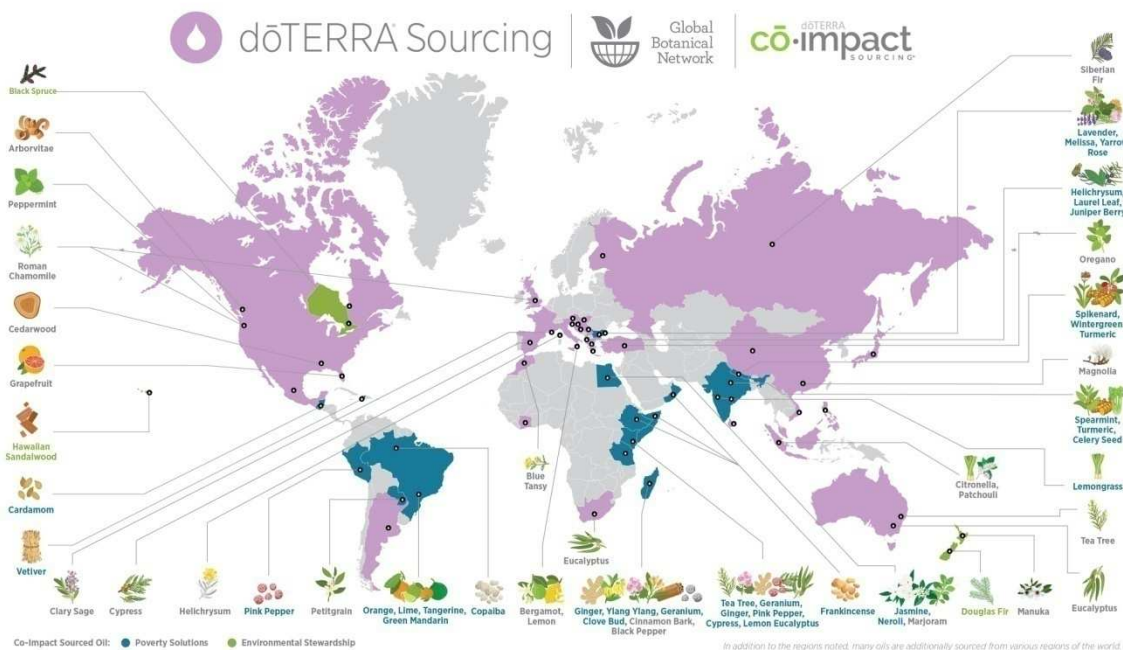
In a nutshell, Co-Impact Sourcing is about creating shared value along the supply chain. This is done by ensuring quality, securing quantity with the Global Botanical Network of essential oil growers and distillers, and formalizing and maintaining partnerships (Global Botanical, 2019). This method of sourcing essential oils combines strategy, sustainability and benevolence, ensuring a top-notch product and long-lasting business partnerships in impoverished, rural communities. Developer of the program Tim Valentiner says, "As dōTERRA continues to experience incredible growth we realized we needed to focus attention particularly on our oil sourcing strategy in order to meet our growth needs but also to be able to give back in a meaningful way" (Thorpe, 2016). The main objectives when considering a region for this program are one, growing conditions and biological complexity of the essential oil plant species, which means a pure and natural product for maximum therapeutic results; and two, the well-being of farmers, distillers and local communities.

Of the 40 countries from which dōTERRA essential oils are sourced, 23 of those are considered developing countries where Co-Impact partnerships exist, like Nepal, Madagascar, Guatemala and Somaliland (2016).

Figure 2. A map of dōTERRA essential oils and their corresponding country of origin using Co-Impact Sourcing initiatives.

A list of 8 Co-Impact Sourcing Guiding Principles succinctly illustrate dōTERRA's commitment to these working relationships:

1. Generating Jobs (122,000 to date)
2. Providing Fair and On-Time Payments (same day payment to farmers, bonuses to farmers producing highest quality oils, quality control laboratories enables on-site testing)
3. Building Supplier Capacity (agricultural and vocational training, cardamom drying facility empowers farmers to add further value to their crop, nursery to optimize



plants for oil quality and yield, ongoing training

on seed selection, harvesting and distillation, total supply chain investments to date over \$110 million)

4. Sustaining Long-Term Partnerships (contracts with farmers guarantee a fair and transparent price, same day payments to farmers, women have sustainable long-term income opportunities)
5. Ensuring Fair Labor (ensuring fair standards in treatment of individual and groups of workers)

6. Promoting Cooperatives (organizing farmers in localized areas to promote sustainable crops)
7. Ensuring Environmental Stewardship Conditions (dōTERRA complies with international environmental regulations and is committed to reducing carbon footprint)
8. Facilitating Community Development (clinics, schools, natural disaster relief through dōTERRA's Healing Hands Foundation) (Coimpact, 2019; Moon, 2019).

On a Co-Impact Sourcing trip to Nepal in April of 2019, I was able to personally experience the gravity of this program from start to finish in the sourcing of Wintergreen essential oil. This included the harvesting, weighing, payment for harvesting, distilling, and community partnerships surrounding Wintergreen essential oil in Bagmati, located in the high mountains just outside the busy city of Kathmandu. The harvesting of wintergreen is a job opportunity for people in rural communities that would otherwise have to go into the city, and are paid on the spot for their efforts. In an area where crops were devastated after 2015 earthquakes, dōTERRA brought in aid with their non-profit Healing Hands organization, building the first new school in the area after the disaster, over 600 new desks, and helped 20 communities put wintergreen distillation units into production (Thorpe, 2016). Also in those communities dōTERRA partners with Days for Girls, an incredible organization providing education and resources for women about menstruation, conception and female hygiene (Days for Girls, n.d.). These types of Co-Impact initiatives have multi-faceted benefit for growers, harvesters, distillers, residents, marketers and consumers.

3.4 Certified Pure Therapeutic Grade labeling

The final piece of dōTERRA's commitment to an exceptional product is their CPTG (Certified Pure Therapeutic Grade) label which brings peace of mind to consumers by ensuring that each bottle of essential oil is free from fillers, contaminants, or isolated constituents from other oil compounds (a common way for essential oils to be adulterated, stretched, cheapened and, ultimately, rendered less effective). dōTERRA has even published a database called Source to You, where consumers can pull test results of each bottle of oil purchased based on lot codes, pushing transparency to the forefront of an industry that is virtually unregulated in its claims for purity and potency. The key questions to ask when considering effective essential oils are: Where are the plants sourced? Are they tested by independent labs with published results? And how are the oils stored and handled? ("Essential Oil Purity," 2019). With Co-Impact Sourcing and CPTG as guiding philosophies, dōTERRA answers these questions with flying colors.

4. Conclusion

doTERRA's success thus far is directly related to an increased popularity in natural and alternative medicine (and therefore a consciousness regarding what consumers put in and on their bodies), demand for quality wellness products reflected in transparent labeling, and a heightened ethical awareness consumers have of the story behind a product – the beans behind the mug of coffee, the factory behind the pair of jeans, and the farm behind the bottle of essential oil. In other words, sustainability has never been more in fashion than it is right now, and it behooves companies to demonstrate proactivity in the marketplace by “greening up” – not just for the kindness to the environment but also for profitability. Every measure that can be taken by companies today, whether switching to eco-friendly and/or toxin-free ingredients, redesigning flaws in models that produce too much waste, or committing to partnerships that raises quality of life at the source of the supply chain, gives a company or product the “X-factor” of true sustainability: good for the body and good for the environment. This is something a growing number of health-conscious consumers will vote for with their purchasing power, which means it is also good for business.

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Reverse Supply Chain (RSC) in Electrical and Electronic Equipment Waste (WEEE): a Qualitative Analysis

Francesco Frontera, Abey Kuruvilla and Mariacarmela Passarelli Università della Calabria

University of Wisconsin Parkside, Università della Calabria

Abstract

A form of waste often overlooked in the general discussion of sustainability is electrical and electronic equipment waste (WEEE). Companies that produce electric goods, usually consider products that have reached the last stages of their life cycle as a loss and therefore as something that cannot be reused. The literature suggests that this perception can be addressed through Reverse Supply Chain (RSC), which encourages companies to take back old products and apply remanufacturing in order to reduce the creation of waste and to reduce costs. In this research, we begin with a literature review followed by a qualitative explorative analysis, with the purpose of identifying the main factors that encourage firms to apply RSC. The paper also discusses the results of an interview questionnaire conducted with a major producer of Industrial goods in the Midwestern United States with global operations.

Keywords: Pollution, WEEE, remanufacturing, Reverse Supply Chain

Introduction

Growing demand for high-tech products has also resulted in increased e-waste (Tansel, 2017). The term e-waste covers all types of electrical and electronic equipment (EEE) that could enter the waste stream. "Electronic waste, also called e-waste, represents all electronic and electrical equipment (EEE) and its components that have been discarded by the owner without the will to reuse them." (Step, One Global Definition of E-waste, 2014). The growth of this type of waste is due to the expansion of the EEE market, not only because more and more products require electricity, but also because we are viewing a growth of the middle class in many countries of the world and this means that many parts of the world are filling the so-called "digital divide".

EEE consists of both hazardous materials and rare materials. With regard to hazardous materials within an electronic device, the most dangerous materials are heavy metals such as mercury, lead, chromium and cadmium and other very dangerous chemicals. The presence of these materials inside the device can cause alteration of mental development, damage to the lungs and the liver. This is also demonstrated by the fact that up to 60 elements of the periodic table can be found inside a smartphone. In addition to the

presence of hazardous materials, EEE is characterized by the fact that they are also composed of rare materials. They contain gold, silver, copper, platinum and palladium but also contain valuable bulky materials such as iron and aluminum. Consequently, the correct treatment of e-waste takes on an important role in such a way as to: reduce the negative effects on health deriving from the presence of hazardous materials; try to get the highest value possible from the presence of precious materials.

Within this context, the concept of Reverse Supply Chain is inserted, which represents a 2 useful tool to try to achieve the two objectives described above. As the name suggests, the term Reverse Supply Chain (RSC) is the opposite process of Supply Chain: so the product comes back from the customers to the suppliers.

The purpose of this paper is to analyze how a multinational, i.e. Case New Holland Industrial, puts into effect the concept of Reverse Supply Chain.

Literature review

The term supply chain (SC) refers to all parties involved, directly or indirectly, in fulfilling a customer demand (Chopra and Meindl, 2007) This includes supplier, manufacturer, distributors, retailer, and customer. In addition, all the functions and departments within each organization are included in the SC. Supply Chain Management (SCM) is the coordination between all these parties and functions for the advantage of the whole supply chain. This coordination requires flow of products (in the direction of customers), funds (in the direction of suppliers) and information between different parties. Information sharing between different parties of SC supports better decision making for the benefits of all players. The application of Information Technology (IT) improves the performance of supply chains through increasing the accuracy and speed of information sharing. Some scholars have analyzed impact of IT on the company performance in reverse logistics. They investigated the current IT types used and information sharing on the performance of the reverse logistics. Their results show that the use of IT is necessary to improve the reverse logistics performance and this improvement is a function of the IT attributes. However, there is no specific IT that leads to better performance (Olorunniwo and Li, 2010).

It is important to note that in the reverse supply chain literature besides the term reverse supply chain the reader may meet other terms such as reverse chain, reverse logistics or reverse distribution that are referring to approximately the same research area. As the name suggests, the term reverse supply chain (RSC) is the opposite process of SC: so the product comes back from the customers to the suppliers (as shown in the Figure 1).

This opposite flow occurs for many reasons: to return, repair, or recycle a product. The first two reasons come from obligations of the firm towards customer satisfaction and provide feedback about the products quality. Customer satisfaction leads to an increase of reputation of the firm and market value of its products which increases the loyalty of the customers towards the organization. (Ali, Alvi & Ali, 2012) This results in profit increase, generates a more stable long-term demand and maximizes long-term success. Recycling was found to be beneficial to the firm in two directions: it reduces the amount of required raw materials so reduces the cost, and at the same time helps in the proper disposal of some pollutant materials which also develop its 'green image' with sustainable actions . This is also linked to the concept of Corporate Social

Responsibility and therefore the respect, by the company, of the environment that surrounds it. From a customer perspective, the products returned are shipped back to repair points for reparation and maintenances. As a result, consumers are free from the risks of buying broken, non-functioning and unsatisfied products. Generally the RSC consists of five main processes, as shown in Figure 1, namely product acquisition, reverse logistics, inspection and sorting, remanufacturing and distribution and sale. Regeneration is a very important process, as it can be a viable way to give new life to EoL products. During inspection, if the condition of the product is acceptable, it will be subjected to a recycling process, otherwise it cannot be used and therefore will be discarded. Within the reverse chain, the most important phase is the remanufacturing (in turn divided into disassembly, cleaning, inspection, reconditioning, reassembly and testing). It is an industrial process that allows companies to return EoL products to their initial conditions or update them with new specifications. In addition, it allows 3 manufacturers to reuse materials and components and to improve the quality and performance of their products by bringing significant economic benefits. In fact according to current estimates remanufactured product are valued to over \$ 100 billion per year (Abbey, 2017).

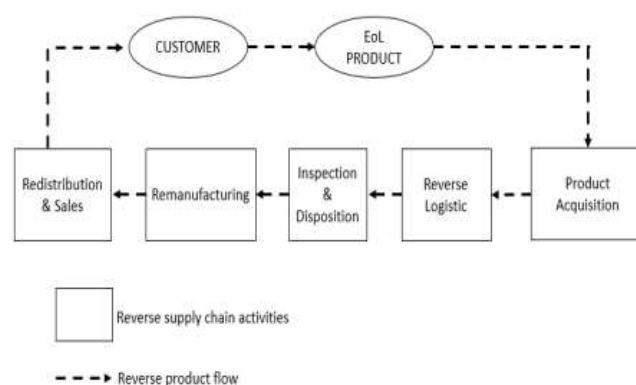


Figure 1: Reverse Supply Chain activities

To create an RSC, the most arduous challenge is to be able to define a clear chain structure to ensure that costs remain low and do not weaken the efficiency and effectiveness that characterize the organization. From the analysis of the literature (Doan et al., 2019) in the field of e-waste RSC, some research gaps have been identified. This research details some of the operational challenges and aspects of EPR application (Leclerc and Badami, 2019). Very little research has been undertaken on this specific subject to date, and this case study aims to illustrate typical challenges in EPR application, from a point of view of a producer responsibility organization (PRO). Extended Producer Responsibility (EPR) is a sustainable environmental management principle, which emphasizes innovation in five perspectives, namely policy, product, process, supply chain, and technology (Cai and Choi, 2019). It is considered as a useful practice for e-waste management. This practice can share the responsibility with companies, consumers, and smaller waste collectors and expand the reach of waste clean-up operations creating a formal structure for a profitable and efficient e-waste management program. EPR can be implemented well in the long term only if effective monitoring of the collection process and roles of all the stakeholders are clearly defined in an integrated manner. This is an issue that we are going to investigate in the qualitative analysis. This article focuses on how the reverse supply chain is organized in the perspective of EPR.

Empirical qualitative analysis: the CNH Industrial experience The empirical analysis proposes a case study on CNH Industrial; it provides a unique opportunity for insight: CNH Industrial is a leader in the design, production and sale of agricultural equipment, construction machinery, trucks, buses, special vehicles and power units. Through its 12 brands, the company owns 66 production facilities, 54 research and development centers (R&D), a number of employees equal to 64.625 and is present in around 180 countries. CNH Industrial aims to become a global leader in next-generation industrial equipment and commercial vehicles. The company is arguably one of very few experienced and able to respond to EPR in multiple countries. The qualitative analysis was developed by collecting secondary data from reports and from the firms' web site. In addition, to understand the company better and learn deeper perspectives, some interviews were conducted with Prasanna Iyer, Director of Supply Chain & Logistics of CNH Industrial in Racine (Wisconsin) and with Nate Burgers, Head of CNH Industrial Remanufacturing (between October and November 2019).

The study provides an overview of how it designs, creates and implements its collection and recycling services at various stages, in the perspective of EPR. The study provides an overview of how CNH manages and administers its activities and how it designs, builds, and operates its collection and recycling services at various stages. The findings of

the case study are then discussed further in relation to wider issues of defining a producer's responsibility.

Reverse supply chain in the perspective of Extended Producer Responsibility

Generally there are three main issues to manage a firm based on EPR, and that can be broadly referred to design, creation, and operational activities (Mayers and Butlers, 2013). Specifically:

- During the design phase the firm must define a number of details important to planning and setting up collection, treatment, and recycling processes, including establishing the collection network needed, determining conditions required to access waste at collection points, evaluating the available recycling services and prices.
- In the Creation stage, the firm must establish collection, treatment, determining collection arrangements and containers along with the organization of reverse logistics process.
- A number of key operational activities must be managed and maintained, by optimizing overall activities to meet Cost and Key Performance Indicators.

Each stage is described in further detail below, using CNH Industrial as the case study example.

Design phase in CHN Industries

CNH manages three types of returns: the first type is represented by the return of the spare parts that the company sends to the various dealers, but these pieces go back for different problems; the second type consists of spare parts that the dealer orders from the parent company to repair a product / vehicle handed over to them by the final consumer; the third type occurs when the suppliers, American or not, send cores to the company. The first type of returns represents the highest percentage of returns that CNH manages, while the third type occurring very rarely. In fact, once CNH receives cores from its suppliers, it tries to rework the part or reuse the part, as it would be very expensive to return the core to the supplier. As a result, this type of return occurs very rarely.

Creation phase in CHN Industries

During the creation phase, there are three main issues to deal with:

- when the dealer intends to return a part, he must promptly inform CNH. It is not in the company's interest to get the part back, as there are additional costs, so they try to encourage the customer not to return the core, giving them a discount.
- Once it is established that it is necessary to proceed with the return of the core, 5 the next step is to give the approval for the return itself and put the dealer in contact with the transport service.
- Finally, the last step is to provide the dealer with information regarding where to ship the product. In this case, depending on the urgency of the requested part, the shipping deposit varies and this decision is the most important within the process.

All of the creation process is managed by the operational teams and sales representatives, who sell the parts to the dealers and collect the feedback from the dealers themselves.

Other issues regarding how the reverse logistics process works; basically, CNH uses two types of transport depending on the urgency of the situation. If there is no excessive urgency, they prefer to use the normal transportation options to get the product back. Instead, if the dealer urgently needs to get back the core sent to be repaired, as without it the customer cannot use the vehicle, CNH decides to ship a replacement core with the fastest and most expensive transportation option. We note that in terms of shipping from the company to the dealer there are numerous transport options, while in the opposite case, from the dealer to the company, they try to use the least expensive transport option. Furthermore, the shipping process is outsourced to third-party companies, such as UPS and FedEx, and is totally covered by CNH, which uses very advantageous contractual rates that are certainly lower than those that the dealer would have if he started to negotiate independently with UPS or FedEx.

Also some network of facilities are involved in the reverse chain. Specifically, *“we have the dealer and we have spare parts depots that serve the dealer. On deliveries’ side it is mainly the depot using UPS if it is coming from the US; if it is coming from Canada it could be UPS or it could be something else, and it goes to the nearest depots. Which is very different for the forward supply chain, depending on the urgency it could be going from the dealer. Delivery is very simple because there aren’t many services that we have set up”* (Director of Supply Chain & Logistics of CNH Industrial in Racine (Wisconsin)).

Operational activities in CHN Industries

We investigated the real meaning of the process of remanufacturing for CNH. For the company, it is the complete disassembly of a part into its components that make it up and

they then take those parts and verify them against the original specifications that they were designed. So, in CNH, the remanufactured products aren't just repaired or rebuilt. The first step for remanufactured products is the teardown area. The units are disassembled and parts that are not reusable are thrown out. The old units are completely disassembled with housing and interior parts separators, where items are all thrown out and replaced with new ones. This teardown process is a competitive advantage because few remanufactured products get down to that level of detail. For the parts that are kept, a thorough cleaning is conducted. The units undergo a cleaning process that removes dirt grime and oil because any abrasive metal or debris could ruin the part. It's a very labor-intensive process but important, because a perfect assembly with an imperfect part would still cause problems. Parts then go to inspection stations to determine if they can still be used. Those parts that can't pass inspection are thrown out. Parts then get a final cleaning, some in an ultrasonic machine, others in baths and other washers. When careful inspection shows a unit is worn, it goes to a machine to restore the exact original equipment clearances. Restoring salvaged parts to original specs is a fundamental part of the remanufacturing process. Once all the salvaged parts have been cleaned, inspected, ground balanced, recalibrated and re-inspected, it's time for reassembly. The newly remanufactured unit gets one more inspection and the inspection sheet is signed. Finally, it's packaged and ready for shipment. In terms of processes, there are three main steps.

Figure 1: The remanufacturing process in CNH



In a perspective of EPR, when the dealer has to return a part, the first thing they do is to inform CNH that they want to send the part. It's not in the best interest of the firm to get the part back because there are additional costs, so CNH tries to get them to do something, give them a discount or an incentive so that they can re-use the part somehow. If they feel that it's warranted to get the part back, then CNH gives them the approval and they can work with one of the service providers of transportation. They use an account number with the transportation provider to ship the part back. The main information that CNH provides them

is where to send the part, because in many cases depending on the urgency of the part that the dealer wants, CNH may be shipping it from a very far depot. When they are returning back, CNH tries to get them back to a nearby depot. That is one of the most important decisions in the process.

Waste collection, treatment, and recycling services continually evolve as new technologies are developed, as companies enter the market, and as new services become available in different geographical regions. CNH must ensure their performance and continuously improve their activities in order to meet expectations of members and to remain competitive; it uses a number of defined key performance indicators (KPIs) on price benchmarking, tonnages collected per collection (to ensure optimum vehicle and container utilization), recycling efficiencies, and other such factors. Moreover, the firm continually works on selected reviews and projects in an effort to improve efficiency and performance.

In this context, CNH has set up an information system called CSPC which is their auto management system that is facing the dealers. So, if they need to place an order, they start with the CSPC system that manages the overall workflow of the shipment. "One of the things is when we ship a part to the dealer, we take it out of our inventory and when that part comes back it needs to be added back to our inventory, because it's something that gets into our financials. So, when those parts arrive depending on the results of testing and inspection, if the part is discarded, it reflects on our financials. Let's say a part is costing 100 dollars, we send it to the supplier or to the dealer, we have to take 100 dollars of inventory to our financials. When that 100 dollar worth part returns to us, we have to send another 100 dollars worth of part to the dealer, and that is not having a revenue for us. That part that we get back, we have to see if it has any value left, so we need to write off 50 dollars from our financials and have it re-entered in our inventory. All our inventory reconciliation is managed within our CSPC system" (Nate Burgers, Head of CNH Industrial Remanufacturing).

All activities are important to remain competitive and effective in the long term. In fact, once the firm reassembles the product, using a low-price strategy, it sells its remanufactured product 30% less than the new product, plus the company applies a two-year warranty on "heavy" products such as engines and transmission. This is done in order to be able also to create customer loyalty.

Conclusion and Future Plans

Through the analysis of CNH's Reverse Supply Chain, in the EPR perspective, it is evident that the introduction of this practice appears to be viable from both an economic and environmental point of view. With the use of an adequate reverse chain, the company

recognizes the importance of being able to create a circular product life cycle in such a way as to minimize the impact on the environment and reuse resources as long as possible. Regarding the economic aspect, CNH Industrial's target is to go from 6.3% to 10% of Parts and Service's net sales from remanufactured components by 2020; the company, having favored the re-use of components rather than having to use new ones, manages to have low costs that are reflected on the customer and give it the ability to keep its equipment at a lower cost. As a further demonstration of its ongoing commitment to product innovation and the circular economy, 10 years ago, CNH Industrial began using metal-free filters instead of spin-on filters (which are made of metal), offering innovative plastic solutions and completely recyclable. To date, 30% of vehicle and engine filters available as spare parts for CNH Industrial products are metal free. The goal for the future is to guarantee the use of "green" (metal-free) materials right from the design phase, through the careful selection of suppliers who believe and pursue completely recyclable filtration products. Moreover, CNH has succeeded in ensuring that its customers have the awareness that the remanufactured products have the same value, the same quality and reliability of a new product.

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Brief biographies of the authors

Francesco Frontera

Master's student in Economics and Business at the University of Calabria. He did a research project at the University of Wisconsin-Parkside.

Abey Kuruvilla

Associate Professor of Operations Management at the University of Wisconsin Parkside. He also serves as Executive Director for International Affairs. He works regularly with his students on projects for the industry and the community, CNH being one of them.

Mariacarmela Passarelli

She is a Faculty Professor of Management at University of Calabria. Her main fields of interest include Supply chain management, Innovation and technology transfer.

The Role of Entrepreneurship in Tourism Industry: An Overview

V.Ramachandran, S.Mohan Dhas, I.M.Karthikeyan

Madurai Kamaraj University, Madurai, Alagappa University, Gandhigram Rural University

Abstract

In the contemporary era, both in industrialized countries and in emerging countries the prime concerns are individual rational and creativeness of entrepreneurial business. Entrepreneurial philosophy ultimately reduces unemployment rate, particularly educated youth. Examining tourists industry and tourism industry processes are the principal phase to empowering the educated youth to undertake tourism entrepreneurship business. The tourism industry is viewed as the agent of change in economic and social changes. Tourism entrepreneurship eliminates societal problems, but surge the fiscal growth and development of a country, resulting to rise in country GDP. Employment has continually been a dominant subject in development. Employment is vital to successful and viable growth. The tourism business is one of the largest, fastest growing sectors. The tourism industry is considered as an indispensable role in job creation. Overall, this paper review the charisma of tourism business in reducing unemployment and also elucidate the vitality of tourism industry in present-day. This study attempts to explain the role of tourism entrepreneur's roles for the development of different attracts areas.

Keywords: Role in Entrepreneurship, Tourism Industry, An Overview of Entrepreneurship, Tourism Industry, Entrepreneurship Strategy.

INTRODUCTION

Entrepreneurs introduced the concept of Tourism Businesses. Entrepreneurship plays a vital part in transforming the supply of leisure and recreational opportunities (Chang, 2011). Entrepreneurship is considered as a critical factor in tourism development, both regionally and globally. Khanka (1999) stated that 'tourism entrepreneur' is a person or a group of persons producing and managing tourism products. Tourism entrepreneurship has been recognized as the basic way to provide strategic support for maintaining business development especially in rural areas. Koh & Hatten identified the prominence of entrepreneurs in tourism development and claimed that the birth of touristic business is not an act of nature but an act of the tourism entrepreneur. Koh & Hatten (2016) claimed that it is only when tourism entrepreneurs exist a society's environment, landforms, flora and

fauna, historic artifacts, and cultural heritage enclaves become tourism resources which can be renovated and transformed into tourist attractions and destination. Tourism produces a great deal of profit, and it is the fastest growing sector in the world.

REVIEW OF LITERATURE

Entrepreneurship the notion of entrepreneurship was first recognized in the 1700s, since then the denotation of entrepreneurship has developed ever since (Pahuja, 2015). Many merely define entrepreneurship as

An opening one's own business. Most individuals deliberate an entrepreneur is all about producing novel idea (Fernandes, 2016). Entrepreneurship is the utmost and an imperative facet of economic growth in the past and the contemporary era. Entrepreneurship is the motion of venturing into a new business or businesses, captivating on the risks in the optimism of making a maximum turnover. Entrepreneurship plays a pivotal part in the success of economic growth and lead to business paybacks (Nako, Dejan, Tatjana, & Oliver, 2011). In this way, entrepreneurship quality invariably leads to job creation in tourism business and increase economic growth.

Entrepreneurial Qualification

Entrepreneurship education is the course of providing persons with the skill to identify commercial concepts, the vision, self-esteem, information, knowledge and abilities to act on them. The essential knowledge formed through entrepreneurship teaching comprises: the capability to recognize business openings in one's life; the capability to chase opportunities, by breeding novel ideas and inductee the required alternatives; the capability to produce and function a new business; and the capability to reason in an inventive and imperative method (Hill, 2011). Educational requirements for entrepreneurs are non-specific; however, a strong business background can be helpful. While successful entrepreneurs are well trained in their fields, qualifications can vary. The principle of the present business lies in the specialism of functions. For example, for opening up a restaurant or fast food the entrepreneur may be new graduates of hospitality programs or skilled chefs. However, somebody with a regular Master of Business Administration (MBA) from reputed B-Schools who doesn't know anything about culinary, but has constantly fantasized of running a great cafe, may also succeed as an entrepreneur. All entrepreneurs require capital, thus skill to inscribe an effective commercial strategy is vital.

Entrepreneur Problems

Entrepreneur problems Everyone has the dream of starting up their own business and being their own supervisor, and for most individuals it continuously stays as a nightmare owing to many hindrances confronted in starting a business and keeping it successively and profitable. According to Kanchana, Divy, & Beegom (2013) some key hurdles that all entrepreneurs and business owners face when starting a business include:

1. Developing the idea and business concept
2. Raising principal for startup business
3. Gathering a business team
4. Identifying the right business site, noble employees and loyal customers
5. Competing with competitors
6. Unanticipated business trials and expenditures
7. Keeping up with industrial changes and developments
8. Withdrawing the business
9. Down in the stagnations
10. Overrating, concentration and passion and resolution

TOURISM INDUSTRY

The tourism business has been acknowledged as one of the main businesses for lashing economic expansion and economic revolution in developing countries (Filipovski & Sc, 2011). So far, tourism and travel associated services are strappingly controlled by European countries and the United States of America (USA). The tourism industry generates employment opportunity for large numbers of populaces, both skilled and unskilled workers. Tourism endorses nationwide amalgamation by generating foreign exchange, encourages cultural activities and customary and traditional handicrafts segment (Patel, 2012). Tourism business augments a major impact to the survival of various service sectors such as resort, rest house, services, hotels, handcraft business development centers and travel agents.

3.1 Types of tourism industry Arunmozhi & Panneerselvam (2013) stated that tourism is the short term association of people outside the domicile where they ordinarily live and work to a destination that expressly meets there requirements. The kinds of tourism are vibrant in time. Tureac & Anca (2008) justified that in general tourism industry is distinguished into six types established on diverse standards.

1. Relaxing tourism industry
2. Health care tourism industry 3. Holiday tourism industry
4. Transportation tourism industry
5. Reduced distance tourism industry
6. Professional tourism industry

Different types of tourism business have been distinguished based on the following criteria (Tureac & Anca, 2008):

1. The conditions of the primary region and the destination: a) Domestic tourism business
b) International Tourism business
 2. The standard quantity of members: a) Individual tourism business b) Group tourism business
 3. Organizational standard: a) Organized tourism business b) Unorganized tourism business c) Semi-organized tourism business
 4. Seasonal Criterion: a) Continuous tourism business b) Discontinuous tourism business
 5. Temporal Standard: a) Tourism for very extensive period of time business b) Tourism of long period business c) Tourism of compact period business
 6. Transportation vehicles criteria: a) Train Tourism business b) Auto Tourism business c) Maritime tourism business d) In-flight tourism business e) Other forms of tourism business such as cycling, walking, etc.
 7. Societal criterion: a) Private tourism business b) Social tourism business
 8. Age and occupation standard: a) Youth Tourism business b) Specific to grown-ups' tourism business c) Specific for adult group tourism business
 9. Destination criterion: a) Mountain tourism business b) Season tourism business
- 3.2 Factors to be contemplate for tourism industry The features of tourism, which encompassed transport and other infrastructure, marketing and networks to dissemination structures, need proper tourism development strategies that can implement its full range. The tourism industry needs to be monitored and control the value of the tourist experience, the value of the operational experience, and the value of the host situation (Blackman et al. 2002). Individuals who are involved in tourism industry need to apprehend cultural variances between tourists. The host agency and

country must be capable of creating tourists attraction and offer tourist treatment that meets the standard expected by the customers (Albu, 2013).

OBJECTIVE OF THE STUDY

Research program is constantly connected with specific destinations, which provide guidance towards the end of research, examination and discoveries. Followings are the fundamental goals of this examination program: i) Understanding the Entrepreneurial Opportunities in Tourism Industry. ii) Focusing on women strengthening in the travel industry through enterprising practices. iii) Understanding the need and advantages of women strengthening and their pioneering rehearses in the travel Industry. iv) Highlighting on the undermined territories of related practices. v) Contributing in the field of Women Development, Economic improvement and Tourism Research.

DATA AND METHODOLOGY Data Source: Both Primary and Secondary sources of data have been used for the study. Primary Data Source: respondents from tourism and other industry. Secondary Data Sources: Books, Journals, Annual Report etc. Methodology: Qualitative and Quantitative

ENTREPRENEURSHIP IN TOURISM INDUSTRY ROLE IN ERADICATING UNEMPLOYMENT

Tourism act as a business for creation of employments opportunity and service focused industry generate colossal profits to the individuals, society and the nation as a whole. According to Ramukumba, Mmbengwa, Mwamayi & Groenewald (2014) found that tourism reduces poverty, but improved earnings. The tourism business has facilitated the entrepreneur belonging to deprive background to find employment and develops their standard of living. WTTC (2016) conducted a research on travel and tourism business and found that Travel & Tourism subsidized US\$ 7.2 trillion to the world Gross domestic product (GDP), signifying 9.8% of global Gross domestic product .The travel and tourism business sector generated 284 million jobs, or 1 in 11 employments in the world. Travel & Tourism business rose by 3.1% in 2015 reveling the 6th successive year of positive progression for the segment. Travel & Tourism will overtake the global economy through the following decade, growing by an estimated 4% on average per annum over the next ten years. WTTC (2016) stated that by 2026, Travel & Tourism business is anticipated to generate 370 million employments opportunities in total globally, which will be equivalent to 1 in 9 of all employments in the world. WTTC (2016) predicted by 2026 South Asia will be the fastest growing sub-region with 7.1% GDP growth, India 7.5% and China 7.0%. The prominence of the tourism industry as a creator of employment opportunities can be agreed

from the fact that in India each one million endowed in tourism industry generates 47.5 jobs directly and about 85-90 employments indirectly. In comparison, agriculture generates 44.6 employments and manufacturing industry generates mere 12.6 jobs. The tourism industry is the 3rd major foreign exchange payee next to gems and jewellery and ready-made clothes industry (Mukherjee, 2012).

GOVERNMENT ROLE IN MOTIVATING TOURISM ENTREPRENEURSHIP

Javier & Elazigue (2009) stated that one of the key parts to the accomplishment of tourism business is local government units (LGUs). The part of local government units is to encourage the society living standards, monetary value, ecological and cultural well-being of their societies. Central and state government should work together while instituting the policy and strategy for sustainable tourism business environments. They should involve all the shareholders to represent all their viewpoints and welfares associated with the sector (Brokaj, 2014).

RECOMMENDATION AND CONCLUSION

The examination proposes some suggestion for future advancement of enterprise in the travel industry. This incorporates: Identification of potential zones which supports most extreme innovative chances. 1. Building isolated and objective situated innovative activity plan centering the travel industry and related businesses. 2. Putting unique accentuation on women's cooperation in the travel industry business. 3. Government activity and backing for more women innovative practices in the travel industry. Concern offices, must have activity plan for this and specific program like endowments, awards must be included to accomplish the objective. 4. Leading uncommon and expert preparing project identified with enterprise and the travel industry. 5. Making social mindfulness for women instruction, women business and cultural improvement. 6. Grant and acknowledgment by different ventures, foundation and Government. The exploration finishes up with the actualities and discoveries that increasingly activity ought to be taken to advance and energize women's investment in any field like restorative practices, instructive exercises, safeguard and even in business. Women business enterprise must not be confined in a particular class or society, and restricted with very less models.

Entrepreneurs and entrepreneurship motivate business innovation and economic growth. Entrepreneurs are exceptionally imperative in dropping unemployment rate of the skilled and unskilled workers. Tourism industry is one of the key industries for driving the nation economy. Tourism has become more comprehensive of novel ideas. To sustain tourism industry it required, a substantial long term government support, extensive training,

research and planning processes in order to grow and flourish. Entrepreneurship success leads to upliftment in society livelihood in term of economic gain (Koh & Hatten, 2014).

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Motorcycle Tourism: Defining the Existing, Yet Undefined Practices and Preferences of Motorcycle Tourists in India

Aiwa Romy

Taylor's University

Abstract

The motorcycle touring is a trending activity among the bikers in India. Although prevalent, the concept of 'motorcycle tourism' is relatively a new terminology in the tourism sector, and least familiar to the bikers in India. Perhaps they address it as 'a ride', 'long ride', or an 'expedition'. Motorcycle tourism has been widely discussed in western literature. However, its existence and practice in India and the eastern world are undefined. Motorcycle touring in India is commercially nurtured by renowned motorcycle brands, through their clubs like REOC (Royal Enfield Owners Club), H.O.G (Harley Owners Group), R.T.A (Riders Association of Triumph), and the legacy of riding community has been carried forward by many other riding clubs (RCs) and motorcycle clubs (MCs). Altogether, India has more than 300 registered clubs as recorded by the Biking Community of India (BCI). Rides to unexplored destinations, nature destinations, or city ride in a weekend; saddling-up for long rides to Leh-Ladakh, Spiti Valley or Tawang that tests the rider's endurance are inevitable for a riding lifestyle. Motorcycle touring and motorcycle related activities like rallies are intertwined with the motorcycle sub-culture with its own subcultural boundaries and limitations. This demarcates bikers from the larger culture. This research had attempted to unleash how motorcycle touring has been conducted among the riding community in India, comprehend the preferences and requirements of the bikers for touring, and explore the biker's perceptions on the concept of motorcycle tourism. The empirical materials for the study were gathered through fieldwork, interviews, and participant and non-participant observations conducted among the bikers, being a member of an official biker club in India and taking part in local and national level biker events in India. The findings suggest the stakeholders to facilitate infrastructure and amenities to cater to the demands of this booming subculture in the travel and tourism market.

Keywords: Motorcycle Tourism, Expedition, Ride, Destinations, India

Integrated Quality Management of Destinations: Benchmarking and Certification for Tourism Sites in India

Mahadevan P, Robinet Jacob

*Tourism Consultant, India Destination Benchmarking and Certification Project
Mahatma Gandhi University*

Abstract

Tourism is an industry that is solely dependent on marketing, promotion and vying of customers and offering them unique and varied experiences. In this era of digital transformation, destinations across the globe are in cut throat competition against one another in wooing tourists towards them. Though India has invested millions for infrastructure development and facilities improvement in various tourist destinations across the country, most of these destinations lack international standards and face lot of problems in turn affecting the image of the destinations among tourists and media. Enhancing destination quality through continuous assessment and measurable outcome is of utmost need in the country. Global benchmarking and certification standards have been evolved as a tool for total quality management in destinations which have become an assurance of destination quality worldwide. The primary objective of destination benchmarking and certification is total quality management to enhance the infrastructure facilities and overall ambience of the destinations and a better management. The 'India Destination Benchmarking and Certification Project' project aims to develop nationwide destination standard, criteria and indicators aligning with GSTC standards working towards making destinations in India at par with global level.

Key words: Destination benchmarking, certification, total quality management

Tourism under Climate Change Scenario: An Analysis of Wayanad, Kerala

Deleep D, Sanoop Kumar PV

Govt. Arts & Science College, Pazhassiraja College

Abstract

The increasing requirement of energy has been attributed as a major factor to climate change, and tourism industry in general, and air transportation is among the major greenhouse gas emitters. Pleasing weather is a tourism resource. At the same time, Tourism is highly vulnerable to climate change, which adversely affects tourism resources. It can increase the insurance costs, has safety concerns, water shortages, biodiversity loss, damage to assets and attractions at destinations, and negatively affects tourism demand. A two-way cause-effect relationship can be observed between tourism and climate change.

Tourism is significant to the economy of destinations like Kerala in India. Kerala has suffered unprecedented floods in 2018 and 2019 and unforeseen biologic disaster like Nipah Viral endemic in 2018, considerably upsetting its tourism. Wayanad, an emerging tourist destination in Kerala was affected by all these disasters. This paper reviews the impacts of climate change on tourism and explores how these incidents negatively affected tourism in Wayanad.

Keywords: Climate Change, Natural Disasters, Adverse impacts, Tourism demand, Tourism infrastructure, Wayanad.

How Heritage is being Used Really? Muziris Heritage Project and World-making

Parakoottathil John Denny, Chris Wilbert
Anglia Ruskin University

Abstract

Who is deciding what counts as heritage, and what does not, why, with what effects? Rodney Harrison (2010) argued this: " As a starting point, we must recognize that "heritage" has very little to do with the past but actually involves practices which are fundamentally concerned with assembling and designing the future—heritage involves working with the tangible and intangible traces of the past to both materially and discursively remake both ourselves and the world in the present, in anticipation of an outcome that will help constitute a specific (social, economic, or ecological) resource in and for the future." So, in a sense heritage projects are world-making, in process. Does heritage get used to open up pasts and possible futures or is it closed, and very narrow? So, the background to the idea of the project and the overall focus - which you say is being determined - would be of interest at first. Then how different parts fit into this 'story' - heritage is very often about telling stories. Then what are the aims, who is it focused on (locals, tourists, both, others?), what difficulties are faced, how are difficult topics dealt with? These kinds of things help to understand how heritage is being put to work in different places. This paper trying to traverse through the Muziris Heritage Project, Kerala as a model project to use heritage for world-making and the possible constraints it may face with the social identity of people, from the region or from other parts of the world related to the trade history of Muziris Port. 33 countries are associated with Muziris port. Muziris, legendary port, the heart of the historic Spice Route, vanished off the grid over 3000 years ago.

Destination Disaster Management Plan in Tourist Sites of Kerala: Guidelines Based on Geo Spatial Approach

Mahadevan P, Denny P John, Robinet Jacob

*India Destination Benchmarking and Certification Project, Muziris Heritage Project
Mahatma Gandhi University*

Abstract

By its very nature, tourism is a global and intensely competitive industry. Although inherently vulnerable to economic crises, natural disasters and outbreaks of warfare and epidemics, international tourism has shown remarkable resilience in recovering from the adverse effects of such negative, but short-term, factors. Safety and security have always been indispensable condition for travel and tourism. But it is an incontestable fact that safety and security issues in tourism have gained a much bigger importance in the last two decades. Destinations worldwide are subject to a variety of natural hazards and disasters. Huge losses occur annually across the country through floods, cyclones, landslides, erosion, drought and occasional earth quakes. India being a vast country with a wide variance in topography and physical features is subject to a variety of natural hazards with various disasters occurring in different states. The state of Kerala, which is predominantly dependent on tourism economy, was affected by the most devastating flood of the millennium during the month of August 2018. Most of the tourist destinations in the state were affected by the inundation and the industry has fared adversely. The flood has aroused the need for effective destination disaster management plan for tourist sites in the state. This paper is the outcome of the research for such a comprehensive plan for tourist destinations in the state. The study has grouped all major destinations of Kerala into various risk categories through geo spatial analysis and has suggested planning and management guidelines for each destination.

Key words: Natural Hazards, Geo spatial approach, Destination disaster management plan

Healthcare Gets a Facelift

Rizvana Zameeruddin

University of Wisconsin- Parkside

Abstract

HEALTHCARE GETS A FACELIFT The Financial Accounting Standards Board (FASB) issued a new statement applicable to non-public health care entities that drastically changes the way the industry will measure revenue. The concept of collectability, which is relatively new to health care entities now factors into the revenue equation. In the past, entities offered health care to patients, regardless of their ability to pay. After the implementation of the new standard, collectability of patient balances will play a much bigger role in determining what will be reported, how much, and when. Health care entities will be required to estimate collectability and also change the way such estimates are presented on company financials. This article will provide an insight as to health care entity contracts with patients as well as significant changes to “legacy” practice. Additionally, we hope to highlight various implementation strategies under the new standard which becomes effective on January 1, 2020.

Inclusive Education in CBSE Environment – A Case Study

Diana Mathew, Radhika P, Rajalekshmi K

The Choice School

Abstract

Inclusive education becomes successful when it goes through accepting, understanding, and attending to the physical, cognitive, academic, social, and emotional needs of the student. The key stakeholders here are the regular education teacher, special education teacher, other staff and faculty members along with parents of the differently abled student. In The Choice School, the department of health development and education support (HDES) facilitates the students to be full participants in the classroom through regular effective interventions. This paper touches upon the process, efforts and progress made by the HDES in the field of inclusive education along with the risks and concerns met by the students and parents. Obstacles faced and lessons learned are summarized and recommendations suggested for further improving the current plight of the parents of children with learning disabilities.

Introduction

Inclusive education is when all students, regardless of any challenges they may have, are placed in age-appropriate general education classes that are in their own neighborhood schools to receive high-quality instruction, interventions, and supports that enable them to meet success in the core curriculum (Bui, Quirk, Almazan, & Valenti, 2010; Alquraini & Gut, 2012). The Central Board of Secondary Education (CBSE) is a Board of Education for public and private schools, under the Union Government of India. The CBSE has had guidelines in place since 2008 on Inclusive Education and accommodation of children with disabilities, with the direction that the same be implemented at the primary level of education. Despite these guidelines, the number of schools admitting the students with learning disabilities is very few. The Choice School, under the parent philanthropic trust, The Choice Foundation, is an exception. Here, with the Department of Health, Development and Education Support (HDES) playing a key role, inclusive education is made possible in the mainstream schooling. In this paper, an attempt is made to study process, efforts and progress made by the HDES in the field of inclusive education in The Choice School.

Objectives of the Study

- To explain the roles played by the key stake holders
- To comprehend the intervention process
- To examine the risks and concerns involved

- To analyze the obstacles faced
- Methodology The present study is based on the primary data that has been in use in the Department of Health, Development and Education Support (HDES) in The Choice School.

Role of Key Stakeholders

The regular education teacher (mainstream teacher) is the first key stakeholder in the Choice School. The mainstream teacher identifies the student who is not able to cope up along with the classmates regarding academic and non-academic activities. They report the incidents they notice and refer the student to HDES for further scientific investigations. The special education teacher (special educator) from HDES does a number of observations of the student during the class hours of the specific subject for which concern was raised by the main stream teacher. The special educator notes down the observations in a welldefined class observation form. Supported with the report from the mainstream teacher, the parents are called for a discussion on the observed factors. After getting the consent for evaluation from the parents, an informal assessment on age appropriate academic and nonacademic skill set is carried out. The results are discussed with the parents in detail. When the parents are convinced with the need for intervention, with their consent the process begins. The other staffs support the process through various ways as and when situation arises for their support. Thus all the teaching and non-teaching staff invariably forms part of the inclusive education.

Understanding the HDES Intervention Process

In The Choice School the intervention process starts with diagnosis. The last four years data shows diagnoses of Intellectual Disability, Specific Learning Disability, Downs Syndrome, Cerebral Palsy, Hearing Impairment and Autism Spectrum Disorder. Comorbid conditions of Cerebral Palsy and Intellectual Disability, Autism Spectrum Disorder and Intellectual Disability, Specific Learning Disabilities and Attention Deficit Hyperactivity Disorder have also been documented.

Based on the informal and formal assessments, an individualized plan is prepared by the special educator for the intervention process. This includes academic and non-academic goals. If the student requires speech and language intervention, goals for the same are prepared by the Speech and Language Pathologist. The plan is prepared for a period of 5 months and is approved by the parent before implementation.

As inclusion is the aim, every effort is taken to ensure that the student learns alongside his classmates in the mainstream classroom. Depending on the difficulty,

accommodations and modifications are made to the curriculum to facilitate the learning process. Intervention is provided as in – class support, one to one sessions or in small groups in the school resource rooms.

At the Kindergarten and Primary level, intervention is mainly focused on screening for and identification of students who are at-risk of learning difficulties and prevention. Intervention mainly focuses on improving perception skills, literacy skills and numeracy skills. Classroom materials like worksheets and test papers are modified according to the need of the student. Differentiated visual tools like graphic organizers, lesson organizers and simplified printed learning materials are provided to students by the special educator. Students who require extensive support are trained in functional academic skills with sessions in physical activities and art and craft activities.

In the mainstream classroom, Special Educational Needs (SEN) students are seated closer to the teacher and instructions are repeated and care is taken to ensure understanding and completion of tasks. Buddies are assigned to SEN students to assist in daily classroom activities.

In the Middle School, test papers are modified for SEN students who are performing below their grade level in academic subjects. Options to drop learning multiple languages are given.

Based on the type of intervention, progress is gauged. It could be weekly, monthly, or half-yearly. After the half-yearly progress assessment, parents are involved for result discussion. The intervention plan for the next five months is prepared. At the end of an academic year, the progress for the second half is evaluated, feedback from parents and teachers are taken and a handover report is prepared. This report serves as a reference for the next academic year's intervention process.

Risks and Concerns involved in the Process of Intervention

Students with special needs sometimes display behavior issues which the parents of the mainstream students see as a risk and vice versa. This is a tricky situation for the school management to handle. Since it becomes their responsibility to provide safe and secure environment for learning as well as organize for qualified mainstream teachers and special educators.

Limited interaction between mainstream teachers and the special educators is a major concern. In classrooms with students numbering up to 30 or 32, teachers are often forced to overlook the needs of SEN students as they introduce concepts and work materials. In the maddening rush to complete the curriculum by the mainstream teachers,

special educators often find it a herculean task to stay abreast of classroom activities and materials in order to modify and adapt them. Teachers find it difficult to engage SEN students in the large mainstream classrooms and this is often not communicated effectively to the special educator.

Obstacles Faced While Dealing With Differently Abled Students in a Regular Classroom

- **Inexperience and lack of training:** The mainstream teachers sometimes lack the training and exposure required to include differently abled students in their classrooms. They have difficulty modifying their lesson plans and their teaching materials to suit the needs of students with special needs. Lack of experience and knowledge in the kind of disability faced by the student can often result in the teacher not being able to teach the SEN student effectively.
- **Equal participation:** The mainstream teachers often do not understand the differences in communication and sensory perception experienced by a SEN student. The teacher has to ensure that the differently abled student is included in all classroom activities taking into account his needs and making the necessary adaptations and use of assistive devices.
- **Teacher assistants:** In classrooms that have SEN students, it is imperative that there be an assistant for the teacher to ensure that the differently abled students are engaged and at par with the instructions given in the classroom by the teacher.
- **Teaching empathy:** The initial exposure of a typically developing child to a differently abled student may not be smooth. Some may react adversely. Hence, a teacher should be trained to tackle instances of insensitivity, cruelty and bullying. The teacher should be able to teach the classroom to treat everyone equally without discrimination.
- **Overcoming apprehensions of parents of typically developing students:** Parents often find it difficult to understand the presence of SEN students in the mainstream classroom. Hence, teachers have to make parents aware of living in an inclusive society and their children studying in an inclusive school.
- **Misguided expectation of parents of SEN students:** Differently abled students take their own time to master and progress from one level to another. Some may progress in a different tangent altogether when compared to their classmates. Hence, teachers have to counsel parents on the importance of working on functional academics focusing on basic literacy and numeracy skills and daily living skills for independent living rather than on core academic skills.

Summary and Recommendations

In The Choice School, effort is being made to include every child despite their short comings. Every staff, immaterial of their roles and responsibilities, contributes to the inclusive environment. The special educators are always working on to reduce the risks, concerns and obstacles faced during the process of intervention.

The Choice School has adopted a Rights-Based approach to inclusive education. In accordance with the Salamanca Statement of 1994, it is the right of every student to be given access to education alongside the rest of the population regardless of differences. Since the inception of Department of Health, Development and Education Support in November, 2015, inclusion has been the norm in The Choice School.

Inclusion in the truest sense of the word is yet to be achieved but it is here to stay. Taking The Choice School's example many more school should come forward to make way for differently abled children so that a better society is created with discrimination.

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Brief biographies of the authors

Diana Mathew

HDES Head of Department Designate, The Choice School. She has been working in the field of Special Education for the past 11 years. She is a Professionally Certified Educational Therapist (PCET) from the National Institute of Learning Development (NILD), USA. Her main areas of interest are perfecting the methods of providing support to students with specific learning disabilities in the mainstream classroom to make inclusion in schools a reality.

Radhika. P

Deputy Vice Principal at The Choice School. Handles Mathematics and Psychology at Middle and High School. Main field of interest is research on student enrichment through character building.

Rajalekshmi. K

Curriculum Designer at The Choice School. Has 15 years' experience in teaching, teachers training, creating activity-based teacher support material and designing educational programme.

The Red Lotus Critical Health Promotion Model: an Innovative Values-based Model for Teaching and Sustainable Practice

Jane Taylor and Lily Ohara

University of the Sunshine Coast

Abstract

We first published the Red Lotus Critical Health Promotion Model in 2007, and since then it has been used in undergraduate and graduate health promotion courses in Australia, USA, UK, UAE, and Qatar, as well as research and health promotion programs. The Red Lotus Critical Health Promotion Model is designed to support critical health promotion as a public health practice, and responds to calls in health promotion declarations from the Ottawa Charter onwards, to move practice away from biomedical-behavioural approaches to health promotion, and to recognize and respond to the socio-ecological determinants of health resulting from large scale processes such as globalization. The distinguishing feature of the Red Lotus Critical Health Promotion Model is the inclusion of a system of values and principles for sustainable practice. These values include, but are not limited to: health equity, holistic health paradigm, strengths-based salutogenic approaches, socioecological science, non-maleficence, and empowering engagement processes. We recently evaluated the impact of using the Red Lotus Critical Health Promotion Model as a pedagogical foundation for health promotion courses, on the practice of graduates of health promotion programs from a university in Australia. We found that the majority of participants felt knowledgeable about the model and confident in their ability to use it in practice. Participants felt that the model had a positive impact on the health promotion programs they worked on, however less than a quarter felt that the model had an impact on the institutional policies of their workplace. Further development of the model involves refining the content to enhance its utility and developing a guide for implementing the model in a range of sectors to enhance sustainability. The study has implications for the use of the model in undergraduate and graduate health promotion related programs, and in professional development programs for health promotion practitioners.

Big Data and Analytics: Enabling Knowledge Management for Personal as well as Professional Growth

Gipson Varghese

SD College

Abstract

A growing body of studies show that computerization can change the nature of work in many jobs, influence people's morale, affect relations with co-workers and supervisors and improve (or worsen) levels of accomplishment (Philip, H, 1991). With rapid advancement of the technology, our personal and professional lives are in a convergence driven by cloud, analytics, mobile and social technologies (Ferrar, Jonathan, 2017). These forces, empowered daily with new technological inventions are affecting our decision making, both in personal and professional lives. The speed-driven big data analytics help organizations to follow proper decision-making procedures, get real-time insights and gather data for quick actions (Finch, G, 2014). Technology can change the process of analysis, forecasting, problem solving and communication strategies and also affect work schedules and staffing allocation of departments. Big data and insights drawn from analytics have become crucial for knowledge management, which would influence both personal and professional lives. Currently the data is being used mostly by companies/organizations, with an intention to improve business and to improve customer relations. Although data and information are available, the use of big data is in different terms and dimensions. Therefore, there are several uses as well as challenges for organizations and individuals to embrace these technologies across full spectrum of engagements. The data is only valuable if it is used to make better decisions. An ideal way to make use of data is to discover what we do not know from data and communicate these findings. It is also very important to get predictive insights from data that can result in tangible actions that will bring value. This paper is planned in such a way to discuss on the advantages and disadvantages of big data and insights drawn. Based on the theory of Knowledge Management (KM), the paper will discuss basically the following aspects; a. Technologies for transfer, b. Analysis and modeling c. Socio-economic aspects of data and evidence based policy d. Ethical and legal requirements and d. common challenges. In this paper we will bring together theory from knowledge management (KM), competitive intelligence (CI) and big data analytics to develop a more comprehensive view about big data, information, knowledge and intelligence. We will follow a conceptual approach, combining various theories with practical applications. Illustrative data drawn from other empirical data and work would be applied to illustrate some concepts. The design of the

paper would contain the following structure and each heading and sub heading would be discussed with empirical evidences. 1. Technologies for transfer: this section would mainly discuss about the aspects on cloud computing and Internet of Things 2. Analysis and modeling: this section consists of discussion on sentiment modelling and machine learning and adaptive system 3. Socio-economic aspects of data and evidence based policy: since analysis and interpretation would largely influence socio-economic aspects, this section consists of discussion on risk management and economic growth, high frequency market, causal inference, dynamics of markets and social care 4. Ethical and legal requirements: by and large information would certainly affect the security of people and the society, therefore this section consists of arguments on privacy, data protection, anonymization and legal and ethical responsibility 5. Challenges: there are several challenges on the data mining and interpretation for proper usage, therefore discussion on the following matters are of great importance, like, data and knowledge, interpretability/explainability, unstructured and multi-stream data analytics, real-time or near real-time analytics, legal, ethical, societal issues are not yet well understood, data; the currency of the future and use of data in developing countries Key Words: Big Data, Knowledge Management, Competitive Intelligence, Innovation, Artificial Intelligence, References : Glenn Finch (2014), Four ways to innovate using big data and analytics (accessed online from <https://www.forbes.com/sites/ibm/2014/12/08/four-ways-to-innovate-using-big-data-and-analytics/#371e276c2bb1> on 01/08/2017 Ferrar, Jonathan, 2017, Three ways to use big data to build a smarter work, accessed online from <https://www.forbes.com/sites/ibm> on 01/08/2017 Philip, H, et.al (1991), 'The implementation and adoption of new technology in organizations: The impact on work, people and culture', Human Resource Management, Spring 1991, Vol.30, No.1, pp.113-139

Promoting Sustainable Globalization: Past, Present, and Future

John Skalbeck

University of Wisconsin- Parkside

Abstract

In September 2009, the University of Wisconsin-Parkside (UW-Parkside), in collaboration with UW partner campuses, began the first online Bachelor of Science in Sustainable Management (BS MSGT) degree in the US. In January 2013, UW-Parkside helped launch the collaborative online Master of Science in Sustainable Management (BS MSGT) degree to meet graduate education demand. This paper reflects on lessons learned over a decade of teaching in these programs. The reflections are shaped largely by teachings from notable naturalists and inspired by the young climate activist Greta Thunberg. The curriculum of the BS and MS MSGT degrees are based on the systems thinking approach and embrace the triple bottom line (people, planet, profit) foundation that serves as the definition of sustainability. Triple bottom line, first coined by John Elkington in 1994, is fundamentally an accounting framework that expands the profit motive of the businesses to include environmental and social cost benefits. Sustainability was defined much earlier in nature terms rather than business terms. Aldo Leopold (1949) stated eloquently “When we see land as a community to which we belong, we may begin to use it with love and respect.” John Muir (1911) also recognized the interconnected community saying “When we try to pick out anything by itself, we find it hitched to everything else in the Universe.” These two examples represent an essential tenant of sustainability that recognizes the interconnection of the natural world which plays host to human existence. The Global Climate Strikes attracted over 8 million mostly young activists from 180 countries who are clearly impatient with the tepid climate crisis response. Perhaps the triple bottom line definition of sustainability is outdated and ripe for revision. Sustainability for the future needs to be Planet First. The generation that will lead sustainable globalization this century is speaking. We need to listen.

An Analysis and Mitigation Plan in Connection with the Recent Floods of Kerala - A Study by the Choice School, Tripunithura

Nathen Flex, Khadhija mehnaaz Raffi Mather, Antony Francis, Sandhya Pradeep

Abstract

The recent floods in Kerala have demonstrated a devastating impact on the lives of the people and economy of the state. Studies noted changes in the south-east and south-west monsoon patterns, particularly in the intensity of the short-spell down pour. With the aid of Google maps records over a period of 30 years, it was observed that the urbanization of Greater Cochin area resulted in disappearing of waterways and choking of canals and streams. Mindless dumping of solid wastes into these severely constricted water ways compounded the problem. A flood map of Kerala would greatly help in identifying vulnerable areas, disaster planning, and mitigations. These flood maps will provide the data needed to help mitigate potential damages caused by flood events and help plan for flood risk reductions. In this paper, mitigation techniques employed around the world were analysed and areas in which students can play a major role were identified. Further, a study could be conducted in connection with the recent flood situation in Kerala and how students could collectively play a significant role in planning the mitigation strategies with government intervention, in formulating ways to prevent floods.

Open Source Learning for Sustainability and Risk Management

Stefan Zeranski & Fabian Boehmer

Abstract

Looking at global challenges in the area of ESG-risks and at UN SDGs many master programmes focus either on sustainability management or on risk management. The European Parliament has declared climate emergency in order to promote legislation for climate protection. The Basel Committee of Banking Supervision has installed a task force on climate-related financial disclosures (TCFD) and launched a green fund as sustainable investment vehicle for excess reserves of national central banks. The European Commission will take bold action against climate change in order to be the first continent to meet the Paris climate goals. In the light of the latest studies on climate change (IPCC, WMO, Stockholm Environment Institute etc.) there are huge challenges to meet the climate targets and to stop global warming, the more so as the production gap report indicates that there is little hope: current energy coal mining plans until 2030 will lead to a heavy CO₂-transgressions of climate targets. Thus, politicians in the European Union have chosen a formal way to promote standards for sustainability management and sustainability reporting on climate risks including ESG-risks for public listed companies, banks, insurance companies and investment companies. With regard to the challenge of an effective transformation to meet climate goals and to mitigate ESG-risks ZWIRN as Ostfalia Center for Scientific Interdisciplinary Risk and Sustainability Management (registered at UN PRME) has designed a new international interdisciplinary and transdisciplinary master programme for sustainability and risk management for part time students within an open source learning environment. Based on a study of various part time student programmes we created a new design to combine blended online learning with on-site application workshops and international lecturers. Within this programme, we want to create an open ESG-solution pool for different application areas while we intend to integrate many/more international lecturers on sustainability and risk management in order to promote sustainable ESG-solutions. In comparison to other master programmes, we prefer co-authoring and practical application areas from universities of applied sciences as educational guidelines. Our Master for Sustainability and Risk Management (SRM) starts with legal foundations to introduce fundamentals of law for sustainability and risk management as it is up to legal institutions to form a legally binding framework for a better

world in the light of UN SDGs. The subsequent four modules deal with risk management while we focus on a broad understanding of risk including ESG-factors, which have been neglected too long. With regard to classic risk approaches, it becomes clear that risk tools must fit to global ESG-risk challenges and stress testing. Without proper risk tools, open-minded risk culture, comprehensive risk communication management is likely to fail and produce ESG-damages. Hence, risk leadership and risk strategy have to be forward looking considering interdependencies of technological risks coming from the production approach of institutions/corporations. Looking at shortcomings of applied technologies is an expression of social responsibility and leads to four sustainability management modules enabling students to formulate and implement a comprehensive sustainability management strategy and ensuring sustainability compliance. Before students can write their master thesis, they have to prove in three application workshops that they are able to generate viable sustainability management and risk management solutions. The application workshops contain current sustainability and risk challenges from practice and are first practical contributions from students to transform reality towards more sustainability.

India's Road to Sustainable Development and Risk Management

Anirudh P.S, Manu Muralee, Padma R mohan

Abstract

India's population of 1.3 billion exerts tremendous pressure on India's finite resources and imposes an environmental risk in the form of actual and potential threat of adverse effects on living organisms and the environment. To sustain the ever-expanding population, it is vital for the country to adopt suitable measures to conserve its resources and at the same time improve the economic and social welfare of its people. To this effect, the Government of India's energy policy, focuses on wind and solar to achieve energy security and sustainability objectives. However, sustainable development cannot be achieved by government efforts alone. A number of NGO's have been actively involved in spreading awareness and encouraging people to adopt eco-friendly lifestyles. This has contributed to the introduction of innovative techniques to combat environmental issues within the community; keeping in mind means to manage the risk in a way best suited to protect human health and environment. This paper focuses on the efforts of Energy Conservation Society, a premier non-governmental voluntary organization committed to the cause of promoting Energy Conservation, Environment Protection and Sustainable Development in the country. The activities of ECS include education and training of technicians and engineers in the practice of energy conservation, consultancy and advisory services, renewable energy development, and energy auditing in public building, industries, commercial establishments and other premises of major energy consumption. This paper presents statistical evidence on the effectiveness of their projects, the improvement in the lives of the people and the management of risks associated with their initiatives. The results indicate that through collective and focused efforts, the goals of sustainable development can be achieved leading to a better and brighter future.

A Study on the Relation Between Lifestyle Diseases and Food Habits of Regular Eatery Consumers in Malappuram District

Anitha Begum and Anooja Thomas

St. Therasas's College

Abstract

Lifestyle disease is one associated with the way a person or group of people lives. The WHO has recognized India as one of the nations with maximum number of lifestyle-related disorders in the near future. The quality of diet is one of the major causes of lifestyle diseases. The prevalence of lifestyle diseases is high and alarmingly increasing in Malappuram district of Kerala. So the study was conducted in Manjeri municipality of Malappuram district. In this study the prevalence of life style diseases like diabetes, hypertension and cancer among regular eaters of food from food outlets were analysed and an awareness of food safety and food quality among the regular eaters of food outlets were also conducted by collecting their details regarding the socio-economic background, food habits, knowledge about food quality and food safety, family history with using questionnaire. Among the selected samples, 69% of Subjects had the incidence of lifestyle diseases. Among them majority was 40-49 year aged people. 67% people like fast foods and remaining 33% subjects did not prefer fast food. Diabetes was the most prevalent lifestyle disease among the selected sample (49% of the samples), 39% of the subjects had hypertension and 22.5% subjects had cancer in the selected sample. 20.6% of sample below 30 years consumed hotel food regularly. 67% of the subjects complained about the gas formation after having food from food outlets, 48% subjects complained about constipation, 44% subjects had nausea and vomiting after having food from food outlets. 16.5% of sample visited food outlets once in a week, 33.5% of sample visited twice in a week, 28.5% of subjects visited thrice in a week, 21.5% subjects visited more than three times in a week. The results of the study had well proved that there is strong relationship between the habit of having food from food outlets and development of lifestyle diseases.

Gender Diversity as an Outcome of Firm and Board Characteristics in Corporate Boards: A Review Based Study

Dinky Dhiman and Pooja Chaudhary

Chitkara University

Abstract

Board gender diversity has attracted a considerable research attention over the past two decades. Many seminal studies support positive influence of women representation on the corporate boards and consequent improved corporate sustainability. Many major research papers focus on the consequences of board gender diversity and its effect on a firm performance. Primarily studies have focused on the developed nations with mixed results. Very little research evidence exists on the determinants of board gender diversity from emerging economies. The current study examines the advancements in literature on specific firm and board characteristics as determinant of board gender diversity in emerging economies. The review of research papers will help to lead an empirical study by understanding different variable considered for a similar type of studies in developed nation.

Impact of Forest Fires on Climate Change and Potential Sustainable Solutions: A Global Perspective

Kush Sachdeva, Aditi Vig, Pooja Chaudhary

Chitkara University

Abstract

There is a consensus among most economists, scientists, researchers to the climate change, the rising levels of pollution, fluctuating temperature of water bodies and degradation of environment. The UN plays a vital enabling role in the sustainable development programs and many specialised agencies of the UN eg, UNDP, UNESCO, UNDRR and UNEP help various governments to take action to slow down the climate change and reduce carbon footprints. Forest fires, has emerged as a key challenge and are increasing across dry and hot regions. These fires burn thousands of acres of forests and damage the atmosphere with hazardous gases. The recovery and controlling costs of these fires are skyrocketing, thereby affecting the economy more than the environment. This paper discusses and synthesises the current state of fires and climate change research. It further analyses the potential direction for future studies on fire and climate change as to create a sustainable solution for the future. The research puts a spotlight on one of the major causes of increase in atmospheric pollution and mass reduction of flora and fauna, the functions performed by large-scale businesses and governments of concerned countries.

Green Economy and Sustainable Development

Soorya Anand

St. Cyril's College

Abstract

Transitioning to a green economy has sound economic and social justification. There is a strong case for governments as well as the private sector to engage in this economic transformation. This recent interest in a green economy has been intensified by the widespread disillusionment with our prevailing economic paradigm emanating from the many concurrent and recent crises-particularly the recession of 2008-2009. Decades of creating new wealth through a 'brown economy' model based on fossil fuels have not substantially addressed social marginalization, environment degradation and resource depletion. The concept of green economy does not replace sustainable development; but there is a growing recognition that achieving sustainability rests almost entirely on getting the economy right. On this backdrop, the present study intends to find out the relevance of green economy, its principle and its implications in our day to day life. The study focuses on the importance of the green economy to have sustainable development and about the greener pathways to economic development. The current study is mostly grounded on secondary data sources, collected from various Indian government reports, books, newspapers, articles and journals. Keywords: Green economy, sustainable development, brown economy, environment degradation.

Investigating Sustainable Construction and Demolition Waste Management Practices in South Africa

Ademilade Aboginije, Douglas Aghimien, Segun Samuel, Clinton Aigbavboa, Ademilade Aboginije

Abstract

South Africa is among the emerging economy that has a policy environment that actively promotes waste management practices of diverting waste away from landfills through prevention, reuse, recycling, and recovery. The focus of this paper is to investigate the existing structures and processes that are environmentally responsible and resources-efficient throughout a construction (building) life-cycle in the South Africa construction industry. This paper presents the results of the investigation by using a systematic review of several works of literature to assess the sustainability of waste management scenarios with secondary material recovery to pinpoint all influential criteria. Consequently, this paper highlights a step by step approach to adequately analyze all influential criteria, and then determine and use the indicators to clearly and fully value the waste management practices. Furthermore, a life-cycle Analytical tool is used to support the development of a framework that can be applied to measure the sustainability of current waste management practices. However, problems confronting the effectiveness of the policies and current waste management practices coupled with its possible prospects would be enumerated accordingly. Thus, with the increase in the pursuit of sustainable development in most developing countries, this paper explores how sustainability can be assessed and used in top-level decision making policy within construction and demolition waste management for a sustainable built environment. Keywords: Construction Industry, Green-star rating, Life-cycle Analysis, Sustainability, Zero-Waste Hierarchy.

Exploration of Plant Microbiome for Sustainable Agriculture

Radhakrishnan E.K.

Mahatma Gandhi University

Abstract

Plants are well known to have association with diverse groups of microorganisms on it, around it and also within it. The biosynthetic potential of these plant associated microorganisms play significant role in plant growth, health and resistance to pathogens. The promises of these organisms for sustainable agriculture is just begin to explore. Due to the biodiversity richness, the plant resource of Kerala can consider to have unexplored microbial diversity with the immense promises to be exploited for sustainable agriculture. During last few years of our study we have characterized diverse types of bacteria and fungi from medicinal plants with remarkable plant beneficial properties. This also includes the identification of piperine producing, camptothecin producing and bacopaside producing endophytic fungi from various medicinal plants. From the laboratory level study, these organisms were found to have significant applications as plant probiotics.

Entrepreneurial Literacy and Entrepreneurship Education for Future Society: The Malaysian Perspective

Wee Yu Ghee and Nik Maheran Nik Muhammad

University Malaysia Kelantan

Abstract

The main goal of entrepreneurial education is to develop individuals' entrepreneurial spirit; to make them more entrepreneurial, first in the minds and further through their actions. Entrepreneurial education enables students to understand better the roles and actions of entrepreneurs, their values, attitudes and motivations. The ultimate objective of entrepreneurial education involves transforming well embedded mindsets into perceived economic and social roles of entrepreneurs. Significantly, entrepreneurial literacy is dependent on entrepreneurship education that focuses on building entrepreneurial attributes and mindsets of entrepreneurs in order to develop technical, business management and personal entrepreneurial skills. Thus, Institutions of Higher Learning (IHLs) have a fundamental role to play in enhancing entrepreneurship literacy particularly in the era of fourth Industrial Revolution that is technology driven. Universities need to keep abreast with the constant change and reskill not only their staff in the workforce but also community in the society at large so that they can keep up with divergences as conventional jobs are being taken over by machines. The entrepreneurship education of Malaysian IHLs aim to achieve three main objectives; (1) to produce graduates with entrepreneurial mindset and capabilities; (2) to increase the number of graduate entrepreneurs and; (3) to nurture entrepreneurial academics and researchers. Thus, the main thrust of entrepreneurship development policies of IHLs in Malaysia is to promote and strengthen national entrepreneurship development in a more organized and holistic manner.

Perceptions of Students in the Use of Technology in Higher Education - A Global Overview

Abey Kuruvilla and Michael Swanson

University of Wisconsin-Parkside

Abstract

This paper offers a viewpoint on student perceptions of technology utilized in higher education across multiple countries. The purpose is to better understand how countries vary in the utilization of technology through the perceptions of students that are end-users. Technology implementation in higher education has the primary purpose of improved learning outcomes and enhanced learning environments. This paper looks at both through the methods of a literature review, and samples of Universities in three different countries spread geographically. The paper seeks to analyze examples of technology implemented and the resulting student perceptions.

Virtual Internships in Higher Education: Impact on Career

Rashmi Aggarwal and Parminder Kaur

Chitkara University

Abstract

The study is important as business students need not to be restricted to a classroom or traditional way of learning business practices, rather they should be exposed to what is practically done and needs to update them in order to increase employability and better career opportunities for them. Objectives: 1) To analyze the importance of virtual/ computer mediated internships. 2) To study the impact of virtual internships on career opportunities. Research methodology: The study is based on primary as well as secondary sources. Questionnaire was distributed to 118 business students. Out of them 96 respondents filled in the questionnaire and further 82 were used for further analysis and were taken into consideration. The responses were analyzed using multivariate data analysis. Originality/value: The paper would be relevant for innovation seeking educational institutes and business students aspiring better career opportunities.

Findings: The paper provides a detailed explanation about how these virtual internships can create better career opportunities for students by making them more competitive in an industry and how educational institutes can promote virtual learning instead of rote learning.

Key words: Virtual internships, higher education, educational institutes, career opportunities

Hawa- A Nautical Mile away from Blue Flag

Mahesh M and Afsal Ansary

Mahatma Gandhi University

Abstract

In Kerala, we have more than 30 beaches which have the capability to attract visitors around the globe. But lack of knowledge and inappropriate treatments made them undiscoverable. Even the known beaches are mistreated and less utilized. Beaches are the primary attractions that a foreign tourist looks upon a country. It also generates lot of revenue to the community around it and to the country itself. Even though the richness in our beaches, done nothing to the economy when compared to the world destinations. To make our beaches world renown and attract people we need to do some exercise. The best thing can be done to make the beach world famous is getting a 'BLUE FLAG CERTIFICATE'. The iconic Blue Flag is one of the world's most recognized voluntary eco-labels awarded to beaches, marinas, and sustainable boating tourism operators. It is basically required compulsory criteria like great water quality; meets high safety standards; barrier free; waste disposal facility; no access to pets and must working hard to protect local shorelines and ecosystem. It gives equal importance to quality and sustainability. Unfortunately from India there is only one beach is awarded the blue flag certificate that is chandrabhaga beach from Odissa . Whereas Spain has 566 beaches got that title. Why we are not able to produce such number of beaches to that benchmark. Actually we can, at least from Kerala we can create one such destination- HAWA BEACH in Varkala. It is one of the most fascinating beaches of Kerala which has the standard of world class. If we are able to meet the compulsory criteria out of 33 criteria we will get the blue flag certificate and if we do voluntary criteria it will help to give benefits to get the award. In the Hawa beach we have some of the given standards but need to work more on the compulsory criteria. If we work accordingly the result will be awarded in the form of boost in tourism and local economy; national and international recognition; positive media relations and marketing; investments; promotion of healthy recreation and improved education about local ecosystem. Keywords: Blue Flag, Certifications, Destination, Criteria

Paper Cup Recycling Model

Yash Bang

University of Wisconsin – Parkside

Abstract

Paper-cups which are an alternative of plastic-cups have gained momentum in recent times towards an effort of a cleaner and greener environment. But these paper cups when disposed of cannot be directly recycled because they have a thin layer of plastic coating to avoid the paper getting wet, thus making them not recyclable. This research aims to reconsider the prevailing waste management system in the paper cup industry and provide a model to ensure proper recycling of the paper cups and bi products associated with it. This research would activate the movement of the wastepaper from paper cup industries and the dumped paper into the proper recycling procedures. In the process of removing the plastic-coating, the paper gets converted into pulp. The pulp can again be converted into the paper. Thus, I believe that this model would ensure the successful recycling of paper waste, multiple utilization of the paper, reduce deforestation for extraction of pulp in order to meet increasing demand, easier availability of paper, reduce imports of raw paper.

Keywords: Papercup recycling, Recyclable waste

Introduction

There has been a tremendous increase in the consumption of paper cups since the government has put a ban on the production of plastics cups. This is because plastic cups are not recyclable thus posing a threat to the environment.

However, the paper cups that we use are also not recyclable because the inner side of the paper cup has a thin layer of plastic coating. It is this PP (Polyethylene) that keeps the paper from absorbing liquid contents. The plastic coating is about 5% and the remaining 95% is the paper.

There is a larger dependency on making the recycling process efficient as paper requires cutting down trees creating pressure on the ecological imbalance. Also, it has been estimated that recycling one ton of wastepaper would save 70% of raw material, 70% of water, 60% of coal and 43% of the energy required to make paper from wood. It also saves around 17 trees, 2.5 barrel of oil, 31780 liters of water, 4100 KW hours of electricity and 4 cubic meters of the landfill by recycling one ton of wastepaper. (*Discussion Paper_Recycling_WastePaper*, 2011)

The problem with the post-consumer wastepaper cup recycling is that there is a lack of dedicated wastepaper cup collection system from the source (households, corporate offices, restaurants, etc.) and recycling process and integrating with the locally established paper mills industries for paper production.

In this paper, I would suggest the procedure to recycle post-consumer wastepaper cups into pulp which can be utilized by paper mills to produce a high-quality paper. Thus, efficient waste management systems for paper cups would be established benefitting the entire paper industry, encouraging the use of paper cups as a better alternative of plastic cups, reduce import bills for raw material, ensure self-sufficiency and proper utilization of resources.

Model Description

Post-consumer wastepaper cups are the waste generated as a result of final consumption by the consumer. This consumer waste is generated on a daily basis.

The municipal corporation either collects the garbage by itself or it outsources it to third parties. The municipal corporation should take active initiatives to bring awareness in the society to maintain separate bins for recyclable waste and non-recyclable waste.

A notice to all the houses, corporate offices, restaurants, etc. throughout the country should be issued, that they should maintain recycled and non-recycled waste separately otherwise the garbage would not be collected from the respective sources.

The recycled waste should then be segregated into paper cup waste and other waste.

The government or the outsourced third party should supply the segregated paper cup waste to local paper mills to carry out the process of recycling.

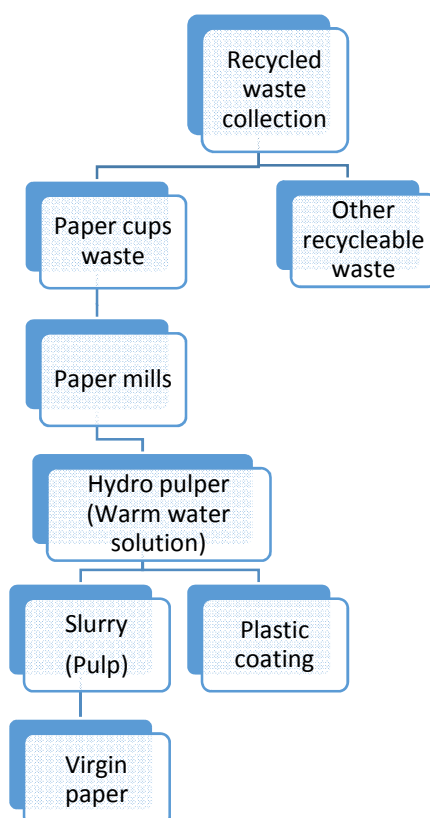
It now becomes eligible to carry out the recycling process for the removal of the plastic coating from the paper. The waste should be left for softening in a warm water solution with or without additives in a hydro-pulper. A hydro-pulper is a giant blender for separating polyethylene from paper. As a result, the polyethylene coating is separated from the paper slurry. The impurities are filtered out leaving a high-grade slurry that can be used as a raw material by the paper mills to convert high-quality virgin paper and packaging materials from this slurry (pulp). (*James Cropper Develops Technology to Recycle Disposable Coffee Cups*, August 2015).

James Cooper, UK based paper-producer, has introduced this award-winning innovative process named CupCycling technology for recycling of coffee cups into beautiful

cups and consumer packaging. They have developed this sustainable solution to avoid catastrophic climatic change and take a step towards restoring the health of the environment. (*James Cropper Develops Technology to Recycle Disposable Coffee Cups*, August 2015)

For the paper mills owners, this would ensure easy availability of raw materials at cheaper costs which in turn would reduce the process cost thus creating a win-win situation in the supply chain.

Thus, in the model so suggested the municipal corporation's active involvement is required for efficient garbage collection and distribution to the local paper mills. If it outsources this to the third party, then it should be made sure that proper collection and distribution of post-consumer paper cup waste takes place.



Flow diagram of the model of collection and distribution of post-consumer paper cup waste

Conclusion

With the model suggested in the earlier section, we would be able to remove the impurities from the paper cups and thus be able to make paper cups recyclable. This could be possible at a larger scale with the active involvement and the initiatives of the

government. The municipal corporation would be able to improve the waste management system. This would also reduce the environmental issues as paper ends up in the landfill and decomposing of paper releases the greenhouse effect causing methane gases. With this step, the paper cup industry would be able to reduce dependency on import of raw materials, ensure easy availability of raw materials at lower costs, of improving efficiency in the resources utilized, would be able to save natural resources. This would improve the paper industry as a whole and move a step towards sustainable development.

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Plastic Waste Management Machine

Konda Reddy Bogala & Noor Mahammad Nalband

Abstract

As we all know that plastic plays a crucial role from the beginning of the day to the end of the day. Due to its extensive properties like feasibility, Strength, and Cost-effective even more., on the other had it is non-bio degradable, it makes it vulnerable for the environment. So we need to serious action towards it for recycling. So for creating sustainable globalization, each and everyone should participate and contribute towards it. For this project, we had designed a machine named 'Plastic Waste Management Machine(PWMM)'. It is a machine that can recycle plastic waste such as "cool drink bottles, water bottles" into a useful product such as "dustbin" instantaneously on the spot itself. It is a fully automated machine equipped with required sensors for precise working. This machine can be easily accommodated in the space of 2meters length, half mete width and a height of 2 meters. With this machine, we can recycle plastic waste instantaneously into a useful product as well as creates responsibility and awareness among the people.

Disaster Management in the Planetary Context

Roby Rajan

Abstract

Whenever a disaster strikes, the response on the part of national and international agencies is often predicated on established institutions of emergency preparedness and the discourse of disaster management. This paper approaches the topic of disaster from a planetary perspective and examines some of the aporias in the discourses of disaster management and emergency response, and whether these discourses are appropriate to the planetary context of disasters.

Plasma Modification of 3D Printed Scaffolds for Tissue Engineering

Blessy Joseph, Neethu Ninan, Yves Grohens, Sabu Thomas
Mahatma Gandhi University, University of South Australia, University of South Brittany

Abstract

Polymer technology has enabled the production of green, sustainable, energy-efficient, high quality, cost effective polymeric materials that find use in wide array of applications. Polymer scaffolds have been used to provide a bioactive environment in which cells adhere and proliferate. This provides new avenues for tissue engineering. The synthetic polymers such as poly (ϵ -caprolactone) (PCL) have attracted wide attention for their biodegradation in the human body and are used for tissue engineering. Several methods have been practiced to create highly porous scaffold including solvent casting/ salt leaching, gas foaming, phase separation, electrospinning and 3D printing. There has been a constant demand for sustainable and cost effective solutions for tissue engineered constructs. 3D printed structures are highly attractive as they provide opportunities to design patient specific scaffold or organs. Introduction of nanoparticles into the polymer matrix results in nanocomposites having enhanced mechanical and biological properties. However since PCL is highly hydrophobic, this might affect cell interactions with polymer matrix. Plasma modification is one of the promising methods used for surface modification of polymers. In the present study nanoparticles were incorporated into plasma modified poly (ϵ -caprolactone) scaffolds in order to develop a potential wound dressing material. The wound dressings developed by 3D printing were evaluated for their morphology, contact angle, tensile strength and cellular response.

Keywords: Biodegradable, tissue engineering, biocompatibility, 3D printing.

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Mahatma Gandhi University
Kottayam, Kerala, India
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