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Editorial

Editorial

This second issue of the 14th volume consists of four research papers. As a continuous practice, we strictly adhere to double-blind peer review before we finalize the papers for publication.

Prof Bhaskar Sailesh and Prof Vishnu Jingade, in their paper entitled, **Backpacker Tourism -A Tool for Sustainable Development** carried out a study on Backpacker tourism. This study examine if there is a link between Backpacking and Sustainable tourism and tries to understand how backpacking can aid in the sustainable development of destinations. The study is based on secondary literatures. An evaluation of how Backpacking tourism can assist in Socio-cultural, Environmental and Economic aspects destination development which are also considered as the three pillars of Sustainability. Finally, the paper concludes by offering an insight of the future trends of backpacking tourism and its relevance for Sustainable Development.

Dr Saravana Kumar V and Dr Kalpana Venugopal in their paper entitled, **Effect of Stress on job satisfaction mediated by job commitment among public sector bank employees,** carried out a study to develop a model framework and assess the direct effect of stress on job satisfaction mediated by job commitment among employees working in select public sector banks. The objectives framed for the present study on the basis of the identification of the relevant statistical techniques like, Percentage analysis and Structural Equation Model. It is found that although, there is some degree of stress existing among employees working in the public sector banks it does not affect the commitment and job satisfaction of the employees.

Mr. Bhaskar Sailesh and Mr. Vishnu Jingade in their paper entitled, **Knowledge and Sensitivity of Youths Travelers towards Environment-Friendly Tourism,** study approaches from the perspective of environmental knowledge and probes tourists' behavior to facilitate sustainable tourism development, and constructs a sustainable tourism development model by integrating Environmental Knowledge, Environmental sensitiveness and Environmentally Responsible Behavior. The study hypothesis that higher levels of tourists' Environmental Knowledge lead to Environmental sensitiveness which triggers Environmentally Responsible Behavior. Data for the was collected through survey questionnaires. A total of 310 questionnaires were distributed of which 285 were valid. Correlation was used for analysis. The results indicated that when tourists are highly sensitive to the attraction, they are more likely to exhibit Environmentally Responsible Behavior. This study pioneers the integration of all three constructs in a sustainable tourism behavior model for tourists travelling to coastal destinations.

K. Geetha, S.Venkata Ramana Reddy, B. Sarojamma, and P.V. Ramana Murthy in their paper entitled, **Regression Models for Wind Speed data,** carried out a study on Wind speed and its a vital role for rainfall and all other atmospheric conditions. Statistical models like, air fitted three regression models, i.e, Log Regression model, Trigonometric Regression model, Multiple regression model by taking dependent variable wind speed and maximum temperature, minimum temperature, time and visibility as independent variables. For choosing the best model among these three, we are using Root Mean Square Error (RMSE} criteria. The best fitted model for data is Log Regression Model when compared with Multiple regression and Trigonometric Regression.

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Backpacker Tourism – A Tool for Sustainable Development

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Key Words:

Backpacking,

Sustainability,

Sustainable Tourism,

Tourism Impacts,

Backpackers

Abstract :

Backpacking is a form of low-cost, independent travel. It includes the use of public transport; inexpensive lodging such as youth hostels; often a longer duration of the trip when compared with conventional vacations; and typically an interest in meeting locals as well as seeing sights. On the other hand, Sustainable Tourism is development of a specific destination that meets the needs of present population of tourists and local communities without compromising and limiting the ability of future generations to meet their own needs. The activities of a backpacker during their travels are of such nature that they directly or indirectly contribute to the destinations' economy, culture and environment. Therefore, the study goes deeper to examine if there is a link between Backpacking and Sustainable tourism and tries to understand how backpacking can aid in the sustainable development of destinations. The study is based on secondary literatures. The paper starts with an introduction of Backpacking tourism and Sustainability. This is followed by an evaluation of how Backpacking tourism can assist in Socio-cultural, Environmental and Economic aspects destination development which are also considered as the three pillars of Sustainability. Finally, the paper concludes by offering an insight of the future trends of backpacking tourism and its relevance for Sustainable Development.

1. Introduction

The term "backpacker" is now widely used, especially since the rise of sustainable tourism, because it is by itself a form of this type of tourism. On the other hand, it is more complicated to put a precise definition on it. This is most certainly due to the fact that the definition evolves, according to the time, the expectations, the desires, and each person.

When we talk about backpacker, we can first refer to the inherent initiatory journeys. An initiatory journey is a probation, a "testing" of the person who participates in it. It is a means, through many and new experiences to move into "adulthood" (Huang & Shih, 2009).

The year 2017 represents the year of all the challenges for tourism: it is the international year for the development of sustainable tourism. Many challenges are put forward, through all forms of existing tourism. The backpacker is recognized and differentiated from tourists by his motivations and expectations of a trip (Chao et al, 2011). Indeed, this one is more turned towards the search for authenticity of a trip. This is one of the main motivations that pushes them to leave. This authenticity is found in the means used to leave during the trip and to come back. But it is also found in the meeting with the locals, the exchanges made and the links created. In addition, its travel criteria and the sense of freedom sought during backpacking trip are in total opposition to mass tourism.

2. Literature review

Since the industrial revolution, the average global temperature has increased and has reached unprecedented levels. It is widely accepted within the scientific community that most of the recent Greenhouse gases (GHGs) released in the atmosphere is originating from anthropogenic activities. Earlier studies have mentioned that tourism industry being a an important source of revenue for several economies is facing the impacts of climate change. It is only recently that tourism is recognized as a significant contributor of GHGs. According to UNWTO - UNEP - WMO (2008), tourism industry is responsible for over 5% of total global emissions through energy use, land use change, improper waste disposal and most importantly due to the use of fossil fuels (Gossling, 2002). In fact, studies on tourism and environment have shown that transport sector may be responsible

for over 90% of tourism's overall contribution to global climate change (Gossling, 2002; Hares et al, 2010), with air travel dominating these emissions (Becken, 2007).

The current growth, and predicted future growth, of international tourism is a major concern. With expanding numbers of international and domestic tourists forecasted for the coming years; international tourist arrivals, are forecasted to reach 1.6 billion by 2020 compared with 922 million in 2008 (UNWTO, 2009). With an increase in international tourism, the amount of Greenhouse gases are also expected to increase leading to further warming of our planet. Although mitigation measures are effectively in place in several destinations, it is still unclear if tourists' are actively involved in these measures (Sailesh, 2016).

Tourism industry is for the most part depends on climatic and natural resources (Gossling and Hall, 2005). For example, cooler climates generally represent preferred environments for activities such as skiing and natural resources such as fresh water, biodiversity, beaches or landscapes are required for nature based tourism. Global environmental modifications threatens these foundations of tourism through climate change, alterations in global biogeochemical cycles, land alterations, loss of non-renewable energy sources and loss of biodiversity (Sailesh, 2018).

In the current age of free information and technology to access it, people have a better awareness of climate change and its impacts on society and environment (Tiller et al, 2013). Earlier studies have found that tourists' are aware of the impacts of climate change on their daily lives (Becken et al, 2007) but are unaware of GHGs released from tourism activities. Tourists' have also shown resistance to adopt an environmentally responsible behavior during their travels. Tangible elements like health, finances and other societal issues are given more importance when compared to climate change (NZBCSD, 2009). For many tourists, climate change actions are not considered as they regard it as an issue which cannot be dealt with at a personal level (Lorenzoni & Pidgeon, 2006; Lorenzoni et al, 2007; NZBCSD, 2009). A study conducted in Germany by Lubburt (2001), concluded that concern for the environment had no impact on the choice of holiday destinations. Similar findings were also witnessed in studies conducted in New Zealand (Simmons, 2005; Schott, 2006). Certain studies also found that tourists

were unwilling to sacrifice the benefits of travel for the sake of the environment (Becken, 2007; Hares et al, 2010).

There has been much debate over the reasons underlying the lack of environment friendly decision making in spite of being aware of climate change impacts. According to Stoll-Kleemann et al (2001), displacement of responsibility and denial contribute to a lack of climate change mitigation. The researcher also claimed that tourists lack the will to abandon what they perceive as personal convenience and comfort in the name of climate change mitigation (Stoll-Kleemann, 2011). Schott, Reisinger and Milfont (2010) further investigated to better understand tourists resistivity towards climate change mitigation. In their research, they built a psychology-informed insight into climate change related barriers to action. Five Psychological barriers were proposed: Geographical, social Psycho-physiological, Temporal and Judgmental. Therefore, some progress has been made with regard to understanding human failure to tackle climate change.

It is clear that a climate change awareness - action gap exists among tourists. Notwithstanding the value of these findings, it is essential to re-examine tourists behavior to inspect if this growing awareness of climate change have triggered any notable changes in their travel behavior (Reiser & Simmons, 2005). Understanding tourists' issues of participating in responsible behaviors toward climate change are important for raising awareness and responsibility among tourists. Also, it is important to understand tourists' perceptions of climate change awareness levels and their attitude towards mitigation actions. Without understanding tourists' perceptions about climate change and its mitigation issues, government and other tourism related industries will not be able to create and implement effective climate change policies (Melillo et al, 2014).

This paper focuses on the role of backpacker tourism in promoting sustainable development in tourism destinations. It provides an insight on this general research theme. Before reflecting on ways in which catering to the backpackers can promote local growth development, the paper raises some concerns about backpacker tourism rather than assuming that they are an inherently desirable submarket. Hence the objectives for this research are:

Objectives:
1) To identify the role of Backpackers in promoting environmental sustainability
2) To examine the economic impacts of Backpacker tourism
2) To analyze the influence of Backpackers on the Socio-Cultural domains of a destination.

3. Research Methodology

This paper is completely based on secondary sources of data which include Peer reviewed articles and papers, Magazines, expert opinions, blogs and other media. Critical analysis of these data was performed to identify patterns, signs, and indications where Backpackers played a role in sustainable development. Data collected from Industry experts by other researchers were also considered in this paper. The time period for the analysis lasted for about three months.

4. Findings of the Study
4.1 Sustainable Tourism

Until a few years ago, sustainable tourism was an unknown term for tourists. However, from the 1960s, the evolution and rapid growth of tourism, especially international mass tourism, helped to create movements and actions to precisely limit this fast and brutal development. Today, sustainable tourism seems to be the best alternative to more responsible tourism and aware of the impacts of tourism on the world. It preserves resources on which the success of tourism depends, while maximizing the positive contribution of this sector(Chao et al, 2011).

Sustainable tourism can be defined as any development in a specific destination that meets the needs of today's population without compromising and limiting the ability of future generations to meet their own needs (Amyx et al, 1994). Sustainable tourism therefore aims to bring positive effects in the long term. It must today coexist with the economy, culture, health, and the protection of natural and built resources. Sustainable tourism thus makes it possible to find a certain balance between the growth of a country's economy, and the preservation of its environment, through alternative forms of tourism, seen previously.

Because the negative effects of tourism on our societies are numerous: poverty, climate change, pollution, exodus of the local populations, degradation of the touristic sites, deforestation, diminution of the biodiversity... Sustainable tourism

concerns the environmental, socio-cultural and economic aspects of tourism. Although this one is more and more applied, its impacts, negative or positive, come always and mainly from the same sources: transport, accommodation and activities.

4.2 Environmental aspects

Safeguarding the environment today is a really important issue, and a great challenge in the development of tourism. Pollution, climate change, loss of biodiversity, acid rains, deforestation ... are all the result, in some part, of mass tourism. These negative impacts occur when the number of visitors is much higher than the ability of the environment to accommodate them, within an acceptable limit of change. Tourism is therefore the cause of excessive consumption and destruction of natural resources, but also for the construction of infrastructure such as roads, airports, resorts, hotels ...

According to some estimations and to give an idea, the aircraft industry would represent between 2 to 3% of the total consumption of fossil fuels in the whole world.

A representative example is the one of Thilafushi Island, in the Maldives. Still a few years ago, this island was as beautiful as all those in the archipelago, an absolute must-see destination for the most wealthy people. Today, this coveted and known island is a kind of garbage. Indeed, it is there that all the wastes of the neighboring islands, since 1993, are thrown, as the photos taken below show(Buckley, 2012).

However, each form of tourism has different effects on the regions visited. For example, backpacking significantly reduces the negative impacts on the environment, mainly through the choice of transport and accommodation. We will see how, in the context of sustainable development, transportation and accommodation of backpackers help to preserve the environment.

4.3 The Socio-cultural aspects

The United Nations Environment Program (UNEP) conducted a synthesis in 2002 about the socio-cultural impacts of tourism. This synthesis first includes the erosion of the cultures, which means the transformation of local cultures, due to the commercialization(for example). The "basic" tourist wishes to find elements he knows during his trip, to feel "at home" while being "elsewhere". This standardization thus affects all the local customs:

folklore, religious rituals, customary events or festivals are not what they used to be. Indeed, local craftmen are therefore making evolve their products according to the expectations of new customers. The "Keechak dance", full part of the traditions and rituals organized for major events or special occasions in Bali, has been shortened, to adapt to the tourists' arrival. This commercialization generates a loss of authenticity in the concerned countries. Apart from the transformation of cultures, we can also find a standardization of these ones. Tourists are looking for infrastructures they know in an environment that is not theirs, especially through chains of hotels, shops or chains of restaurants, not to mention MacDonald's.

The culture shock is also an aspect of socio-cultural impacts. Obviously, tourism leads to a meeting between cultures of various countries that may be totally different from each other. In India or Brazil, the lack of punctuality is not trivial. It is actually very complicated for them to plan something in advance, or just to be on time. The programs always change, leaving everything for the unexpected. It is not a habit for most Western countries. In Brazil, for example, locals tend to be very tactile. People who do not know each other can cuddle, it's not uncommon but surprising for other cultures. The weight of religion in some countries is also huge.

4.4 Economic aspects
According to a World Travel and Tourism Council (WTTC) study realized in 2010, tourism-related activities contributed to 10% of the global GDP in 2016. Indeed, this sector has grown extremely fast since 1970. Today, it is believed to be responsible for more than 1 billion international travelers (Cheng et al, 2013).

It would also contribute to 235 million jobs worldwide, which means about 8% of the total employment. In the least developed countries, tourism represents an opportunity for sustainable economic development, and thus a reduction of poverty, with for example the employment of local populations in tourism enterprises, their participation in the creation of stays, the creation of small local community businesses ...   According to several studies, recent and last years have been the result of a pronounced geographical expansion, in other words a diversification of destinations. Developing countries registered 459 million international arrivals in 2011. Their GDP represents for about 25% of the total GDP related to tourism activities.

Moreover, According to UNWTO, for 46 out of 49 least developed countries tourism is the main source of foreign currencies. But negative impacts can be added to these effects. As just seen, the tourism sector is paradoxically a sector that can cause great inequalities from one country to another. Tourism influences, sometimes too brutal, can also be poorly supported by host societies and local populations. The construction of infrastructures, the flow of tourists ... can lead to disturbances in their way of life. The economic benefits of a developing country may also not be perceived by the local populations. Tourism is therefore a vector of economic development in developing countries, but this does not make it a vector for local development.

This is where sustainable tourism comes in, as well as backpackers. Indeed, consciously or unconsciously, these last ones contribute a lot to local development in the current economic context of already developed countries, but especially and more of those who are still in the process of development. Local development highlights the guarantee of sustainable income for the community. According to Greffe, it is "a processus of diversification and enrichment of economic and social activities in a territory from the mobilization and coordination of its material and immaterial resources and its energies". Indeed, the backpacking highlights local initiatives of small communities in developing countries.

The first idea relates to the budget of backpackers. Indeed, as mentioned above, backpackers travel light and cheap. Accommodation against work is therefore an excellent way to be housed free of charge, while participating in the local development of the population. Because they have a low budget and low (or non-existent) income, backpackers need to work if they want to continue their journey. Thus, they represent a mobile and flexible workforce. Most of them find small jobs when they travel. A prime example is the picking of fruits or vegetables, depending on the season (Fryxell & Lo, 2003). The remuneration for this kind of work depends of the basket, not on the time. Some local works are close to the type of tourism known as "solidarity". Indeed, backpackers can have the opportunity to help some populations in their projects of community development, safeguarding crops, animals and other wildlife.

Due to the time, flexibility and travel time of a backpacker, many people also make prolonged "stops" in some villages, some families. Indeed,

some local works are passionate and are admired by the backpackers, who decide to stay not only to help but also to learn. Some local businesses are supported by backpackers. For example, many craftmen are especially admired by the backpackers. These ones can therefore decide, with the agreement of the local populations, to stay and help in the manufacture of handicrafts: weaving, sculpture and pottery.

5. Conclusion

Although backpackers have a low budget, they remain however a segment of travelers who spend more in terms of local expenses. This again refers to the fact that backpackers are looking for unique, different, and authentic experiences. Backpackers have a financial impact on a wider geographical area than tourists, as they move a lot more. They bring benefits to remote or economically disadvantaged areas, those where "mass" tourists will never come. For example, "mass" tourists buy their bus or train tickets in advance for transfers withinthe country, compared to the backpackers who will buy them on the spot (Dolnicar and Grin ,2008). They make local traders work, who are more likely to sell on the spot. Another representative example is the one of comparisons of economic contributions during trekking, between "independent" trekkers and trekkers taking an ecotourism trip to Nepal. The expenses of the tour group were $31 per day and per person, those of independent trekkers were $6.5 per day and per person (Awang & Hamid, 2015).

A backpacker makes sustainable tourism from the moment he respects the environment, the cultures and traditions, as well as the local populations. More generally, we talk about sustainable tourism when a destination as a whole is respected. However, sustainable tourism is not only a practice, it is also a state of mind. The backpacker, like any other traveler, is not spared by clichés. In addition, with new trends including new technologies, as well as the evolution of backpacking, is the backpacker still responsible today?

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Effect of Stress on Job Satisfaction Mediated by Job Commitment Among Public Sector Bank Employees

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Key Words:

Stress,

Job satisfaction,

Commitment

Abstract

In today's world, working in an environment without stress and be a committed person to the organization is a great achievement. Job satisfaction and stress will affect personal life too. In this study the researcher finds to study the effect of stress on job satisfaction mediated by job commitment among public sector bank employees with reference to Bangalore. The study is descriptive in nature and depends on primary data. The objective of the study is to develop a model framework and assess the direct effect of stress on job satisfaction mediated by job commitment among employees working in select public sector banks. The objectives framed for the present study formed the basis of the identification of the relevant statistical techniques like Percentage analysis and Structural Equation Model. It is found that although, there is some degree of stress existing among employees working in the public sector banks it does not affect the commitment and job satisfaction of the employees.

1. Introduction

Job satisfaction as involving cognitive, affective and evaluative reactions or attitudes and states it is "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience[1]." Job satisfaction is a result of employees' work at the end of the day how well they have done the given project in their field. It is generally recognized in the organizational behavior field that job satisfaction is the most important and frequently studied employee attitude. Although theoretical analyses have criticized job satisfaction as being too narrow conceptually[2], there are three generally accepted dimensions of job satisfaction. First, it is an emotional response to a job situation, Second, it is often determined by how well outcomes meet or exceed expectations and Third, it represents several related attitudes.

Job commitment is the feeling of responsibility that a person has towards the mission and goals of an organization. When an individual has job commitment, then they will focus on the given task and perform the task and help the company to achieve the objectives[3]. First, there is affective commitment, which is concerned with how a person feels about the organization they work in (Ellis & Dick, 2003). Second, Continuance commitment is the extent to which a person perceives it would be desirable or undesirable to leave the organization (Ellis & Dick, 2003). Thirdly there is a normative

part to commitment which deals with a person's moral orientation to the organization and then especially the sense of responsibility or obligation to their organization (Ellis & Dick, 2003). These components are all part of commitment to an organization but are independent, which means that when a person effectively committed to their firm, this does not have to be the same for normative or continuance commitment. From now on, job commitment will imply the whole concept of commitment and no distinction between commitment components will be made.

Stress is usually thought of in negative terms. It is thought to be caused by something bad. Stress as a condition arise when people interact with individual with in the environment, outside the environment, changes within themselves, excessive psychological or physical demands etc. Categories of stressors affecting occupational stress viz., Individual Stressors, Group Stressors, Organizational Stressors and extra-organizational stressors.

The tremendous growth in the banking sector during the last six and half decades is appreciable. Indian banking sector are increasingly focusing on adopting integrated approach to risk management. Banking sector have grown bigger with the help of latest technology, providing innovations and monetary tools & techniques.

Particulars	No of Banks
Public Sector Banks	27
Private Sector Banks	21
Foreign Banks	49
Regional Rural Banks	56
Urban Co Operative Banks	1562
Rural Cooperative Banks, In addition to Cooperative Credit Institutions	94384

Source: www.ibef.org/industry/banking-presentation

2. Statement of the problem

In this study, the researcher have created a conceptual model supporting the theoretical framework based on the direct effect of stress on job satisfaction mediated by job commitment. The attributes were examined taking Job Satisfaction as the endogenous variable for the study and the researcher had taken 560 samples respondents from select Public sector banks in Bangalore. Many researchers have conducted the study to examine the stress impact on Job Satisfaction in banking sector, however, the researcher made a novel attempt considering select public sector bank employees to understand the fact. The unique aspect of this study is that the researcher made an attempt in identifying the factors causing stress, effect of stress on job satisfaction as a direct effect also the effect of organizational commitment on job satisfaction as mediation effect among the bank employees working in select public sector banks in Bangalore city and this study is limited to this specific geographical location. Therefore, the researcher conducted the study by collecting the information through opinion survey method and tried to identify the stress on organizational commitment having impact on job satisfaction. Therefore it becomes important to evaluate the Stress mediated by Job Commitment having impact on Job Satisfaction.

3. Objectives of the study

To develop a model framework and assess the direct effect of stress on job satisfaction mediated by job commitment among employees working in select public sector banks.

4. Methodology

The study is descriptive in nature and depends on primary data. The methodology of this study includes the description of research design, sample size, sampling technique, development and description of tool, data collection procedure and method of analysis. The validity of a research depends on the systematic method of collecting the data and analysing them in the sequential order. In the present study, extensive use of primary data were collected systematically. The measure of Cronbach's Alpha was used. Both Primary and Secondary data were used for the study. The objective of the study had been accomplished with the help of primary data collected from 560 Public sector bank employees through a structured questionnaire. The Secondary data are the data were are also used in this study. Research instruments were prepared on the basis of the objectives set for the study. Questionnaire was prepared for the collection of primary data. Selection of sample from each bank was carried out based on stratification taking into consideration the designation of the respondents in each branch viz. Manager (1 No.), Assistant Manager (1 No.), Sub-Staff (1 Nos.), Officers (4 Nos.), Clerk / Attendant (3 Nos.) represented 10 Nos. was uniformly selected using Stratified Proportionate Random Sampling Technique. The total samples identified among public banks were 560 employees. The objectives framed for the present study formed the basis of the identification of the relevant statistical techniques like Percentage analysis and Structural Equation Model.

5. Limitations of the study

The present study was limited up to 8 select public sector banks, hence it lacks universal applicability. Some respondents were hesitant to answer the questions hence, there may be some chances of bias where the respondents may not be serious in giving their opinions. One cannot judge an individual to be always consistent. It may be changed over a passage of time

6. Data analysis and results

The effect of stress on job satisfaction mediated by commitment of the public sector banks and the results are presented hereunder.

6.1. Demographic variables

The study is conducted to analyze the Job

commitment leading to stress and Job Satisfaction among the Employees working in select Public Sector Banks in Bangalore. Demographic variables of the employees such as age, gender, marital status, educational qualification, designation, monthly income and experience are considered for the study and are presented hereunder.

Table 1: Demographic Characteristics of the Respondents

Sl. No.	Demographic Variables	Respondents (560 Nos.)	Percentage (100%)
1.	**Age**		
	20 to 30	209	37.3
	31 to 40	224	40.0
	41 to 50	127	22.7
2.	**Gender**		
	Male	347	62.0
	Female	213	38.0
3.	**Marital Status**		
	Married	431	77.0
	Unmarried	129	23.0
4.	**Educational Qualification**		
	Graduates	120	21.4
	Post Graduates	148	26.4
	PG with Professional Qualification	114	20.4
	ITI / Diploma	65	11.6
	Others	113	20.2
5.	**Monthly Income**		
	Below Rs.20000	61	10.9
	Rs.20001 to 30000	142	25.4
	Rs.30001 to 40000	123	22.0
	Rs.40001 to 50000	66	11.7
	Above Rs.50000	168	30.0
6.	**Designation**		
	Manager	56	10.0
	Assistant Manager	56	10.0
	Sub-Staff	56	10.0
	Officer	224	40.0
	Clerk	168	30.0
7.	**Experience**		
	Less than 2 years	122	21.8
	2 to 4 years	163	29.1
	4 to 6 years	120	21.4
	Above 6 years	155	27.7

Source: Computed from Primary Data

From the above table it is clear that maximum (40%) of the respondents belong to the age between 31 and 40 years, 37.3% of the respondents belong to the age group of 20 to 30 years and the remaining 22.7% of the respondents belong to the age group of 41 to 50 years. Most (62%) of the respondents are male and 38% of the respondents are female. Majority (77%) of the respondents are married and 23% of the respondents are unmarried. 26.4% of the respondents are Post Graduates, while 21.4% of the respondents are Graduates, 20.4% of the respondents possess professional qualification, 20.2% of the respondents are having other qualifications and the remaining 11.6% of the respondents are technically qualified with ITI / Diploma. Maximum (30%) of the respondents are having monthly income above Rs.50,000, followed by 25.4% of the respondents are having monthly income between Rs.20,001 and Rs.30,000, while, 22% of the respondents are having monthly income of Rs.30,001 to Rs.40,000, 11.8% of the respondents are having monthly income of Rs.40,001 to Rs.50,000 and the remaining 10.9% of the respondents are having monthly income below Rs.20,000. Maximum (40%) of the respondents are engaged as Officers in the select Public Sector

Banks, followed by 30% of the respondents are working in Clerical Category, while, 10% each of the respondents are designated as Manager, Assistant Manager and Sub-Staff in the select Public Sector Banks respectively. It is observed that 29.1% of the respondents are having 2 to 4 years experience in the select Public Sector Banks, followed by 27.7% of the respondents are having experience above 6 years, 21.8% of the respondents are having experience below 2 years and the remaining 21.4% of the respondents are having experience between 4 and 6 years.

6.2. Impact of stress on job satisfaction mediated by job commitment

Initially, the Direct Affect was found and based on the results of the impact, the mediation variable was analysed. The first two variables are Stress among Employees of Public Sector Banks measured to find the direct effect on Job Satisfaction. Later, mediation variable was introduced with respect to Job Commitment viz. Affirmative Commitment, Continuance Commitment and Normative Commitment individually and the results are derived.

Figure 1: Direct Effect of Stress and Job Satisfaction Model
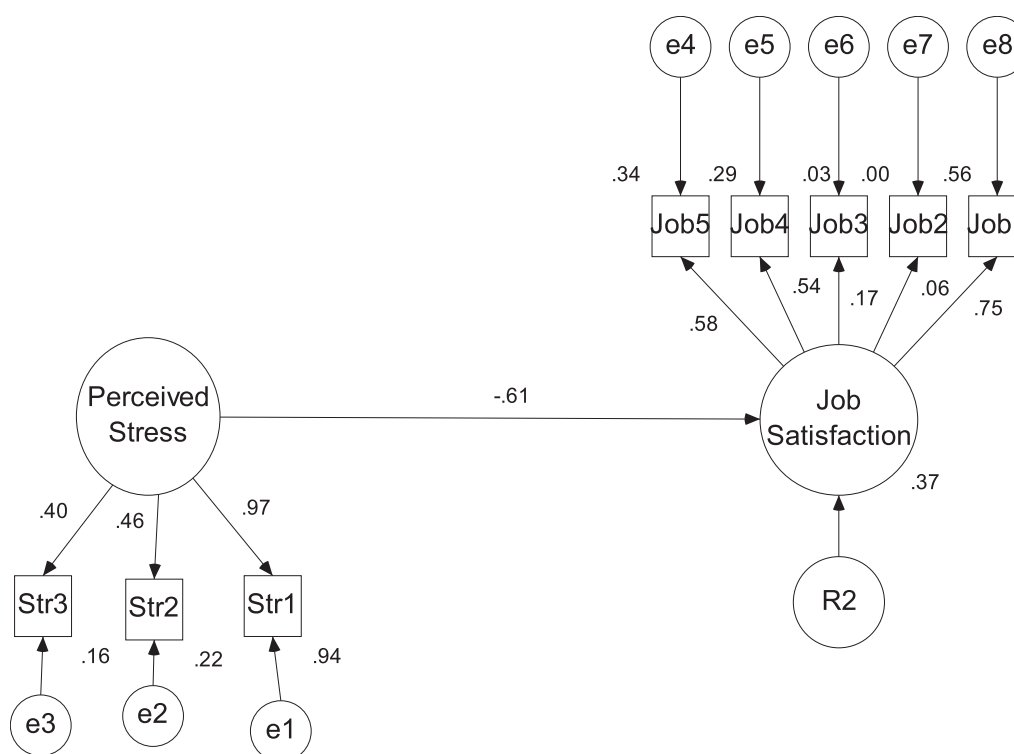
Hypothesis:

Stress have inversely significant effect with Job Satisfaction

Table 2: **Regression Weights: (Group number 1 - Default model)**

	Estimate	S.E.	C.R.	P
Job Satisfaction <--- Stress	-.277	.038	-7.224	***

The estimates show -0.277 and the significance is 0.000 reveal that there is significant direct effect of **Stress** on Job Satisfaction and therefore, it is proved that the stress is inversely significant with Job Satisfaction.

STRESS ON JOB SATISFACTION MEDIATED BY AFFIRMATIVE COMMITMENT
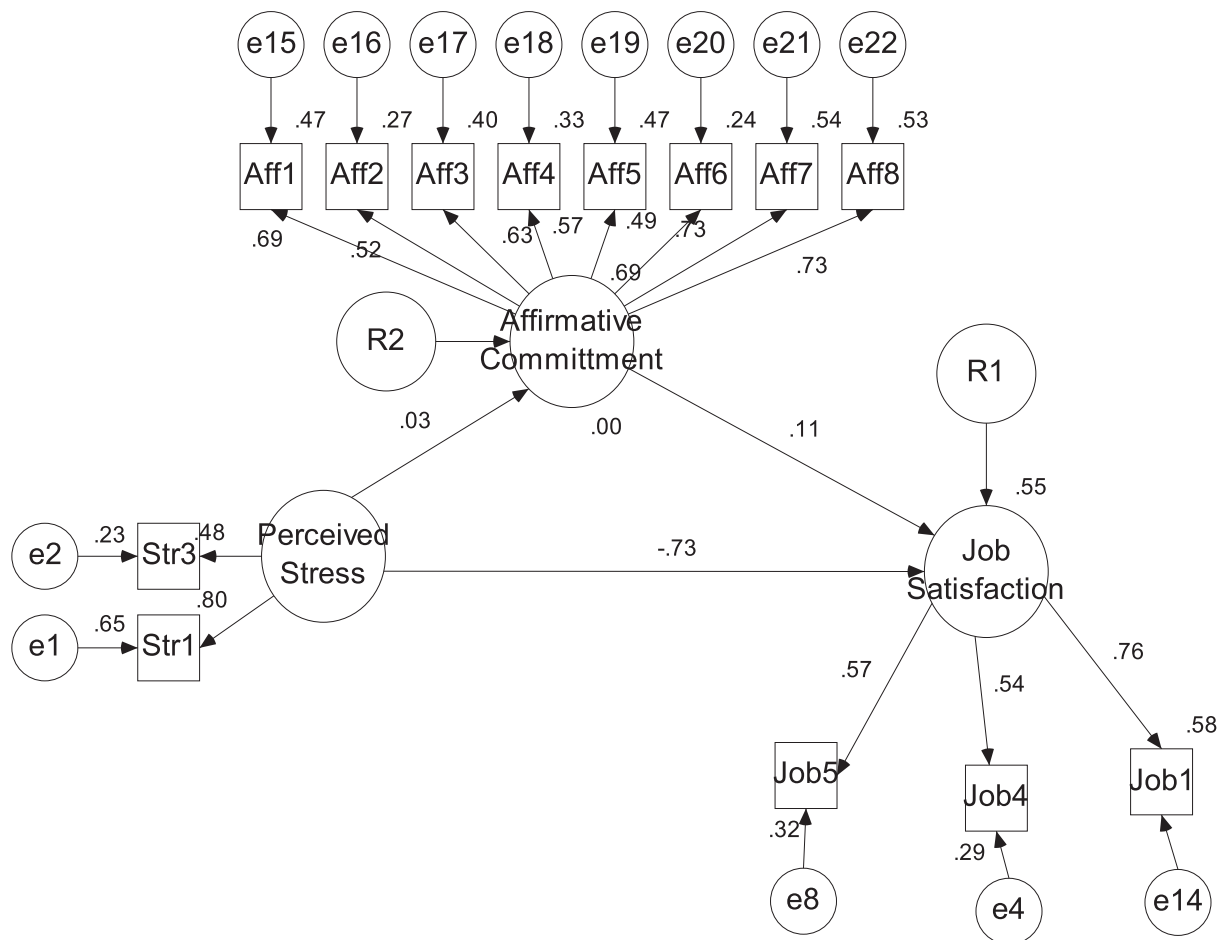
Table 3: **Regression Weights: Affirmative Commitment with Mediation Effect**

			Estimate	S.E.	C.R.	P
Affirmative Commitment	<---	Stress	.009	.015	.617	.537
Job Satisfaction	<---	Stress	-1.021	.139	-7.361	***
Job Satisfaction	<---	Affirmative Commitment	.562	.254	2.216	.027

The Estimates show 0.009 and the significance is 0.537 reveal that there is no mediation effect of Stress on Affirmative Commitment to accept the null hypothesis. Whereas, the estimates show -1.021 and the significance is 0.000 reveal that there is difference in achieving the level of satisfaction due to stress had gone significantly high when the mediator effect of Affirmative Commitment is entered into the model. Also, it is found that there is positive direct effect between Affirmative Commitment and Job Satisfaction (Est.0.562, CR=2.216, Sig.0.027) which shows if at all the employees have affirmative commitment in their job they have to undergo very low level of stress which have not affected their job satisfaction.

Figure 2: Job Stress on Job Satisfaction Mediated by Continuance Commitment

Table 4: **Regression Weights: Continuance Commitment with Mediation Effect**

			Estimate	S.E.	C.R.	P
Continuous Commitment	<---	Stress	-.034	.020	-1.734	.083
Job Satisfaction	<---	Stress	-1.022	.140	-7.304	***
Job Satisfaction	<---	Continuous Commitment	-.024	.186	-.129	.898

The Estimates show -0.034 and the significance is 0.083 reveal that there is mediation effect of Stress on Continuance Commitment at 10% level of significance to reject the null hypothesis. Whereas, the estimates show -1.022 and the significance is 0.000 reveal that there is difference in achieving the level of satisfaction due to stress had gone up significantly when the mediation of Continuance Commitment is entered into the model. Whereas, it isfound that there is no significant positive direct effect between Continuance Commitment and Job Satisfaction (Est.-0.024, CR=-0.129, Sig.0.898) which shows that the employees felt negative effect based on Continuance commitment in their job that leads to stress and dissatisfaction in their job.

Figure 3: Stress on Job Satisfaction Mediated by Normative Commitment
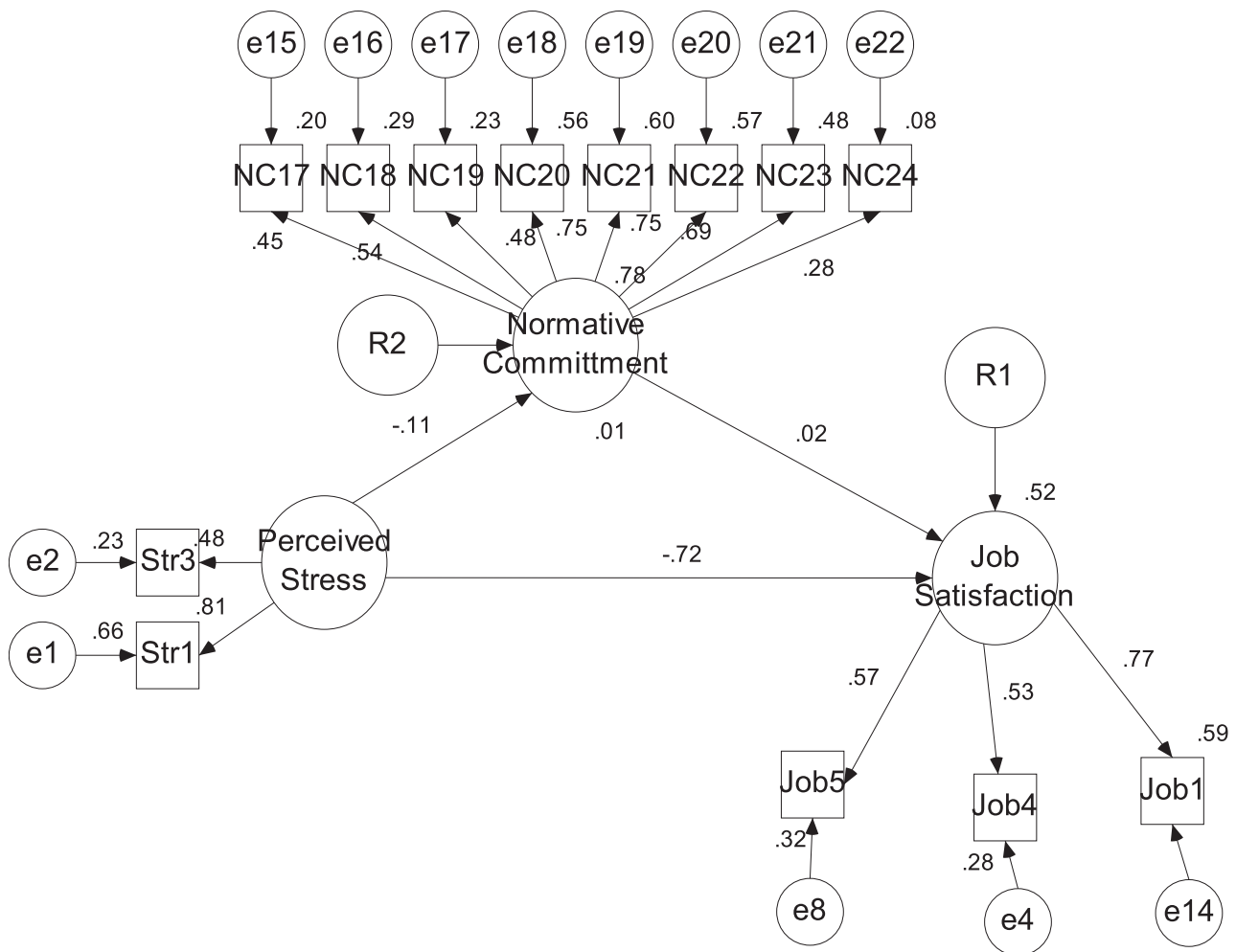
Table 5: **Regression Weights: Normative Commitment with Mediation Effect**

			Estimate	S.E.	C.R.	P
Normative Commitment	<---	Stress	-.019	.010	-1.984	.047
Job Satisfaction	<---	Stress	-.997	.139	-7.174	***
Job Satisfaction	<---	Normative Commitment	.142	.407	.348	.728

The Estimates show -0.019 and the significance is 0.047 reveal that there is mediation effect of Stress on Normative Commitment at 5% level to reject the null hypothesis. Whereas, the estimates show -0.997, sig.0.000 which reveals that there is a difference in achieving the level of satisfaction due to stress had gone up significantly however, is marginally low when compared with the previous mediators viz. Affirmative and normative commitment. While the mediation of Normative Commitment is entered into the model it is found that there is no significant direct effect between Normative Commitment and Job Satisfaction (Est-0.142, CR=-0.348, Sig.0.728) which shows that even though the employees feel positive with respect to Normative Commitment and

Job Satisfaction, the model failed to prove statical significance between the two variables.

6.3. Model summary
The model fit summary refers to how well the model fits the set of observations. Because structural equation modeling is used to test causalities in the proposed model, multiple indices indicating the fitness of the model were extracted from AMOS. To assess the fit of the model TLI (Tucker-Lewis Index and NFI (Normed Fit Index), CFI (Comparative Fit Index), RMSEA (Root mean squared error of approximation) and the RMR (Root mean square residuals) which are presented in the below table.

Table 6: Model Fit Index and Recommended Criteria

Fit index	Recommended criteria
χ^2	
χ^2/df	< 3
Tucker-Lewis index	> 0.90
Normed fit index	> 0.90
Comparative fit index	> 0.90
Root mean squared error of approximation	< 0.08

The summary based on the Job Commitment as the mediation effect to measure the Job Stress have direct effect on Job Satisfaction in the select Public Sector Banks in Bangalore has been assessed based on the fit indices to measure the adequacy of the model.

Table 7: Combined Fit Index of the Model

Sl.	Model	Direct Effect	Mediation Effect		
			Affirmative Commitment	Continuance Commitment	Normative Commitment
1	CMIN	113.578	317.861	316.592	355.241
2	df	19	62	62	62
3	CMIN/DF	5.978	5.127	5.106	5.730
4	RMR	0.548	0.096	0.094	0.102
5	GFI	0.954	0.920	0.929	0.904
6	AGFI	0.912	0.883	0.896	0.860
7	NFI	0.843	0.850	0.908	0.827
8	RFI	0.768	0.811	0.884	0.782
9	CFI	0.864	0.874	0.924	0.852
10	RMSEA	0.095	0.086	0.086	0.092

It is observed that the fit indices based on the variables that helped to understand the level of stress leading to Job Satisfaction mediated by Job Commitment among employees working in select Public sector banks reveals the combined fitness index which shows all the factors were found to have moderate fitness levels and proves that the model shall be modified further to improve the fitness level and also further proceed with the Structural Model.

6.4. DIRECT AND MEDIATION EFFECT

Direct effect was found on the results and the mediation effect on specific variables was analysed. The direct effect was measured to find the impact of stress on Job Satisfaction.

Later, mediation variables were introduced with respect to Job Commitment viz. Affirmative Commitment, Continuance Commitment and Normative Commitment individually and the results are derived. The estimates show direct effect of

Stress on **Job Satisfaction** is inversely significant.

7. SUMMARY OF RESULTS

Stress mediated by Affirmative Commitment having impact on Job Satisfaction

- The Estimates show that there is no mediation effect of Stress on Affirmative

  Commitment, whereas, there is a difference in achieving the level of satisfaction due to stress had gone significantly high when the mediator effect of Affirmative Commitment was entered into the model. Also, it is found that there is positive direct effect between Affirmative Commitment and Job Satisfaction that shows if at all the employees have affirmative commitment in their job they have to undergo very low level of stress which have not affected their job satisfaction.
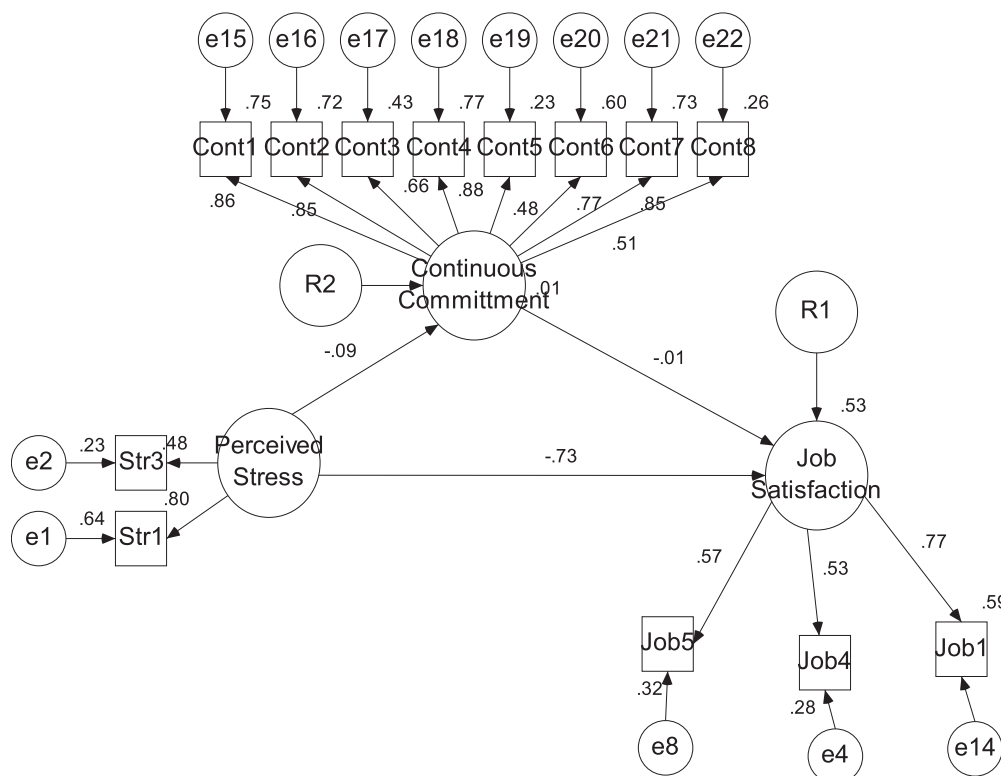
Stress mediated by Continuance Commitment having impact on Job Satisfaction

- The Estimates shows that there is significant mediation effect of Stress on Continuance Commitment at 10% level to reject the null hypothesis. Whereas, the estimates shows that there is difference in achieving the level of satisfaction due to stress had gone up significantly when the mediation of Continuance Commitment was entered into the model. Whereas, it is found that there is no significant positive direct effect between Continuance Commitment and Job Satisfaction therefore, the employees felt negative effect based on Continuance commitment in their job that have lead to stress and dissatisfaction.

Stress mediated by Normative Commitment having impact on Job Satisfaction

- The Estimates shows that there is significant mediation effect of Stress on Normative Commitment at 5% level to reject the null hypothesis. While, the estimates shows that there is a difference in achieving the level of satisfaction due to stress had gone up significantly however, was marginally low when compared with the previous mediators viz. Affirmative and Continuance commitments. Whereas, the mediation of Normative Commitment was entered into the model it is found that there is no significant direct effect between Normative Commitment and Job Satisfaction which

  reveals that even though the employees feel positive with respect to Normative Commitment the model failed to prove stastical significance between the two variables.

Finally, it is observed that the fit indices based on the variables that helped to understand the level of stress leading to Job Satisfaction mediated by Job Commitment among employees working in select Public sector banks reveals the combined fitness index which shows all the factors were found to have moderate fitness levels and proves that the model shall be modified further to improve the fitness levels and also proceed to the Structural Model.

8. Suggestions and conclusion

Even though, there is inverse effect between stress and job satisfaction it was found that the job commitment (considering all three dimensions viz. Affirmative, Continuance and Normative commitment) explored to measure the stress which shows that it does not have any significant impact. Also, the mediation effect of job commitment between stress and job satisfaction reveals that there is no change in the employee opinion even though there is a direct significant effect between stress and job satisfaction. Therefore, it is recommended that whether the job satisfaction have positive impact on job commitment and also stress andits impact on job commitment which will help more to ascertain the actual situations of the public sector bank. Although, there is some degree of stress existing among employees working in the public sector banks it is concluded that the level of commitment was found to be significant with all three aspects which does not affect the job satisfaction of the employees. Therefore, it is recommended that all threes aspects of Job Commitment viz. Affirmative, Continuance and Normative needed to be enhanced and a lso the different aspects of stress should be controlled through equipping the employees to cope with all aspects of the job and job circumstances which can avoid difficulties piling up so high making the employees coming out of nervousness and psychological depression, irritation etc. that shall lead to achieve higher level of job satisfaction among employees working in the public sector bank.

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Knowledge and Sensitivity of Youths Travelers towards Environment-Friendly Tourism

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Key Words:

Environmental behavior,

Sustainability,

Climate Change,

Place sensitiveness,

Place attachment.

Abstract

In the past few decades, Climate Change impacts has affected several tourism destinations. Although several adaptation and mitigation measures are in place, these destinations have found it difficult to overcome these impacts. Earlier studies have concluded that sustainable tourism can help reduce the climate change impacts (Moreno & Becken, 2009; Scott, 2011). According to Dolnicar & Grun (2009), sustainable development in tourism destinations is a global issue and Environmentally Responsible Behavior (ERB) is closely linked to attaining sustainable development goals. This study approaches from the perspective of environmental knowledge and probes tourists' behavior to facilitate sustainable tourism development, and constructs a sustainable tourism development model by integrating Environmental Knowledge, Environmental sensitiveness and Environmentally Responsible Behavior. The study hypothesis that higher levels of tourists' Environmental Knowledge lead to Environmental sensitiveness which triggers Environmentally Responsible Behavior. Data for the was collected through survey questionnaires. A total of 310 questionnaires were distributed of which 285 were valid. Correlation was used for analysis. The results indicated that when tourists are highly sensitive to the attraction, they are more likely to exhibit Environmentally Responsible Behavior. This study pioneers the integration of all three constructs in a sustainable tourism behavior model for tourists travelling to coastal destinations.

1. Introduction

In the past few decades, climate change has affected several tourist destinations. In spite of a number of adaptation and mitigation actions, several of these destinations have found it difficult to overcome these impacts. A number of research identified sustainable tourism as a key to tackle the impacts of climate change (Moreno & Becken, 2009; Scott, 2011). However, not all destinations have been able to adopt sustainability in their operations due high cost, poor management and lack of climate change knowledge (Buckley, 2012). According to Dolnicar & Grun (2009), Sustainable development in tourist destinations is a global issue and Environmentally responsible behavior is closely linked to attaining sustainable development. Environmentally responsible behavior emphasizes on actions that demonstrates concern for the nature by individuals or groups, and measures taken to avert or solve environmental issues (Chao & Lam, 2011). Earlier studies have concluded that general public ignored the importance of their natural environment and because of this Environmentally responsible behavior was not valued.

Tourism industry is for the most part dependent on climatic and natural resources (Gossling and Hall, 2005). For example, cooler climates generally represent preferred environments for activities such as skiing and natural resources such as fresh water, biodiversity, beaches or landscapes are required for nature based tourism. Global environmental modifications threatens these foundations of tourism through climate change, alterations in global biogeochemical cycles, land use, loss of non-renewable energy sources and loss of biodiversity. Environmental Knowledge is the degree of concern regarding the natural environments in which we live in (Amyx et al., 1994; Huang & Shih, 2009). According to Fryxell and Lo (2003) environment related knowledge includes knowledge pertaining to climate change impacts on the environment and livelihood, environmental protection, environmental conservation, ecosystems, etc. In the past, environmental education demonstrated that when individuals have more Climate Change Knowledge, their environmental concern will be stronger (Hines, Hungerford, & Tomera, 1987; Lyons & Breakwell, 1994). Huang and Shih (2009) suggested that people with higher level Climate Change Knowledge will fulfill the responsibility of environmental protection. Wurzinger and Johansson (2006) concluded in their

study that tourists with richer knowledge of the environmental impacts will be more concerned about the environmental issues of visited locations. Environmental sensitiveness on the other hand stresses on individual's concern and respect for the environment (Peterson, 1982). Environmental sensitiveness is a feature among individuals which influences them to have a concern towards the environment (Peterson, 1982). Those individuals who are environmentally sensitive to hold a basic appreciation and concern for the natural environment. When tourists have emotional concern and respect for environment, they will be willing to involve themselves in sustainable practices which demonstrates Environmentally responsible behavior (Kollmuss & Agyeman, 2002) and ensure they cause least impact on natural environments(Steg & Vlek , 2009).

Hence, it is clear that tourists with rich environmental knowledge are more likely concerned about the impacts on the local environments, and tend to be environmentally sensitive. During the last few decades, research on Environmentally responsible behavior of tourists has been widely conducted and discussed. Most of these studies have focused on tourism recreation (Lee, 2011), environmental commitment and obligation (Lee, 2011, Dolnicar & Leisch, 2008), attractiveness (Cheng, Wu, & Huang, 2013) and environmental concern (Wurzinger & Johansson,2006). Although, the contributions of these studies are appreciated and recognized, it is uncertain if tourists' climate change knowledge and degree of environmental sensitiveness has any influence on their ERB. There seems to exist a general lack of understanding of the role of knowledge and sensitiveness on tourists' ERB. Besides, these studies have mostly focused on tourists in general in various destinations (Becken, 2004; Halpenny, 2006; Gossling & Hall, 2006; Steg & Vlek , 2009; Lee, 2011; Chao & Lam, 2011; Ramdas & Mohamed, 2014; Lohmann, 2014). There remains a significant lack of understanding on how much youth tourists know about environment and to what extent are they sensitive to environmental changes. According to Student and Youth Travel Association (2014), the youth traveler population has globally increased and account for over 20% of global tourism. The Federation of International Youth Travel Organization (2003) claimed in their report that young travelers are loyal repeat customers. The organization also urges the travel sector to focus on this segment by offering products specialized to meet the needs of young

travelers. Additionally, the youth travel market is already on its way to become the primary consumer population of the global tourism market. Youth travelers symbolize both future leaders and opinion makers in society and will have a significant influence on travel decision making (Ewert et al, 2005).

Therefore, the aims of the paper is to analyze if environmental knowledge and environmental sensitiveness plays any role in influencing an Environmentally responsible behavior among youth travelers.

2. Methods
2.1 Location Selection
The location for the study were two coastal towns and two hill stations in the state of Karnataka. The coastal towns of Malpe and Murudeshwar were selected because of its popularity as a beach destination as well as pilgrimage destination. The beaches and temples attract several tourists throughout the year. Malpe was selected for the study because of its clean and pristine beaches and also its close proximity to the city of Manipal from where large number of youths come to relax and enjoy.

The two hill stations were Coorg and Kudremukh. Coorg is a popular hill station and is known for its coffee plantations, food culture and beautiful landscape. Kudremukh is mostly known for its National park which is a habitat for a diverse variety of flora and fauna. Although the national park is restricted to 50 visitors per day, tourists come from across the country to visit the nearby temples of Shringeri, Horanadu and Kalasa. Overall, the four destinations put together offers a population of samples belonging to all ages and genders with varied educational levels which makes it suitable for the study.

Besides tourism, the regions itself is considered clean with a healthy carrying capacity. Although climate change impacts are visible in a few regions, it has not affected the local communities or tourists in any significant manner due to the absence of mass tourism. That being said, it is important to ensure that these destinations stay environmentally fit and healthy for the future generations to enjoy. Hence, the purpose of the study is also to emphasize the importance of environmental knowledge and environmental sensitiveness for triggering an environmentally responsible behavior among the younger generations.

2.2 Sample Selection and Data Collection

Convenience sampling technique was used for the study. Questionnaires were distributed in major tourist attractions of each city. In Malpe, questionnaires were distributed in the harbor and the beach area. In Murudeshwar, questionnaires were distributed around the temple and the beach. In Coorg and Kudremukh, questionnaires were distributed in the bus stands, safari parks, trek routes and scenic view points. The data was collected in the months of July and August as these months represent the peak season in the regions. A total of 310 Questionnaires were distributed out of which only 285 of them were valid, for a return rate of 92%.

2.3 Measurement

A 5- point Likert scale questionnaire containing a total of 21 items differentiated between three dimensions were used for the study. The first dimension is "Climate Change knowledge" which has nine items, second dimension is "Environmental sensitiveness" and the third dimension is 'Environmentally Responsible Behavior" each having six items. A Bivariate Pearson Correlation analysis was used to analyze if there are any relations or patterns between these variables. Bivariate Pearson Correlations measures the strength and direction of linear relationships between pairs of continuous variables and evaluates whether there is statistical evidence for a linear relationship among the variables in the population. Table 1 presents a summary of the items within each dimension and Figure 1 presents the conceptual framework.

Table 1: Dimensions and Items in the study

Dimensions	Items
Climate Change Knowledge Dimensions	I know that the maintenance of ecological balance will enhance the sustainable development of islands.
	I know that for the next generation, we should protect the natural resources of islands.
	I know that the maintenance of diversity of species on islands will balance the ecology.
	I know that extensive development of natural resources will consume the islands.
	I know that excessive ocean recreational activities will damage oceanic environments of islands.
	I know that carbon dioxide emissions by automobiles and motorcycles will pollute the islands.
	I know that over extensive tourism development will sacrifice natural resources and environments.
	I know that, in the trip, the use of green tableware, such as bowls and chopsticks will avoid damage to the environment.
	I know that the use of public transportation or biking can avoid air pollution.
Environmental Sensitiveness Dimension	I enjoy natural environments
	I am concerned about the ecological preservation of tourist destinations.
	I appreciate the natural environment offered by tourism destinations.
	I care about the impact of my travel habits on the natural environments.
	I have a strong sense of belonging with regard to tourism destinations I travel to.
	I have special feelings for the nature based tourism and the tourists.

Environmentally responsible behavior Dimension	I try to solve the environmental problems in destinations I visit.
	I read the reports, advertising, and books related to the environments of destinations I visit.
	I discuss with others about environmental protection of destinations I visit.
	I try to convince companions to adopt positive behaviors in the natural environments of destinations I visit.
	I pick up trash and branches when I see them on the beaches or trekking trails.
	I participate in activities to clean the beaches and trekking trail.

Figure 1: Conceptual Framework
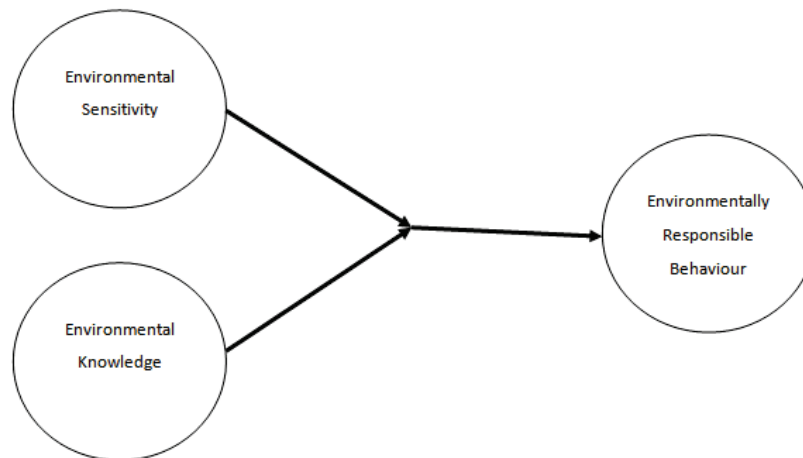
2.4 Reliability

Before distributing the questionnaire to the samples, a reliability test was performed. A pilot study comprising of data collected from 40 sample was tested for Cronbach's Alpla reliability value using SPSS 24. The result showed a Cronbach's Alpha value of 0.85, 0.823 and 0.857 for the three dimensions as shown in Table 2. Cronbach's Alpha value of 0.7 and above is considered to be good as it satisfies the basic requirements for internal consistency (Hair et al, 1998; Oerlemans & Peeters, 2010; Awang & Hamid 2015; Pongsamart, 2014). A summary of Cronbach's Alpha reliability test is given in Table 2

Table 2: Reliability Statistics

Dimensions	**Cronbach's Alpha value**
Climate Change knowledge	0.850
Environmental sensitiveness	0.823
Environmentally Responsible Behavior	0.857

3. Results
3.1 Descriptive analysis
A total of 175 Questionnaires were distributed out of which only 285 of them were valid for data analysis. Majority of the respondents were females (58% as against 42%). Most of the respondents belonged to age group between 21-30 (52%) followed by 31-40 (25%). Majority of the respondents were domestic tourists (70%) as compared to foreign tourists(30%). Education level among majority of the respondents were post graduates(53%) followed by Graduates (37%), PhD or higher qualification (4%) and 12th Class or below (6%). A of the respondents are summary are given in Table 3

Table 3: Descriptive Statistics

Variable	N = 285	%age
Gender		
Males	120	42
Females	165	58
Age		
Less than 20	24	8
21 to 25	128	45
25 to 30	133	47
Place of Origin		
Foreign	85	30
Domestic	200	70
Educational Level		
12th Class or Below	18	6
Graduate	105	37
Post Graduate	285	57

3.2 Findings
A Bivariate Pearson Correlation analysis was used to analyze any relations or patterns between the three dimensions - Climate change knowledge, Environmental Sensitiveness and Environmentally responsible behavior . The mean scores of the items within each dimensions were calculated. The analysis indicated a strong positive correlation between Environmental knowledge and Environmental Sensitiveness which was statistically significant ($r = 0.73$, $n = 285$, $p = 0.000$). A strong positive relationship also existed between Environmental knowledge and Environmentally responsible behavior which was again statistically significant ($r = 0.63$, $n = 285$, $p = 0.000$). The relation between Environmental sensitiveness and Environmentally responsible behavior was also found to be positive and statistically significant ($r = 0.65$, $n = 285$, $p = 0.000$). The results of the analysis are summarized in table 4.

Table 4: Correlation Analysis

Dimensions		Climate Change Knowledge	Environmental Sensitiveness	Environmentally Responsible Behavior
Climate Change Knowledge	Pearson Correlation	1	0.73	0.63
	Sig.(2-tailed)		0.000	0.000
	N	285	285	285
Environmental Sensitiveness	Pearson Correlation	0.73	1	0.65
	Sig.(2-tailed)	0.000		0.000
	N	285	285	285
Environmentally Responsible Behavior	Pearson Correlation	0.63	0.65	1
	Sig.(2-tailed)	0.000	0.000	
	N	285	285	285
Correlation is significant at 0.05 level (2-tailed)				

4. Discussions

Based on the results obtained from the correlation analysis, we observe a positive relation between Environmental knowledge and Environmental Sensitiveness ($r = 0.73$, $n = 285$, $p = 0.000$) and Environmental knowledge and Environmentally responsible behavior ($r = 0.63$, $n = 285$, $p = 0.000$) both of which were statistically significant. As Environmental knowledge increases the sensitiveness towards environment also increases. Environmental sensitiveness also has a direct positive correlation with Environmentally responsible behavior ($r = 0.65$, $n = 285$, $p = 0.000$).). Increase in Environmental knowledge also influences tourists to change or adapt their behavior during their travels. Tourists with high environmental sensitiveness show a concern towards the environment and are willing take actions which help in preserving and conserving the natural environment of the destinations they visit. Their decision making focuses on utilizing products which are environmental friendly and sustainable. The results supports similar findings in the past which emphasizes that tourists demonstrate a strong environmental concern when their environment related knowledge was high (Hungerford & Volk, 1990; Lyons & Breakwell, 1994; Steg & Vlek, 2009). A structural model of the relationships between each dimension is represented in Figure 2.

Figure 2| Structural model of sustainable tourism behavior
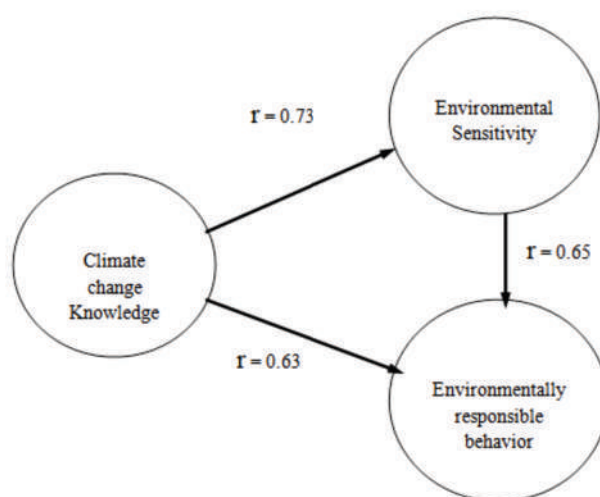
5. Conclusion

From the viewpoint of environmental knowledge, this study explored the relationship between tourists' Environmental knowledge, Environmental sensitiveness and Environmentally responsible behavior in order to develop a behavioral model for sustainable growth and development of tourism destinations. Based on the results, we can say that Environmental knowledge is important for the developing environmental sensitiveness and environmentally responsible behavior among youth tourists. With the impacts of climate change occurring in tourist destinations across the world, it is essential to develop strategies and action plans to adapt or mitigate these impacts. Tourism marketing and management organizations should provide Environmental knowledge so as to create environmental sensitiveness for the destinations and aid in the growth of Environmentally responsible behavior. Research surveys like this one can provide tons of information to develop these programs.

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Regression Models for Wind Speed data

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Key Words:

Multiple Regression, Logarithmic regression, Trigonometric Regression, wind speed, Temperature, visibility, RMSE.

Abstract

Wind speed plays a vital role for rainfall and all other atmospheric conditions like air fitted three regression models i.e Log Regression model, Trigonometric Regression model, Multiple regression model by taking dependent variable wind speed and maximum temperature, minimum temperature, time and visibility as independent variables. For choosing the best model among these three, we are using Root Mean Square Error (RMSE}criteria. The best fitted model for data is Log Regression Model when compared with Multiple regression and Trigonometric Regression.

1. Introduction

Time series and Forecasting methods plays a vital role in meteorological department having multiple parameters like humidity, rainfall, temperature, precipitation, wind speed, atmospheric pressure, solar radiation and so on. Among these, we took wind speed, maximum and minimum temperature, precipitation, visibility as parameters. The environmental conditions produced by different weather parameters have an impact on quality of surrounding ecosystem. Weather elements form a chain reaction as the impacts do not remain solely in the atmosphere. Temperature, pressure and humidity can interact to form clouds. These clouds in turn can reduce solar radiation for plants or increase precipitation which can run off into water. Consistently high temperatures can increase heat transfer to local bodies of water in addition to heat the air. similarly, lack of precipitation affects not only weather conditions but also soil moisture and water levels due to evaporation. Wind speed can be indicative of a front moving into the area or it can create waves. Weather monitoring can establish a database of typical conditions. When one or more weather elements deviate from their standard, the information can be used to explain or predict weather events.

Simple Linear Regression

Linear Regression models are used to show or predict the relationship between two variables or factors. Regression analysis is commonly used in research as it establishes a correlation exists between variables. This simple model , a straight line approximates the relationship between the dependent variable and the independent variable. The adjective simple refers to the fact that the outcome variable is related to a single predictor.

Multiple Linear Regression

It is the most common form of Linear Regression analysis. As a predictive analysis, the multiple linear regression is used to explain the relationship between one continuous dependent variable and two or more independent variable. The independent variables are not too highly correlated with each other.

Stepwise Regression

In Statistics, Stepwise Regression is a method of fitting regression model in which the choice of predictive variables is carried out by an automatic procedure. In each step, a variables considered for addition to or subtraction from the set of explanatory variables based on somepre specified criterion. Usually, this takes the form of a sequence of F tests or

t tests, but other techniques are possible such as adjusted R2, Akaike information criterion, Bayesian information criterion, Mallow's Cp and false discovery rate.

Logistic Regression

Logistic model or logit model is used to model the probability of a certain class or event existing with two events. This can be extended to several classes of events such as determining whether an image contains a cat, dog, lion etc…Each object being detected in the image would be assigned a probability between 0 and 1 and the sum adding to one. It is the appropriate regression analysis to conduct when dependent variable is dichotomous(binary). Like all Regression analysis, the logistic regression is a predictive analysis.

Quantile Regression

It is a type of regression analysis used in statistics and econometrics whereas the method of least squares results in estimates of conditional mean of response variable given particular values of the predictor variables, quantile regression aims at estimating either the conditional median or other quantiles of response variable. Essentially, quantile regression is the extension of linear regression and we use it when the conditions of linear regression are not applicable. By supplementing estimation of conditional mean functions with techniques for estimating an entire family of conditional quantile regression is capable of providing a more complete statistical analysis of the stochastic relationships among random variables.

Weighted Regression

Weighted least square regression is an extension of ordinary least square regression by the use of weights. Generally, weighted least squares regression is used when the homogeneous variance assumption of OLS regression is not met.

Kalman Fitter Regression

The Kalman filter is a linear state-space model that operates recursively on streams of noisy input data to produce a statistically optimal of the underlying system state. The general form of the Kalman Filter state-space model consists of a transition and observation equation. The Kalman filters are based on linear dynamic systems in discrete time domain. It is a next step in the evolution, which drops the stationary criteria.

Ridge Regression

It is a way to create a parsimonious model when the number of predictor variables in a set exceeds the number of observations, or when a data set has a multicollinearity. By adding a degree of bias to the regression estimation, ridge regression reduces the standard errors. It is hoped that net effect will be to give estimates that are more reliable.

Bayesian Regression

It is an approach to linear regression in which the statistical analysis is undertaken within the context of Bayesian inference. This is a frequenist approach, and it assumes that there are enough measurements to say something meaningful about the parameter. Here data are supplemented with additional information in the form of a prior probability distribution.

Lasso Regression

It is a type of linear regression that uses shrinkage. Shrinkage is where data values are shrunk towards a central point, like the mean. The Lasso procedure encourages models with fewer parameters. This regression analysis method that perform both variable selection and regularization in order to enhance the prediction accuracy and interpretability of the statistical model produces.

Random Forest Regression

Random Forest is a bagging technique and not a boosting technique. It is a supervised learning algorithm which uses ensemble learning method for classification and regression. It has an effective method for estimating missing data and maintains accuracy when a large proportion of the data are missing.

2. Methodology

Among these various kinds of Regression, we selected Multiple Regression, Trignometric regression and Logarthimic regression model. For forecasting the wind speed, we take time, minimum temperature, maximum temperature and visibility as independent variables. The fitted three regression models are first one is Multiple Regression Model:

$$Y_R = \theta_0 + \theta_1 x_1 + \theta_2 x_2 + \theta_3 t + \theta_4 x_4$$

Where Y_R is wind speed

X_1 is minimum temperature
X_2 is maximum temperature
t is Time in Day wise

x_4 is visibility

$\theta_0, \theta_1, \theta_2, \theta_3$ and θ_4 are constants.

The constants are estimated using the Ordinary Least Squares Method. E_R is error, difference of original and estimated values. The second regression model is the Trigonomteric regression model by taking wind speed as dependent variable and all other variables such as time, minimum temperature, maximum temperature and visibility are independent variables.

The Trigonometric Regression model is

$Y_R = \delta_0 + \delta_1 \sin x_1 + \delta_2 \cos x_2 + \delta_3 t + \delta_4 \cos x_4$

Where Y_R is Wind speed

X_1 is Minimum Temperature.

X_2 is Maximum Temperature

t is Time in Daywise

x_4 is Visibility

$\delta_0, \delta_1, \delta_2, \delta_3$ and δ_4 are constants.

Constants are estimated using Ordinary Least Squares Method. The estimated fitted model for the data is

$$\hat{Y}_R = \delta_0 + \delta_1 \sin x_1 + \delta_2 \cos x_2 + \delta_3 t + \delta_4 \cos x_4$$

Error for the model is difference of observed and estimated models i.e

$$E_T = y_T - \hat{y}_T$$

In the third model we are taking log for minimum temperature, maximum temperature and visibility, the logarithmic model is as follows by taking wind speed as dependent variables and minimum temperature, maximum temperature, time i.e day wise and visibility as Independent variables.

$$Y_L = \lambda_0 + \lambda_1 \log x_1 + \lambda_2 \log x_2 + \lambda_3 t + \lambda_4 \log x_4$$

X_1 is Minimum Temperature.

X_2 is Maximum Temperature.

t is Time in Daywise.

x_4 is Visibility.

$\lambda_0, \lambda_1, \lambda_2, \lambda_3$ and λ_4 are constants estimated using Ordinary Least Squares Estimates. The fitted Logarithmic Regression model is

$$\hat{Y}_L = \lambda_0 + \lambda_1 \log x_1 + \lambda_2 \log x_2 + \lambda_3 t + \lambda_4 \log x_4$$

The Residual error for the model is differences of original Log Regression value and estimated log values are

$$E_L = Y_L - \hat{Y}_L$$

Where E_L is error log regression model and Y_L and are original and estimated

RootMean Square Error(RMSE):

RMSE is used for choosing the best model among three models i.e Multiple Regression model, Trigonometric Regression model and Log Regression model using error criterion. The formula for Root Mean Square Error is

$$RMSE = , \sqrt{\frac{\sum_{i=1}^{n}(y_i - \hat{y_i})^2}{n}} \quad i=1,2,3\ldots n$$

S= R,T,L.

By observing RMSE values, Least value among three models is the best model. The table given below consists of five parameters with calculated estimates and RMSE for the three models respectively.

Empirical Investigation:

The table-1 consists of five parameters with calculated estimates and RMSE for the three models respectively.

Table-1

date (x3)	Min temp (x1)	Max temp (x2)	wind sp (y)	Visi bi (x4)	Multiple Regn. Model				Trigono metric model				Logarithmic model			
1	42.17	58.01	0.51	0.74	3.1628	-1.3342	-0.0010	-0.0971	0.0109	-0.0010	-1.6830	15.4765	-20.7264	-0.4938	-0.001
2	39.29	64.31	5.99	0.79	2.9468	-1.4791	-0.0020	0.1000	0.0093	-0.0020	-1.6041	15.1839	-21.2527	-0.3866	-0.002
3	39.29	66.83	3.51	0.94	2.9468	-1.5371	-0.0030	0.1000	-0.0655	-0.0030	-1.3441	15.1839	-21.4489	-0.1015	-0.003
4	47.21	66.29	2.23	0.42	3.5408	-1.5247	-0.0040	-0.0086	-0.0950	-0.0040	-2.0809	15.9435	-21.4075	-1.4226	-0.004
5	46.49	65.21	1.42	0.17	3.4868	-1.4998	-0.0050	0.0592	-0.0722	-0.0050	-2.2461	15.8799	-21.3236	-2.9058	-0.005
6	44.69	63.23	4.22	0.3	3.3518	-1.4543	-0.0060	0.0650	0.0922	-0.0060	-2.1772	15.7166	-21.1663	-1.9744	-0.006
7	42.89	66.47	10.9	0.69	3.2168	-1.5288	-0.0070	-0.0888	-0.0879	-0.0070	-1.7577	15.5466	-21.4213	-0.6085	-0.007
8	39.29	68.99	1.55	0.73	2.9468	-1.5868	-0.0080	0.1000	0.0992	-0.0080	-1.6983	15.1839	-21.6113	-0.5161	-0.008
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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1825	37.49	72.23	1.66	0.87	2.8118	-1.6613	-1.8250	-0.0208	-0.1000	-1.8250	-1.4696	14.9900	-21.8455	-0.2284	-1.825
1826	41.63	71.69	2.93	0.78	3.1223	-1.6489	-1.8260	-0.0710	-0.0844	-1.8260	-1.6202	15.4232	-21.8072	-0.4075	-1.826
1827	44.15	48.29	0.28	0.45	3.3113	-1.1107	-1.8270	0.0167	-0.0394	-1.8270	-2.0521	15.6663	-19.7904	-1.3095	-1.827
					RMSE=2.127924				**RMSE = 1.979106**				**RMSE =1.364562**			

By taking time, minimum temperature, maximum temperature and visibility as independent variables and wind speed as dependent variable. The fitted three models for Multiple Regression, Trigonometry Regression and Logarithmic Regression is as follows:

Table-2

SL.NO	MODEL NAME	FITTED MODEL
1	Multiple Regression	$y = 2.033 + 0.075x_1 - 0.023x_2 - 0.001x_3 + 0x_4$
2	Trigonometric Regression	$y = 5.401 + 0.1\sin x_1 + 0.1\sin x_2 - 0.001x_3 - 2.279x_4$
3	Logarithmic Regression	$y = 10.165 + 9.524\log x_1 - 11.753\log x_2 - 0.001x_3 + 3.776\log x_4$

Among three RMSE values, the least value is for logarithmic regression model. Therefore Logarithmic regression mode is the best model for the data compared with Trigonometric regression and Multiple regression The forecasted wind speed for the month of September 2019 is given in table-4.

Table-3

Time(x3)	Min Temp(x1)	Max Temp(x2)	Precipitatin(x4)	Wind speed(y)	Multiple Regression model	Trigonomteric model	Logarithmic model
1	80.7	91.2	3.3	11.7	5.9869	15.0693	-280.662
2	80.7	96.6	0	6.6	5.8617	23.129	-356.59
3	84.3	96.6	0	6.8	6.1307	23.488	-322.3046
4	84.3	96.4	0	8.1	6.1343	23.467	-319.955
5	82.5	95.8	0	11.4	6.0121	23.226	-330.0474
6	84.3	98	0	11.4	6.0955	23.625	-338.7618
7	80.7	94.5	1.9	9.2	5.905	18.5839	-324.7393
8	80.7	95.3	1.9	8.1	5.8856	18.6629	-334.1427
9	84.3	96.9	0	9.2	6.1178	23.512	-325.8365
10	83.2	97.8	0	6.9	6.0136	23.491	-346.8916
11	84.3	100.5	0	5.8	6.033	23.87	-368.1493
12	86.1	98.2	0	13.1	6.2199	23.819	-323.9752
13	82.5	96.6	0	8.1	5.9857	23.298	-339.4578
14	82.5	94.6	0	8.9	6.0307	23.097	-315.9528
15	82.5	92.8	0	8.1	6.0711	22.916	-294.7984
16	82.2	96.9	0	5.8	5.9533	23.295	-345.8439
17	82.5	97.1	0	8.9	5.9702	23.344	-345.3383
18	80.4	94.7	0	11.4	5.8669	22.893	-337.1325
19	78.6	89.4	0	10.3	5.8528	22.182	-291.9858
20	78.6	94.6	0	8.1	5.7322	22.701	-353.1024
21	75.3	94.3	0.9	8.5	5.4906	20.2889	-377.6083
22	75.3	84.3	0.7	9.7	5.7196	19.7437	-260.8345
23	75.3	89.4	0	6.9	5.6013	21.848	-323.419
24	75.8	92.8	0	7.7	5.5596	22.237	-358.6182
25	75.3	94.6	0.1	7.2	5.4797	22.1381	-384.159
26	78.7	91	0	10.3	5.8165	22.345	-309.8452
27	76.9	89	0	10.3	5.7265	21.964	-303.4834
28	76.9	89	0	10.4	5.7255	21.963	-303.4844
29	75.1	87.5	0	10.3	5.624	21.632	-302.9991
30	75.1	87.2	0	8.1	5.6299	21.601	-299.4742

Summary and Conclusion: We are fitted three Regression models are Multiple Regression, Trignometric Regression and Logarithmic Regression for wind speed as dependent variable and maximum temperature, minimum time, visibility as independent variables are as follows

SL.NO	Model Name	RMSE
1	Multiple Regression	1.9792
2	Trigonometric Regression	2.1279
3	Logarithmic Regression	1.3646

By observing the above table we conclude that the best model is logarithmic model. In this paper, we fitted three Regression models for data i.e. wind speed as dependent variable and maximum temperature, minimum temperature, time, visibility as independent variables as follows.

$$\hat{Y}_R = 2.033 + 0.075x_1 - 0.023x_2 - 0.001x_3 + 0\ x_4$$

$$\hat{y}_L = 5.401 + 0.1\sin x_1 + 0.1\sin x_2 - 0.001x_3 - 2.279x_4$$

$$\hat{y}_T = 10.165 + 9.524\log x_1 - 11.753\log x_2 - 0.001x_3 + 3.776\log x_4$$

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Awareness Level of the People About Disaster Management in the VUCA world

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MBA I Semester

Key Words:

Awareness,

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Abstract

The purpose of the study is to assess the extent of awareness about disasters and their management among People based in Bangalore. Survey method was employed on 110 graduates (48 males graduates and 62 female graduates) based in Bangalore city and accepted to listen to PPT presentation on disaster management for 5 minutes. Then questionnaires were distributed to the select respondents. Convenience sampling method is adopted for the purpose of present study. The present study emphasizes that the level of awareness among public was not satisfactory initially but substantially improved after intervention. These findings emphasize that there is a severe need of providing knowledge about disaster management to the people.

1. Introduction

According to Oxford dictionary, "Disaster is an unexpected event that kills a lot of people or causes huge damage". The classical characterization of disaster is unfamiliarity, unpredictability, uncertainty, vulnerability, urgency, intensity and danger.

Major natural disasters include earthquake, landslides, volcanic eruptions, floods hurricanes, fires, tornados, blizzards, tsunamis, cyclones. Manmade disasters have been in the form of fires, traffic accidents, structure failures, oil spills, acid rain, gas leak, ground water contamination, terrorist attack, mining accidents, nuclear explosions and acts of terrorism.

Natural and human-made disasters make news quite often in India. Further, India has suffered economic losses of $79.5 billion due to disasters during the last two decades and as per the United Nations Office for Disaster Risk Reduction (UNISDR), India ranked third among the top five most disaster hit nations in the world in 2015.

On the other hand, the term VUCA originated with the United States Army War College to describe conditions resulting from the Cold War. The VUCA concept has since been adopted throughout businesses and organizations in many industries and sectors to guide leadership and strategy planning.

Further, VUCA is an acronym that stands for *volatility*, *uncertainty*, *complexity* and *ambiguity*, a combination of qualities that, taken together, characterize the nature of some difficult conditions and situations.

Today we are living in a Volatile, Uncertain, Complex and Ambiguous world, also known as the VUCA environment, wherein "V" stands for **VOLATILITY**, which means change happens rapidly and on a large scale. The "U" being **UNCERTAINTY** means the future cannot be predicted with any precision. **COMPLEXITY** in this context means challenges are complicated by many factors and there are few solutions. **AMBIGUITY** means "lack of clarity and the difficulty of understanding exactly what the situation is.

The reality is that the environment described above is the one in which we all live and it is known fact that the living beings on this earth are struggling for survival. Studies have shown that lack of awareness among the people about disaster management particularly manmade disaster management is significant reason for such state of affairs. Therefore, it has become the need of the hour to measure the awareness level of the people about disaster management.

2. Review of literature

Annually disasters take a toll of average 74000 lives and affect around 230 million people world over. Since 1991, two-third of the victims of natural disasters was from developing countries, while just 2 per cent were from highly developed nations.

A natural disaster like leakage of toxic chemicals from the industries and accidents in the nuclear reactors has short-term and long-term effects on the environment and human health. Short-term effects on human health relate to diseases like blindness, cancer, paralysis, heart trouble, gastric and respiratory abnormalities. Long-term effects include genetic imbalances in humans and its impact on the future generations.

Though natural disasters like floods, earth quakes, and cyclones are a natural hazard, it is sometimes intensified due to undesirable human activities. But, measures can be taken to control such disasters like land use planning, building of physical barriers, preventing human encroachment and use of technology for relief.

Manmade disasters are more dangerous than natural disasters in VUCA world, because People are harming our mother earth to satisfy their hunger of success and their hunger are costing millions of life. Therefore there is always a need to develop a multifaceted approach involving all stakeholders from different disciplines and sectors of the society for which the foremost measure is to create awareness among the common people about disaster management.

Though every emergency or disaster has its own characteristics and demands but the basic measures under disaster management include prevention, mitigation, preparedness, response and recovery for which regular training and awareness activities are needed especially among students in context of India, where more than 30% of its population is below 15 years and most of their time is spent in schools.

The National Disaster Management Authority (NDMA) has been constituted under the Disaster Management Act 2005, with the Prime Minister of India as its Chairman. The Government urges the importance of disaster management strongly and advised all the Academic Staff Colleges to conduct a Refresher Course on disaster management. In this context, it is essential to analyze the awareness about natural disasters and the management of disasters among public.

3. Statement of the problem

In the last two decades, the casualties and destruction attributable to disasters has increased severely. Though the Government has taken considerable scientific steps, the loss of lives and property due to disasters has not yet decreased. Keeping these in view, the present study was undertaken to assess the awareness pattern of the people towards disaster and its' management. Provide and handy solutions to this scary environmental issue.

4. Research methodology

Survey method was employed on 110 graduates (48 males graduates and 62 female graduates) based in Bangalore city and accepted to listen to PPT presentation on disaster management for 5 minutes. Then questionnaires were distributed to the select respondents. Convenience sampling method is adopted for the purpose of present study. The questionnaire included statements on the following aspects:

1. Knowledge about the effects of various disasters (Natural and manmade).
2. Knowledge about the possible control measures and precautionary measures for various disasters Natural and manmade)..
3. Different agencies working for disaster management (Natural and manmade).

5. Findings

S. No	Statements	Before intervention			After intervention		
		Yes	No	Total	Yes	No	Total
1	Aware of disaster management (Natural and manmade disaster management)	(38%)	(62%)	110	(63%)	(37%)	110
2	Knowledge about year of disaster management act, 2005	(21%)	(79%)	110	(86%)	(14%)	110
3	Knowledge about content of emergency supply kit (flash light, batteries, water, fruits and vegetables)	(38%)	(62%)	110	(52%)	(48%)	110
4	You are aware that animal behaviour change (like cat, fish) is an indicator of earthquake	(14%)	(86%)	110	(66%)	(34%)	110
5	You Check the home conditions especially roofing to reduce cyclone damage	(38%)	(62%)	110	(63%)	(37%)	110
6	Knowledge about unsafe practices during fire	(31%)	(69%)	110	(74%)	(26%)	110
7	knowledge about emergency number for fire in India is (101)	(42%)	(58%)	110	(80%)	(20%)	110
8	knowledge about emergency number for disaster in India(108)	22%	78%	110	87%	13%	110
9	Awareness about chairman of national disaster management authority is Prime Minister of India	09%	99%	110	75%	25%	110
10	knowledge about NDRF as National disaster Response Force	47%	53%	110	87%	13%	110

Source: Primary data

6. Analysis

- The present study emphasizes that the level of awareness among public was not satisfactory initially but substantially improved after intervention.
- There is an urgent need of generating knowledge about emergency supply kit to the public.
- Disaster management should be compulsorily included in academic curriculum of all the students (primary and high school).
- As the teachers are the change agents of the society, they have to update their knowledge in Disaster Management.
- The Government should urge the importance of disaster management strongly and advise all the Academic Staff Colleges to conduct a Refresher Course on disaster management.
- Involving the community, NGOs, CSOs and the media at all stages of disaster management

7. Conclusion

These findings bring out the interpretation that a lot needs to be done to enrich the people' knowledge regarding various aspects of disaster causation and their management to the youth, because they are the strong elements who can disseminate the information to the wider sections of society

Curricular and extracurricular activities of Disaster Management (Natural and manmade)which are to be included in the school and college curricula should be given more attention. Readiness to help the affected people at the time of disasters,

humanity towards affected people, planning, precautions, rescue methods training should be provided.

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