# Segmentation Research in Tourism:
# Brief Literature Review

**Saibal Dutta and Sujoy Bhattacharya**

## Abstract

*Market segmentation is one of the most significant concepts in marketing literature. It has been applied extensively in tourism research. The purpose of the paper is to provide a review of the existing academic literature on segmentation research in tourism by critically looking at general segmentation bases and segmentation techniques. Specifically the review of data mining techniques in market segmentation in tourism has been done. The review is based on these five sections: (1) general segmentation bases in tourism (2) places of study (3) data source, sample size and number of items (4) methodological approach (5) identified numbered of factors and clusters. The gaps in the segmentation literature in tourism marketing are identified and directions for future research are given. The review, though extensive is not exhaustive. There is no prior study reviewing the literature using at general segmentation bases and segmentation techniques in the tourism context. The study synthesizes the research in segmentation for the tourism sector.*

## 1. Introduction

In the marketing literature, the concept of market segmentation has been well explored by the research community. This broad concept emerged from a famous work on "Theory of monopolistic competition" by Economist Chamberlin (Chamberlin, 1948) and later, on came into existence as proposed by. Smith (1956) had derived the concept of market segmentation as, "the process of differentiating a large market into some groups wherein within groups, similar type of customer behavior being predicted". Now a day's, market segmentation is more pronounced among the marketing companies, since, a single product has been challenging towards satisfying the entire customer (Chaturvedi et al., 1997; Dibb & Stern, 1995). The approach to market segmentation enables the companies to get assess to the customer needs and thereby, identifies and intensifies the individual customer benefits (Lu, 2003). Market segmentation signifies itself as the deciding criteria to determine which group of customer they should target and, how to employ resources more effectively as well as how to efficiently assess the different competitive strategies (Ho et al., 2012; Aaker, 2001).

*Saibal Dutta, Research Scholar, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India. E Mail: saibal.13@gmail.com, Phone: +91 8900338700 (Corresponding Author)*

*Sujoy Bhattacharya, Assistant Professor, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India.*

Tourism sector has been accepted as one of the most important players of the global industries, which aids to accelerate the national economies through the development process, highlights and conserves the cultural heritage and, acts as a bridge towards the global harmony.  In the recent years, the tourism industry outperformed to prosper the entire economy in a wider aspect, flourishing rapidly than other industries, such as manufacturing, financial services and retail. Tourism industry is proceeding towards to achieve the breakthrough to be among one of the world's largest industries with growth rate more than five percent per annum during the last twenty years. Globally, tourism industry has contributed 11% of the global GDP as being stated (Source: Ministry of Tourism, Govt of India 2012). Tourism sector will be highly beneficial to contribute towards eradicating the poverty and, to curtail the unemployment rates. On the other hand, Indian tourism industry has an ample scope of progressive growth, since the Indian tourism sector being proportionate to only 0.64 percent of world tourist arrival (Source: Ministry of tourism, Govt of India 2012). Most of the Asian and European countries have recognized the tourism industry, as one of the highest GDP contributors. In many of the Asian countries, a progressive tourism industry is perceived as a prospective solution to pin-point the national issues, like lower employment rates, as a source of generating foreign currencies and, as an outcome of higher government revenues.
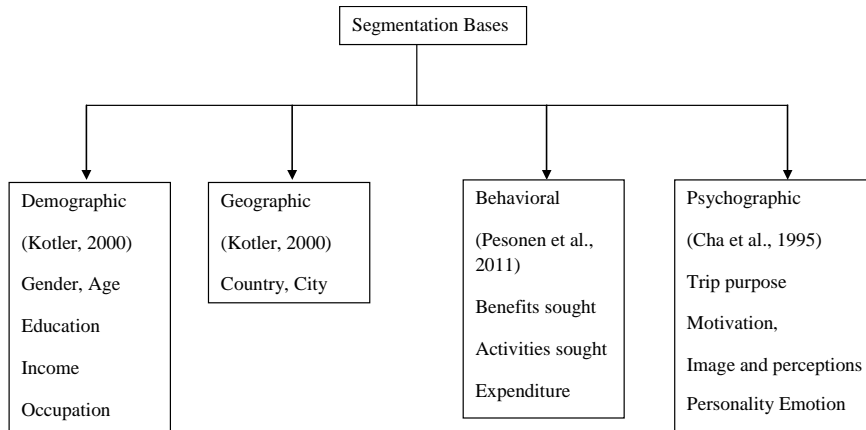
This study will review the literature of market segmentation in tourism research very elaborately on an effective basis. The organization of this study has been outlined as such, in the very first part, the literature on market segmentation research has been reviewed on a wider aspect and, in the second part, the limitations of the study and scope for future research in accordance with the Indian perspective have been discussed in addition to the concluding remarks of the said study focused on market segmentation research.

## 2.  Literature Review

Market segmentation had been identified as one of the primary and most critical approaches to the market research. The result, as indicated by market segmentation approach is highly associated with better data mining techniques and selection of proper segmentation variables which have been highlighted in two different sub-sections (Wedel & Kamakura, 2000, Tsai & Chiu, 2004).

The characteristics used to differentiate a large market into groups are called segmentation bases. The market researchers apply the concept of segmentation bases as a filter that allows targeting the specific segments of customers. Four different types of segmentation bases (geographic, demographic, psychographic and behavioral) had been discussed in the literature on market research while some studies give an indication that there is no correct way to segment the market (Kotler, 2000). The various segmentation bases along with their various attributes have been illustrated in the Fig.1.

**Fig.1 Segmentation Bases in Tourism**

```
                        ┌─────────────────────┐
                        │  Segmentation Bases │
                        └─────────────────────┘
```

| Demographic | Geographic | Behavioral | Psychographic |
|---|---|---|---|
| (Kotler, 2000) | (Kotler, 2000) | (Pesonen et al., 2011) | (Cha et al., 1995) |
| Gender, Age | Country, City | Benefits sought | Trip purpose |
| Education | | Activities sought | Motivation, |
| Income | | Expenditure | Image and perceptions |
| Occupation | | | Personality Emotion |

In the present scenario, tourism market segmentation has been evolved as a more prominent research area among the market researchers. The market segmentation process in the tourism sector is represented diagrammatically in the Fig.2. Many researchers have undergone through studies which are destination specific including various parts of the world, for e.g., Canada (Carmichael &Smith,2004), Spain (Molera & Albaladejo, 2007), Kenya (Beh & Bruyere, 2007), USA (Koh et al., 2009), Scotland (Frochot 2005), France (Jang et al., 2004), Gambia (Rid et al., 2014), Australia (Frochot, 2005), Finland (Pesonen et al., 2011), India (Mohsin & Ryan, 2007), etc. Earlier, so far, several research studies had been carried out to interpret the applicability of various segmentation bases for different segment tourism markets.

**Fig.2 Flow Diagram of Market Segmentation Process in Tourism Sector**

Selection of Place

Segmentation Variable     Questionnaire survey     Data     Factor Analysis/Clustering     Implication of the Study

Selection of Variable by Researcher
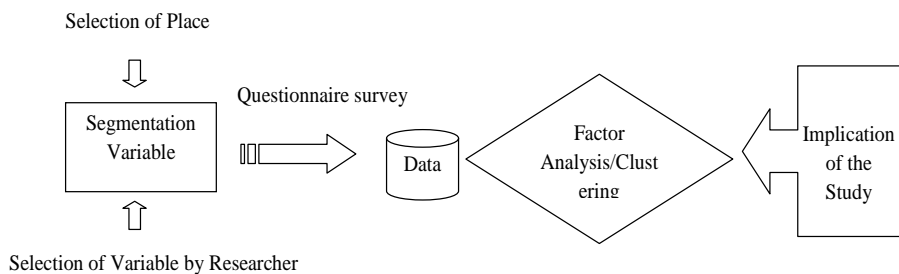
Most of the studies in tourism research had employed the combination of three or four segmentation bases. The various surveys in the area specific of the tourism sector for segmentation bases have been highlighted in the Table 1. Some of the researchers had preferred primary data collection while few researchers had assessed the data through

secondary source (Carmichael &Smith, 2004).  The guideline to determine the appropriate sample size and, the number of variables had not been specified so far, but in general, considering few variables and collection of sample 5 to 10 times the number of variables had been recommended. The number of samples collected through a primary survey varied from 200 to 700; however, few researchers had collected more than 1000 data sample also, as explored in the literature (Johns &Gyimothy, 2002, Mohsin & Ryan, 2007, Oh et al., 1995, Ryan & Glendon, 1998). The preferred numbered items had been employed to measure the tourist behavior ranging from 12 to 40 and, in the some cases; up to more than 50 items (Oh et al., 1995, Johns & Gyimothy, 2002).  The 5-Point and 7-Point Likert-type scales have been incorporated into the questionnaire. The output of segmentation studies (i.e. the list of factors and clusters) in the tourism sector have been summarized in the Table.2, citing culture, rural, relax, novelty, etc., as the most crucial factors and, active, escapers, luxury seekers, etc., as the most effective clusters.

**Table 1: Segmentation Surveys in Tourism Sector**

| Authors | Destination | Segmentation Bases | | | | |
|---|---|---|---|---|---|---|
| | | Tourist sample | D | G | P | B |
| Beh &Bruyere, 2007 | Kenya | 465 | Yes | Yes | Yes | Yes |
| Carmichael &Smith,  2004 | Canada | 333428* | Yes | | Yes | Yes |
| Dolnicar, 2005 | Australia | 430 | Yes | Yes | | Yes |
| Frochot, 2005 | Scotland | 734 | Yes | Yes | Yes | Yes |
| Hsieh et al.,  1992 | Hong Kong | 807 | Yes | | | Yes |
| Jang et al., 2004 | France | 496 | Yes | Yes | | Yes |
| Johns & Gyimothy, 2002 | Denmark | 1099 | Yes | Yes | | Yes |
| Kastenholz et al., 1999 | Portugal | 187 | Yes | Yes | | Yes |
| Kim & Jogaratnam,  2003 | USA | 514 | Yes | Yes | | Yes |
| Koh, et al.,  2010 | USA | 214 | Yes | | | Yes |
| Mohsin & Ryan , 2007 | India | 1026 | Yes | Yes | Yes | |
| Molera &Albaladejo, 2007 | Spain | 335 | Yes | Yes | | Yes |
| Loker-Murphy, 1997 | Australia | 690 | Yes | Yes | Yes | Yes |
| Oh et al., 1995 | Australia | 1030 | Yes | | Yes | |
| Park &Yoon, 2009 | Korea | 252 | Yes | | Yes | |
| Pesonen et al.,2011 | Finland | 195 | Yes | Yes | Yes | Yes |
| Rid et al., 2014 | Gambia | 430 | Yes | | Yes | Yes |
| Ryan &Glendon, 1998 | UK | 1127 | Yes | Yes | Yes | Yes |
| Sarigollu & Huang, 2005 | Latin America | 265 | Yes | | Yes | Yes |

*Where   D-Demographic, G-Geographic, P-Psychographic, B-Behavioral*
*\* Secondary data source used.*

**Table 2: Summarized View of Factors and Clusters from Segmentation Surveys in Tourism**

| References | No. Factors (F) /Clusters (C) | Factors | Clusters |
|---|---|---|---|
| Frochot, 2005 | 4F/4C | Outdoors | Actives |
| | | Rurality | Relaxers |
| | | Relaxation | Gazers |
| | | Sport | Rurals |
| Pesonen et al., 2011 | 4C | | Outdoors types |
| | | | Nature enthusiastic |
| | | | Sightseers |
| | | | Culturals |
| Johns &Gyimothy, 2002 | 4F/2C | Socio cultural aspect of the island- | Not Given |
| | | including its atmosphere | |
| | | Nature and scenery | |
| | | Relaxation and slower pace of life | |
| | | Enthusiastic activities | |
| Molera &Albaladejo, 2007 | 5F/5C | Nature and peacefulness | Family rural tourists |
| | | Physical and cultural activities | Relax rural tourists |
| | | Family | Active rural tourists |
| | | Trip feature | Rural life tourists |
| | | Rural life | Tourists of rural accommodation |
| Sarigollu & Huang, 2005 | 5F/4C | Fun and Sun | Adventurer |
| | | Ecotourism | Multifarious |
| | | Performing Arts and Events | Fun and Relaxation |
| | | Outdoor Adventure | Urbane |
| | | General Sightseeing | |
| Kastenholz et al., 1999 | 4F/4C | Informed, Well-Priced Independent Travel | Want-It-All Ruralist |

| | | | |
|---|---|---|---|
| | | Culture and Tradition | Independent Ruralist |
| | | Social and Active Hedonism | Traditional Ruralist |
| | | Calm and Unpolluted Environment | Environmental Ruralist |
| Koh, et al., 2009 | 4F/3C | Social | Escapists |
| | | Relaxing | Neutralists |
| | | Healthy | Hedonists |
| | | Rejuvenating | |
| | | | |
| Dolnicar, 2005 | 5C | | Price-conscious safety seekers |
| | | | Luxury surfers |
| | | | Radical adventurers |
| | | | Lack of crowd |
| | | | Quality of natural environment |
| Jang et al., 2004 | 4C | | Beach and Sunshine Lovers |
| | | | City Sightseers |
| | | | Culture and Nature Enthusiasts |
| | | | Visiting Friends and Relatives |
| Kim & Jogaratnam, 2003 | 4F/2C | Cultural | Not Given |
| | | Sports | |
| | | Leisure | |
| | | Touring | |
| Carmichael & Smith, 2004 | 5C | | Shopping vacation |
| | | | Short vacation |
| | | | Getaway and VFR |
| | | | Outdoors and sports |
| | | | Long vacation |

| | | | |
|---|---|---|---|
| Hsieh et al., 1992 | 5C | | Visiting friends/relatives activity set |
| | | | Outdoor sports activity set |
| | | | Sightseeing activity set |
| | | | Full house activity set |
| | | | Entertainment activity set |
| Ryan & Glendon, 1998 | 4F/11C | Relaxation | Unimaginative Relaxers |
| | | Social | Relaxing Moderates |
| | | Intellectual | Relaxed Discoverers |
| | | Mastery | Positive Holiday takers |
| | | | Intellectual Active Isolates |
| | | | Competent Intellectuals |
| | | | Mental Relaxers |
| | | | Active Relaxers |
| | | | Noisy Socializers |
| | | | Friendly Discoverers |
| | | | Social Relaxers |
| Loker-Murphy, 1997 | 3F/4C | Came to Australia | Social/Excitement seeker |
| | | To escape other places & the pleasure of life | Escapers |
| | | To holiday & spend time with people | Achievers |
| | | That I care deeply about | Self developers |
| | | | |
| Mohsin & Ryan, 2007 | 4F/5C | Relax | Highly motivated |
| | | Challenge | Socially averse knowledge seekers |

| | | | |
|---|---|---|---|
| | | Discover | Bond building relaxers |
| | | Social | Culture/knowledge explorers |
| | | | Low motivation |
| Oh et al., 1995 | 4F/4C | Sports/activity | Safety/comfort seekers |
| | | Safety/comfort | Culture/history seekers |
| | | Culture/novelty | Novelty/adventure seekers |
| | | Luxury | Luxury seekers |
| | | | |
| Rid et al., 2014 | 4F/4C | Heritage & nature | Multi-experiences seekers |
| | | Authentic rural experience | Multi-experiences & beach seekers |
| | | Learning | Heritage & nature seekers |
| | | Sun & beach | Sun & beach seekers |
| Park &Yoon, 2009 | 6F/4C | Relaxation | Family togetherness seeker |
| | | Socialization | Passive tourist, |
| | | Learning | Want-it-all seeker |
| | | Family togetherness | Learning and excitement seeker |
| | | Novelty | |
| | | Excitement | |
| Beh & Bruyere, 2007 | 8F/3C | Escape | Escapists |
| | | Culture | Learners |
| | | Personal growth | Spiritualists |
| | | Mega-fauna | |
| | | Adventure | |
| | | Learning | |
| | | Nature | |
| | | General viewing | |

**Table 3: Implications of Data Mining Techniques in Tourism Research**

| Authors | Items | Likers scale | No. Factors/Clusters | Methodology |
|---|---|---|---|---|
| Beh & Bruyere, 2007 | 49 | 7 point scale | 8F/3C | FA/K means |
| Carmichael & Smith, 2004 | 29 | Nominal Scale | 5C | Hierarchical (Ward) |
| Dolnicar, 2005 | 17 | Not Given | 5C | SOFM |
| Frochot, 2005 | 13 | 5 point scale | 4F/4C | FA/K means |
| Hsieh et al., 1992 | 36 | Not Given | 5C | Hierarchical |
| Jang et al., 2004 | 44 | Not Given | 4C | Hierarchical (Ward)/K means |
| Johns & Gyimothy, 2002 | 61 | 4 point scale | 4F/2C | Hierarchical |
| Kastenholz et al., 1999 | 27 | 7 point scale | 4F/4C | Hierarchical (Ward) |
| Kim & Jogaratnam, 2003 | 16 | 5 point scale | 4F/2C | Not given |
| Koh, et al., 2009 | 21 | 5 point scale | 4F/3C | Hierarchical (Ward )/K means |
| Mohsin & Ryan, 2007 | 16 | 7 point scale | 4F/5C | FA/K means |
| Molera & Albaladejo, 2007 | 17 | 5 point scale | 5F/5C | Hierarchical (Ward)/K means |
| Loker -Murphy, 1997 | 10 | 5 point scale | 3F/4C | FA/K means |
| Oh et al., 1995 | 82 | 4 point scale | 4F/4C | Not given |
| Park &Yoon, 2009 | 24 | 5 point scale | 6F/4C | FA/ Hierarchical /K means |
| Pesonen et al.,2011 | 18 | 5 point scale | 4C | Hierarchical (Ward )/K means |
| Rid et al., 2014 | 22 | 5 point scale | 4F/4C | FA/ Hierarchical /K means |
| Ryan &Glendon, 1998 | 14 | 7 point scale | 4F/11C | FA/ Hierarchical |
| Sarigollu &Huang, 2005 | 25 | 5 point scale | 5F/4C | K means |

**FA**-*Factor analysis:* **F**-*No of Factor;* **C**-*No of Cluster*

Now, market segmentation is becoming more complex gradually and researchers are also working on the development of more advanced data mining techniques that can handle outlier, noise and big data related problem. The review of data mining techniques in tourism market segmentation shown in Table 3.  But still K means and Hierarchical clustering are still preferred data mining techniques for segmentation in tourism. So

tourism researchers may explore other techniques in their research. For example, Kernel based market segmentation approach is one of the promising techniques for robust market segmentation and also performed better than traditional techniques. However, recently tourism researcher adopted advanced data mining techniques for market segmentation (Kuo et al., 2012, Durso et al., 2013). But in general, it is recommended to choose algorithm very carefully because every algorithm has some advantages and drawbacks.

### 3.   Limitations of the Study and Scope for Future Research

Literature of segmentation research in the tourism industry has been reviewed elaborately in this research study which tries to incorporate all the available relevant and important papers in tourism literature but very specifically. The number of domestic tourists has gone up manifold in India. However, there is a lack of studies found in Indian domestic sectors instead of higher growth rate (Madhavan &Rastogi, 2013). Hence, future researcher can focus on the segmentation study on Indian domestic tourist.

Literature review on tourism market segmentation research does not provide any conclusive result on the selection of segmentation bases and in most of the studies, selection of segmentation bases fully depends on the researcher's judgment (Tkaczynski et al., 2009).  However, recent literatures suggest that tourism stakeholder perspective segmentation approach is more rational and appropriate for the same. Earlier studies have evaluated on visitor data and never try to understand which segmentation variables tourism stakeholders use to segment their markets (Tkaczynski et al., 2009). Till now, research work has not focused to understand how tourism stakeholders segment their market and hence tourism stakeholders view point help us to understand the market and help to improve the segmentation result of cluster analysis. The main reason of failure to predict actual consumer behavior is the inappropriate choosing segmentation variable which is occurring because of existing approaches (Tkaczynski et al., 2009). Hence Studies on stakeholder approach and their coordination will help planners and service providers develop offerings better adapted to the needs of Indian tourists while taking advantage of the unique characteristics and resources available in their respective tourist regions. Because of these reasons future researchers may adopt a stakeholder perspective segmentation approach for market segmentation of Indian domestic tourist.

Most of the studies in tourism segmentation had been limited to, use either K means or hierarchical clustering. However, in literature there are a sufficient number of advanced techniques available in market segmentation. It might be possible that the choice of clustering techniques is independence of data type. It means that researchers did not exploit the full potential of clustering techniques. Most of the studies in tourism literature focused only on the market segmentation. Based on the literature reviewed, there is a need to study pertaining to prediction of future tourist behavior for each of the stakeholders particularly in India.

## 4. Conclusion

This research study has reviewed and analyzed two important components of segmentation research (i.e. Segmentation bases and segmentation techniques) in the tourism industry. The outline of this study is projected to provide a brief summary and issues of each of the components. However, the research work itself cannot claim to be exhaustive. The assessments of this research study are such that this work provides a reasonable insight of segmentation research in the tourism sector and would portray a clear picture for those willing to work on this very specific area of research.

## References

Aaker, D. A. (2001). Strategic Market Management. New York: John Wiley and Son

Beh, A., and Bruyere, B. L. (2007). Segmentation by visitor motivation in three Kenyan national reserves. *Tourism Management, 28*(6), 1464-1471.

Carmichael, B. A., and Smith, W. W. (2004). Canadian domestic travel behaviour: a market segmentation study of rural shoppers. *Journal of Vacation Marketing, 10*(4), 333-347.

Cha, S., McCleary, K. W., and Uysal, M. (1995). Travel motivations of Japanese profile for pleasure overseas travelers: a factor-cluster segmentation approach. *Journal of Travel Research, 34*(1), 33-39.

Chaturvedi, A., Carroll, J.D., Green, P.E., and Rotondo, J.A. (1997). A feature-based approach to market segmentation via overlapping K-centroids clustering, *Journal of Marketing Research 34,* 370- 377

Chul Oh, H., Uysal, M., and Weaver, P. A. (1995). Product bundles and market segments based on travel motivations: A canonical correlation approach. *International Journal of Hospitality Management, 14*(2), 123-137.

Dibb, S., and Stern, P. (1995). Questioning the reliability of market segmentation techniques. *Omega, 23*(6), 625-636.

D'Urso, P., De Giovanni, L., Disegna, M., and Massari, R. (2013). Bagged Clustering and its application to tourism market segmentation. *Expert Systems with Applications*.

Frochot, I. (2005). A benefit segmentation of tourists in rural areas: A Scottish perspective. *Tourism Management, 26*(3), 335-346

Ho, G. T. S., Ip, W. H., Lee, C. K. M., and Mou, W. L. (2012). Customer grouping for better resources allocation using GA based clustering technique. *Expert Systems with Applications, 39*(2), 1979-1987.

Hsieh, S., O'Leary, J. T., and Morrison, A. M. (1992). Segmenting the international travel market by activity. *Tourism Management, 13*(2), 209-223.

Jang, S., Morrison, A. M., and O'leary, J. T. (2004). A procedure for target market selection in tourism. *Journal of Travel & Tourism Marketing, 16*(1), 19-33.

Johns, N., and Gyimóthy, S. (2002). Market segmentation and the prediction of tourist behavior: the case of Bornholm, Denmark. *Journal of Travel Research, 40*(3), 316-327.

Kastenholz, E., Davis, D., and Paul, G. (1999). Segmenting tourism in rural areas: The case of North and Central Portugal. *Journal of Travel research, 37*(4), 353-363.

Kim, K., and Jogaratnam, G. (2003). Activity preferences of Asian international and domestic American university students: An alternate basis for segmentation. *Journal of Vacation Marketing, 9*(3), 260-270.

Koh, S., Yoo, J. J. E., and Boger Jr, C. A. (2010). Importance-performance analysis with benefit segmentation of spa goers. *International Journal of Contemporary Hospitality Management, 22(*5), 718-735.

Kotler, P. (2000). Marketing Management. Prentice Hall, pp.172.

Kuo, R. J., Akbaria, K., and Subroto, B. (2012). Application of particle swarm optimization and perceptual map to tourist market segmentation. *Expert Systems with Applications, 39*(10), 8726-8735.

Loker-Murphy, L. (1997). Backpackers in Australia: A motivation-based segmentation study. *Journal of Travel & Tourism Marketing, 5*(4), 23-45.

Lu, C.S. (2003). Market Segment Evaluation and International Distribution Centers. Transportation Research Part E: *Logistics and Transportation Review, 39*,1, 49-60.

Madhavan, H., and Rastogi, R. (2013). Social and psychological factors influencing destination preferences of domestic tourists in India. *Leisure Studies, 32*(2), 207-217.

Mohsin, A., and Ryan, C. (2007). Exploring attitudes of Indian students toward holidaying in New Zealand using the leisure motivation scale. *Asia Pacific Journal of Tourism Research, 12*(1), 1-18.

Molera, L., and Albaladeo, I. P. (2007). Profiling segments of tourists in rural areas of South-Eastern Spain. *Tourism Management, 28*(3), 757-767.

Park, D. B., and Yoon, Y. S. (2009). Segmentation by motivation in rural tourism: A Korean case study. *Tourism Management, 30,* 99-108.

Pesonen, J., Laukkanen, T., and Komppula, R. (2011). Benefit segmentation of potential wellbeing tourists. *Journal of Vacation Marketing, 17*(4), 303-314..

Rid, W., Ezeuduji, I. O., and Pröbstl-Haider, U. (2014). Segmentation by motivation for rural tourism activities in The Gambia. *Tourism Management, 40,* 102-116.

Ryan, C., and Glendon, I. (1998). Application of leisure motivation scale to tourism. *Annals of Tourism Research, 25*(1), 169-184.

Sarigollu, E., and Huang, R. (2005). Benefits segmentation of visitors to Latin America. *Journal of Travel Research, 43*(3), 277-293.

Smith, W.R. (1956). Product differentiation and market segmentation as an alternative marketing strategy. *Journal of Marketing, 21*, 3-8.

Tkaczynski, A., Rundle-Thiele, S. R., and Beaumont, N. (2009). Segmentation: A tourism stakeholder view. *Tourism Management, 30*(2), 169-175.

Tsai C.Y., and Chiu C. C., (2004).A purchase-based market segmentation methodology. *Expert Systems with Applications, 27*(2), 265-276

Wedel, M., and Kamakura, W. A. (2000). Market segmentation: conceptual and methodological foundations. Boston: Kluwer Academic

Ministry of tourism, Govt of India 2012 http://www.tourism.gov.in