

## Psychographics Segmentation in Mulu National Park

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**Abstract:** Market segmentation is a crucial tool in ecotourism, which is used to identify and categorise the tourists. This paper describes the profile of tourists to Mulu National Park (MNP) based on the types of psychographic segmentation (activities, interest and opinion) in ecotourism. In general, the purpose of this paper is to present affective segmentation of tourists to MNP. It was found that tourists in MNP are heterogeneous which indicated that tourists' characteristics are diverse in many aspects. Tourists with different background and characteristic of age, gender, level of income and education level are different in their preferences and taste. The result discusses several implications of market segmentation for nature tourism product promotion, development and marketing strategy.

**Key words:** Ecotourism • Psychographic segmentation • Tourist • Mulu National Park

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### INTRODUCTION

Ecotourism is a great term in tourism. Since its earliest published definition in 1996 by Hector Ceballos Lascurain [1], ecotourism has bloomed and brought economic development especially to developing countries, which present untapped natural resources including unique cultures and destinations [2]. In Malaysia, ecotourism have grown very fast and it is known for its rainforest which represent a strong foundation of ecotourism market [3, 4]. Market segmentation is now widely utilised in the tourism industry to assist tourism managers in identifying and targeting distinct groups of tourist and also to develop the marketing strategies [5-7].

Market segmentation can be referred to as the process of classifying customers into groups based on different needs, characteristics or behavior [8]. The main goal of market segmentation is to identify segments that are most interested in specific goods and services and to focus to guide marketing efforts in the most effective way [9] and [10]. It provides a way for planners and marketers to anticipate similar and different needs of the segments, which in turn provide a good head start in designing

programmes and products in ecotourism. Tourists are usually segmented by using different factors according to their behavioral or socio-demographic characteristics. In order to identify market segment, the market can be divided in seven broad categories; geography (by country), demographics (gender, age, household), purpose of trip (leisure, business), psychographics (activity, interest, opinion), behavior, product-related and channel of distribution [11].

Psychographic segmentation can be referred to as behavioral segmentation. It divides the market into a group according to the tourist' lifestyles [12]. It considers a number of potential influences on tourist' behavior including their activities, interest and opinion (AIO). In this segmentation, tourist could be clustered based on trip characteristics and their motivation of visits to a particular park. Interest can be defined as the preferences regarding the consumption of time and they are the determinants of lifestyle [13]; for example, interest in sports and fashion, rather than a liking for a specific brand or sportswear. Meanwhile, opinion is related to phenomena, issues, persons, firms, products, governments, politicians, countries, shops, newspapers and magazines.

Accordingly, the focus of this study is to explore the psychographic bases which are activity, interest and opinion to segment a tourist market in Mulu National Park (MNP). In this study, psychological data, are obtained to include activities, interests and opinions, which are not directly related to specific product characteristics [13]. The identification of the tourist type is an important subject to be explored in order to determine their similarities and differences, which will make it easier to anticipate their preferences. Market segmentation for ecotourism is very important to tourism industry in order to identify specific target market and to develop the product and services offered by the industry. Having said that, by conducting market segmentation, the proper marketing strategies can be established for a suitable targeted segment.

**Methodology:** The study was conducted in Mulu National Park (MNP), Mulu, Sarawak, Malaysia. MNP is home to one of the longest networks of caves in the world. It is also one of the World Heritage site designated by UNESCO in November 2000. The park is famous for its caves and scientific expeditions have mounted the surrounding rainforest. The 52,864 ha park contains seventeen vegetation zones, exhibiting some 3,500 species of vascular plants. The area has an amazing diversity of species covering the lowlands to an altitude of 50 meters to 2.376 meters. It was gazetted as a National Park on October 3, 1974. MNP has 3 mountains, the GunungMulu (2.376 m), Mount Api (1.750 m) and Mount Benarat (1.585 m) and 300 km caves that have been discovered as one of the largest limestone cave system in the world [14].

A survey was conducted and stratified according to psychological data samples of respondents were chosen. A questionnaire form was designed in both English and Malay languages. The researchers had several discussions in developing the questionnaire, attributed by the previous study. The survey was carried out at the MNP from November to the December 2012. This period is chosen due to the highest number of visitors arrival recorded in MNP. A survey form consisted of 28 structured questions was handed out to visitors exiting the park. The questionnaires consist of six sections which include; i) psychographic characteristic, (ii) MNP attractions, (iii) customer satisfaction, (iv) behavioral outcomes, (v) trip characteristics and (vi) respondent profiles. The section was to measure Mulu National Park tourists' satisfaction, psychographic characteristic, their intention to revisit in the future and their intention to recommend it to relatives and friends.

## RESULTS AND DISCUSSION

**Respondents' General Characteristics:** The respondents' general characteristics were characterised by their age, gender, education level and income. Socio- demographic characteristics are important in obtaining the first glimpse of the overall profile of the respondents, whereby this information have provides the respondents' differences in their characteristics. Socio- demographic characteristics of tourists' to MNP are as follows:

**Gender:** Out of 251 respondents surveyed, 48.2% were male while another 51.8% were female (Table 1). The results show the respondents' gender in which the female respondents accounted for 51.8% of the population, which was only 3.6% higher than male respondents. The almost equal's proportions of gender within nature-based tourists are expected at present, whereby females tend to play a more active part in engaging in nature-based tourism. Some other studies that also report equal portions in gender. It is found that in German national park; 58.5% were females and 41.5% were male [15]. Based on the data in Table 1, females are dominating the arrival in MNP. It is also found that 62% of tourists at Queensland National Park were also female [16].

Table 1: Respondents' Profile

Profile	Percentage (%)
<b>Gender (n=251)</b>	
Male	48.2
Female	51.8
<b>Age (n=251)</b>	
Less than 20	6.8
21-25	13.5
26-30	19.5
31-35	17.1
36-40	10.0
41-46	8.4
47-50	7.6
Above 50	17.1
<b>Education Level (n=248)</b>	
Primary School / Secondary School	19.5
Diploma	17.5
Degree	37.8
Masters / PhD	23.9
<b>Level of Income (n= 131)</b>	
Less than RM3000	15.9
RM 3001-RM6000	7.2
RM 6001-RM9000	12.0
RM 9001-RM12000	4.4
More than RM12000	12.7

**Age:** The highest percentage of the respondents' ages was between 26-30 years old in Table 1. It was also found that 66.9% of all the respondents interviewed were below the age of 40 years old while the remaining respondents were above 40. More than half occasional tourists in the UK were in the group of 17-34 years old [17]. In another study, which involved the tourist of West Java, Indonesia national park, the results revealed that 53% of young adults aged between 21-30 years old [18].

**Education Level:** Most of the respondents possess tertiary education at the first degree level and postgraduate levels, which accounted to a total of 61.7% from overall respondents. This study recorded that 37.8% Bachelor degree as the highest level of education while 23.9% at postgraduate as their highest education level. Education is positively related to the participation in ecotourism destination [3]. It shows a consistent pattern with respect to the relationship between educational level of tourist and ecotourism [19].

**Level of Income:** Only 131 respondents answered this question. A total of 121 respondents did not answer the question and the results of those who did are reflected in Table 1. It is important to note that the amount indicated by foreign tourists was converted into the Malaysian Ringgit currency. Most respondents who answered the question earned RM 6,000 and above, that totals up to 29.1% while less than 23.1% of the overall sample earned less than RM6, 000. It is reported that income affects the spending of tourist [20] and [21]. It is also discovered that tourist earn higher income than non tourist [22] and [23].

**Psychographic Segmentation:** Psychographic data are more useful for the purpose of predicting consumption and /or buying behavior. Psychographic segmentation is concerned with the study and classification of people according to their activities, interests and opinions (AIO). It can also be referred to a study which emphasises the use of generalised personality traits to provide meaningful marketing information. In other word, a study that can help to describe existing markets in terms of more than just a statistic but rather, through personal traits, in the form of human portraits [24] and [25].

**Activities:** According to [26], they stated that activities can be defined as manifested actions such as work, hobbies, social events, vacation and shopping. In terms of activities involving in MNP, largely the respondents were most appealed to the activities of cave exploring (71.3%),enjoying beautiful scenery (67.3%), bat watching (55.8%), pinnacle trail (43.8%), photography (43.4%), canopy skywalk (42.2%), relaxing (37.8%), forest walk (37.8%) and jungle trekking (37.5%) (Table 2). It was similar with the previous study conducted by [3] which found that most respondents who visited MNP came to experience its nature and recreational challenge. Meanwhile, they are not appealing at all to the activities of mountain climbing, rock climbing or abseiling and camping

**Interest:** An interest in some object, events or topic such as family, home, job, communication and food is the degree of excitement that accompanies both special and continuing attention to it [26]. Out of the entire sample,

Table 2: Activities in MNP

Activities	Not appealing at all (%)	Not likely (%)	Undecided (%)	Possibly (%)	Most Appealing (%)
Bird Watching	8.4	4.8	25.9	37.5	23.5
Canopy Skywalk	3.6	0.8	17.1	36.3	42.2
Cave Exploring	0.8	3.6	4.8	19.5	71.3
The Pinnacle Trail	5.2	9.2	17.1	24.7	43.8
Bat Watching	2.4	2.0	13.9	25.9	55.8
Jungle Trekking	0.8	6.8	15.9	39.0	37.5
Enjoying Beautiful Scenery	0	0.8	10.0	21.9	67.3
Rock Climbing / Abseiling	10.8	12.0	26.3	23.9	27.1
Relaxing	1.2	7.6	16.3	37.1	37.8
Camping	9.6	17.5	26.3	28.7	17.9
Night Shift	6.0	9.2	35.9	30.3	18.7
Mountain Climbing	12.0	15.9	17.5	29.5	25.1
Forest Walk	4.0	.8	19.9	37.5	37.8
Visit Aboriginal / Cultural Sites	7.6	6.4	23.1	37.8	25.1
Guided Tours	1.2	6.4	12.7	44.2	35.5
Photography	0	5.2	13.1	38.2	43.4
Fitness / Health	2.0	8.8	26.3	36.3	26.7

Table 3: Tourist Interest in MNP

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Stimulate Curiosity	1.2	1.2	10.4	43.4	43.8
Increasing Knowledge	0.4	0.8	8.0	43.4	47.4
Sharing Experience and Knowledge	0.4	1.2	13.9	35.1	49.4
Enjoy Communication	0	4.4	15.5	47.4	32.7
Relaxing Physically	3.6	11.2	21.1	32.7	31.5
Feeling Refreshed	2.0	0	13.1	41.4	43.4
Having Fun	0.4	0.8	14.3	38.2	46.2
Having New and Unusual Experience	0.8	0	10.4	29.5	59.4
Escape From The Reality	1.6	4.4	19.1	39.0	35.9
Getting Away From Crowds	2.0	2.4	15.9	32.7	47.0
Getting Away From Stressful	2.0	4.0	10.8	27.9	55.4
Feeling Harmony	2.8	1.2	13.1	41.0	41.8
Enjoying Beautiful Environment	0	0	10.0	23.5	66.5

Table 4: Tourist Opinion

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
More Self-Confidence	0	7.6	43.8	35.5	13.1
More Independent	0	4.0	31.1	43.0	21.9
Personal Ability	0	2.8	33.9	54.6	8.0
Be Considered a Leader	1.2	13.9	37.5	42.2	5.2
Others Come For My Advice	1.6	6.4	51.8	35.5	4.8
Influence My Friend's Activities	0	4.4	41.0	51.8	2.8
Being Successful in Everything	0	10.8	38.2	42.6	8.4
Enjoy Convincing Others	1.2	12.7	41.8	33.1	11.2
Step Ahead	0	9.6	43.0	39.4	8.0
First to Know New Activities	3.2	14.3	49.4	27.9	5.2
Know The Name of National Park	6.8	21.5	43.0	26.3	2.4
A Good Source of Information	8.0	18.7	35.5	34.7	3.2

the item that says ‘enjoying the beautiful environment’ indicated the highest percentage (66.5%) of interest to come to MNP (Table 3). Followed by an interest of having a new and unusual experience, getting away from stressful, sharing experience and knowledge and increasing knowledge. Meanwhile, an interest in relaxing physically item was rated the lowest percentage; (31.5%) from all respondents. It is found that relaxing physical was the highest percentage in interest to the national park [27] and [28].

**Opinion:** Finally, opinion can be described as descriptive beliefs of oneself, social issues, politics and educations [26]. The opinion that was popular amongst MNP tourist was more independent (21.9%), followed by more self-confidence, enjoys convincing others and being successful in everything. This was followed by personal ability, a step ahead, to be considered a leader, the first to know upcoming activities, people come for advice, a good source of information, influence their friends’ activities

and the last one, knows the name of national park item which is depicted in Table 4. It is also discovered that personal ability was the highest percentage in opinion among the tourist.

## CONCLUSION

Ecotourism has been the subject of a really tight debate in recent years, with much of the focus related to sustainability, management, supply-side issues and market segmentation [29]. Many tourism related studies done in Malaysian context overlooked the tourists attributes by focusing only on local community's perception [30-35] and policy making and management [36-39]. However, limited evidence was available on the specific need to segment the market especially in the context of National Park. Market segmentation for ecotourism is important in the tourism industry in order to identify specific target market and to develop the product and services offered according to what suits best to each

segment. By having market segmentation, the proper marketing strategies can be established for the suitable targeted segment. The results reported in the study have provided crucial information to practitioners and policy makers especially to MNP. MNP is a suitable place to segment their tourist by using psychographic segmentation. The findings of this study indicate that tourists visiting MNP are heterogeneous which can be diverse in many aspects and characteristics. The study also shows that tourist also different in their interest and preferences such as activities, interests and opinions. In other to overcome the heterogeneity of tourist from the aspect of gender, age, education level and level of income, we proposed to use a proper psychographic segmentation to be established.

Thus, marketing strategies for a targeted market segments is needed in order to provide high value products and services and greater level of tourist's satisfaction. The strategies provide assistance to the industry players particularly ecotourism managers and tour operators in order to understand their potential tourist from the perspective of their needs, desires and satisfaction and also involve revisit intention to tourists. The management may need to look into how to increase the number of tourist to the park. This information is very valuable for the policy maker to find out more about the customers that they are serving. This study also can help them to clearly identify the product attributes of MNP. These attributes are significant in marketing management process and provides more insight to continuously develop the park. Practically the finding of the study will be a useful tool to industry players and MNP management in formulating a more sustainable ecotourism product. They will be able to see the importance of sustaining and improving the current management practices of the invaluable ecotourism products existed in the country. The information also obtained from assessing psychographic segmentation will be of value to resource managers, operators and destinations areas in their efforts to plan and manage a sustainable industry and to match the markets with the appropriate products. Continuous research on nature tourism is needed to monitor the changing demands and preferences of nature tourists and to assess present and future marketing strategies.

## REFERENCES

1. Ceballos-Lascurain, H., 1996. *Tourism, Ecotourism and Protected Areas*. Gland, Switzerland, World Conservation Union, pp: 301.
2. Theobald, W.F., (Ed.). 1994. *Global Tourism: The Next Decade*. Oxford, Butterworth-Heinemann, pp: 174-187.
3. Zaiton, S., K. Norfayanti, N.M. Nawi and N.K. Kamarulzaman, 2012. Profiles of ecotourists; at Mulu National Park based on market segmentation characteristics. *The Malaysian Forester*, 75(1): 97-104.
4. Herbig, P. and B. O'Hara, 1997. A guide for marketers. *European Business Review*, 97(5): 231-236.
5. Chen, J.S. and C.H.C. Hsu, 1999. The use of logit analysis to enhance market segmentation methodology. *Journal of Hospitality and Tourism Research*, 23(3): 268-283.
6. Dolnicar, S., 2004. Beyond 'Commonsense Segmentation': a systematic of segmentation approaches in tourism. *Journal of Travel Research*, 42(3): 244-250.
7. Swarbrooke, J. and S. Horner, 1999. *Consumer Behavior in Tourism*. Oxford, Butterworth Heinemann, pp: 349.
8. Sarigollu, E. and R. Huang, 2005. Benefit segmentation of visitors to Latin America. *Journal of Travel Research*, 43(3): 277-293.
9. Dibb, S., 1998. Market segmentation: strategies for success. *Marketing Intelligence and planning*, 16(7): 394-400.
10. Jang, S.C., A.M. Morrison and J.T. O'Leary, 2002. Benefit segmentation of Japanese pleasure travelers to the USA and Canada: selecting target markets based on the profitability and risk of individual market segments. *Tourism Management*, 23: 367-378.
11. Alastair, M.M., 2002. *Hospitality and Travel Marketing*. Columbia, Delmar Publishing, pp: 625.
12. Dolnicar, S., 2008. Market Segmentation in Tourism. In S. Dolnicar, (ed), *Managing Tourism Firms*. Cheltenham, Edward Elgar Publishing, pp: 162.
13. Antonides, G. and W.F. Van Raaij, 1998. *Consumer Behaviour: a European Perspective*. New York: Wiley, pp: 548.
14. Borsarmulu Park Management, 2012. About Gunung Mulu. Retrieved January 15, 2013, from <http://www.mulupark.com>.
15. Kalisch, D. and A. Klaphake, 2007. Visitor's satisfaction and perception of crowding in a German National Park: a case study on the island of HalligHooge. *Forest, Snow and Landscape Research*, 81(1/2): 109-122.
16. Weaver, D.B. and L.J. Lawton, 2002. *Tourism Management (2<sup>nd</sup> Ed.)* Queensland, Milton, pp: 270-280.

17. Diamantis, D., 1999. The characteristics of UK's ecotourists. *Tourism Recreation Research*, 24(2): 99-102.
18. Shamsudin, M.M., A. Radam and A. Shuib, 2009. Willingness to pay towards the conservation of ecotourism resources at GunungGedePangrango National Park, West Java, Indonesia. *Journal of Sustainable Development*, 2(2): 173.
19. Hvenegaard, G.T. and P. Dearden, 1998. Ecotourism versus tourism in a Thai national park. *Annals of Tourism Research*, 25(3): 700-720.
20. Thrane, C., 2002. Jazz festival visitors and their expenditures: Linking spending patterns to musical interest. *Journal of Travel Research*, 40(3): 281-286.
21. Lee, H.C., 2001. Determinants of recreational boater expenditures on trips. *Tourism Management*, 22(6): 659-667.
22. Blamey, R., 1995. The nature ecotourism. Occasional Paper Number 21. Canberra, Bureau of Tourism Research.
23. Backman, K.F. and T.D. Potts, 1993. Profiling nature-based travelers: Southeastern market segments. South Carolina, Strom Thurmond Institute Press.
24. Dorny, L.R., 1971. Observations on psychographics, in C. King and D. Tigert (eds). *Attitude Research Reaches New Heights*. Chichago: American Marketing Association, pp: 200-201.
25. Peterson, R.A., 1972. Psychographics and media exposure, *Journal of Advertising Research*, 12: 17-20.
26. Peter, J.P. and J.C. Olson, 1994. *Understanding Customer Behaviour*. Third Edition. United States of America: Irwin, Inc., pp: 505.
27. Hsu, Cathy, H.C., Soo K. Kang and W. Kara, 2002. Psychographic and Demographic Profiles of Niche Market Leisure Travelers. *Journal of Hospitality and Tourism Research*, 26(1): 3-22.
28. Galloway, G., 2002. Psychographic segmentation of park visitor markets: evidence for the utility of sensation seeking. *Tourism Management*, 23: 581-596.
29. White, P.A., 1996. North American ecotourism markets: Motivations, preferences and destinations. *Journal of Travel Research*, 34(4): 2-10.
30. Johari, S., S. Ramachandran and A. Shuib, 2015. Participation of the Bidayuh Community In Tourism Developmental Initiatives in Bau, Malaysia. *Journal of Life Sciences*, 12(2): 46-48. <http://doi.org/10.1017/CBO9781107415324.004>.
31. Kumar, R., S.S. Gill and P. Kunasekaran, 2012. Tourism as a Poverty Eradication Tool for Rural Areas in Selangor, Malaysia. *Global Journal of Human Social Science*, 12(7): 21-26.
32. Kunasekaran, P., 2013. Local Community' s Perception of Tourism in Redang Island, Malaysia, 15(1): 0-1.
33. Kunasekaran, P., S.S. Gill, A.T. Talib and M. Redzuan, 2013. Culture As An Indigenous Tourism Product Of Mah Meri Community In Malaysia. *Life Science Journal*, 10(3): 30-31.
34. Kunasekaran, P., S. Ramachandran, Z. Samdin and K.W. Awang, 2012. Factors affecting farmers' agro tourism involvement in Cameron Highlands, Pahang. *OIDA International Journal of Sustainable Development*, 4: 83-90. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2048679](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2048679).
35. Kunasekaran, P., S. Ramachandran and A. Shuib, 2011. Development of Farmers ' Perception Scale on Agro Tourism in Cameron Highlands, Malaysia. *World Applied Sciences Journal*, 12: 10-18.
36. Ling, S.M., S. Ramachandran, V. Nair and A. Shuib, 2013. Scoping the Potentials and Pitfalls of Rural Tourism Policies?: Constructivism as a Theoretical Lens, 36: 157-172.
37. Nair, M.B., S. Ramachandran, A. Shuib, H.M. Syamsul and V. Nair, 2012. Multi-Criteria decision making approach for responsible tourism management. *Malaysian Forester*, 75(2): 135-146. Retrieved from <http://www.scopus.com/inward/record.url?eid=2-s2.0-84871214686&partnerID=40&md5=024e6162d604ac8ab8ba8cba601fd375>.
38. Prabhakaran, S., V. Nair and S. Ramachandran, 2013. Marine waste management indicators in a tourism environment. *Worldwide Hospitality and Tourism Themes*, 5(4): 365-376. <http://doi.org/10.1108/WHATT-03-2013-0013>.
39. Siow, M.L., S. Ramachandran, A. Shuib and S.H. Mohammad Afandi, 2014. Malaysia's National Ecotourism Plan from a semiotic perspective. *Malaysian Forester*, 77(2): 73-86.