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Expenditure-based segmentation of foreign visitors in a Nature reserve in Tokyo, Japan

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Abstract

The study examined the expenditure, socio-demographic and trip characteristics of foreign visitors to a popular nature reserve in Tokyo, Mount Takao. 742 respondents completed surveys during low and peak seasons. Heavy, medium and light expenditure segments were distinguished. Statistically significant differences were found in socio-demographic and trip characteristics among the segments. Specifically, the results revealed significant differences in the status of foreign visitors, travel companions, repeat visitation rate, and visiting season among the three expenditure segments. Heavy spenders were more likely to be the foreign tourists travelling as a couple, first-time visitors during peak season. The identification of the characteristics of different spender segments is expected to contribute to the development of targeted marketing strategies to attract heavy spenders, facilitate the management of resources, and inform strategies to encourage spending by visitors in the light and medium expenditure segments.

Keywords:

Expenditure-based segmentation, socio-demographics, targeted marketing, trip characteristics

1   Introduction

Tourism revenue is a major source of income for some areas (Hung et al., 2012), and visitor expenditure is an ongoing focus of tourism studies. To date, international tourism demand has mainly been evaluated on the macro level based on variables such as total

arrivals, nights spent at the tourist destination, total tourism receipts (Brida & Scuderi, 2013; Disegna & Osti, 2016; Fuchs et al., 2014; Fredman, 2008), and economic impact (Wagner, 1997). However, data allowing the full economic potential of a given destination to be determined are lacking (Disegna & Osti, (2016). Visitor expenditure contributes considerably to the economy of certain destinations (Hung et al., 2012; Mihalic, 2014) and serves as an indicator of the economic impact of tourism (Fredman, 2008). Research on tourism expenditure has concentrated primarily on identifying factors associated with expenditure levels, including socio-demographic, trip-related, and psychographic variables (Abbruzzo et al., 2014; Eugenio-Martin & Inchausti-Sintes, 2016; Marrocu et al., 2015). Understanding tourism expenditure is very important for sustainable and profitable tourism.

The increasing demand for access to natural areas requires a deeper understanding of the spending habits of foreign tourists by tourist managers and marketers (Balmford et al., 2009; Holden & Sparrowhawk, 2002). Nature-based tourism generates significant income for commercial and government entities and residents (Sharpley & Telfer, 2002). In addition to preservation and sustainability, the main focus of nature-based destinations is increasing revenue (Metin, 2019) to support the community. Compared to nature-based attractions in other countries, those in Japan focus more on an area's culture, history, and heritage; typically, they include a Buddhist shrine or temple. These sites tend to attract visitors interested in the beliefs of local people.

Some nature-based destinations also include restaurants and souvenir shops, thus providing more opportunities for visitors to spend their money. For marketers, visitor and travel expenditure patterns are important. Many factors are considered in analyses of visitor spending, including the costs of transportation, food and beverages, and gifts and souvenirs (Pulido, 2016; Woodside and Dubelaar, 2002). A greater understanding of tourists' spending patterns could help determine the size of the travel market and factors influencing expenditure (Jang et al., 2004). The policies and marketing activities of a given destination strongly influence the revenue generated by tourism (Zhang et al., 2012). Targeting heavy spenders is an effective marketing strategy, as this type of tourist accounts for a relatively high percentage of total expenditure (Spotts & Mahoney, 1991). Identifying the characteristics of light and medium spenders is also important to optimise the income potential of a tourism destination (Cárdenas-García et al., 2015; Craggs & Schofield, 2009).

In 2018, the Tokyo Metropolitan Government implemented the Tokyo Tourism Strategy Action Plan, which set 2.7 trillion yen as the tourist expenditure target for Tokyo (TMG, 2018). However, this target raised concerns regarding the role of nature-based destinations. There have been few studies of the management and marketing of tourist destinations to maximise revenue (Lima et al., 2012). There is little information on the characteristics of nature-based tourists (Jones & Ohsawa, 2016). Visitors to nature-based destinations are a non-homogeneous group, and the ability to predict spending behaviour is crucial for estimating tourism revenue (Mehmetoglu, 2007).

This study aimed to assess foreign visitors to Mount Takao, a nature-based destination in Tokyo, Japan. The foreign visitors were divided into three expenditure segments (heavy, medium, and light spenders) based on their responses to a questionnaire survey. The data were analysed in terms of spending patterns and socio-demographic and trip characteristics to optimise the management and attractiveness of nature destinations in the area for greater revenue generation.

2   Literature Review

2.1 Market segmentation

Market segmentation is an effective marketing strategy that divides a heterogeneous group into homogeneous sub-groups based on their socio-demographic and psychological characteristics, and consumer behaviour. In this area, studies have been conducted on motivation-based segmentation (Albayrak & Caber, 2018; Carvache-Franco et al., 2019; Otoo et al., 2020), activity-based segmentation (Akers & Akers, 2020; Barić et al., 2016; Eusébio et al., 2017; Pesonen & Tuohino, 2017), destination image (Leisen, 2001; Prayag, 2010), lifestyle factors (Bruwer et al., 2017; Iversen et al., 2016), cultural aspects and heritage of the destination (Ramires et al., 2018), nature-based destinations (Fung & Jim, 2015; Sheena et al., 2015; Wang et al., 2018), health and spa facilities (Ahani et al., 2019; Dryglas & Salamaga, 2017), and various activities, events, and sports (Dixon et al., 2012; Tkaczynski & Rundle-Thiele, 2020). Effective market segmentation enables the development of effective marketing strategies, in turn facilitating short- and long--term management of destination resources (Lima et al., 2012; Svensson et al., 2011).

2.2 Expenditure-based segmentation

Multiple tourism studies have attempted to apply expenditure-based segmentation to a specific destination (Ferrer-Rosell et al., 2016; Fourie et al., 2018; Mortazavi & Lundberg, 2020; Petrick, 2005; Pizam & Reichel, 1979; Shani et al., 2010; Spotts & Mahoney, 1991). Information gathered by such studies is important for developing and promoting local tourist attractions and ensuring that specific market segments, such as heavy spenders, are offered enticing attractions (Alegre et al., 2011; Barquet et al. 2011). Craggs and Schofield (2009) examined the expenditure of day-trippers visiting the Quays in Salford, United Kingdom. Heavy, medium, and light spender segments, and a no-expenditure segment, were devised and showed significant differences in all variables examined. In another expenditure-based segmentation study (Barquet et al., 2011), tourists visiting the Biathlon World Cup were divided into heavy, medium, medium-light, and light expenditure segments. The heavy spender segment mainly comprised visitors aged between 41 and 50 years, travelling in groups of five to ten people.

The expenditure patterns of visitors differ, including at nature-based destinations. Lima et al. (2012) distinguished among light, medium, lodging and activity-oriented, and food and shopping-oriented expenditure segments; however, they did not find significant differences among segments. The visitors were mainly domestic tourists, which may have contributed to this result. Oh and Schuett (2010) classified visitors to "fee-fishing sites" in a rural, nature-based destination in West Virginia (USA) into excursion and overnight-stay segments. The study found differences between the two segments in terms of trip behaviour, group composition, origin, motivation, and recreational activity preferences. Mehmetoglu (2007) investigated visitor participation in nature-based activities and expenditure at a nature-based attraction in northern Norway. The study showed that light spenders preferred historic and nature sites, whereas heavy spenders were more interested in nature-related activities, such as rock climbing, bird watching, and rafting.

3   Methodology

3.1 Questionnaire survey

In total, 742 questionnaires were collected from foreign visitors to Mount Takao between May and July 2018, i.e. during the low season (the rainy season) and between October and November 2018 (the peak season, coinciding with the changing of the autumn leaves). The questionnaire captured socio-demographic data such as age, gender, the highest level of education, and nationality and was distributed both to tourists and long-term foreign residents of Japan. In the trip characteristics domain, the information gathered includes the size of the group, travel companion/s (family, friends, colleagues or travelling as a couple), and repeat visit status (first-time visitor, weekly visitor, monthly visitor, or annual visitor). The respondents were asked to keep track of their spending at Mount Takao and record their purchases. Spending was divided into food and beverages, souvenirs, and activities; the total expenditure was obtained by summing the amount spent in each of the three categories. Activities included entrance fees and cable car and chairlift fees. All monetary amounts were converted into US dollars (USD) to standardise the results. Food and beverage spending covered the Mount Takao area only, e.g., on-site snack vendors and restaurants. Souvenirs included merchandise and talismans, and charms purchased at the shrine and temple at Mount Takao.

3.2 Analysis

In the first step of the analysis, the respondents were classified into three expenditure-based segments (heavy, medium, and light spenders) based on total expenditure. Such "three-part segmentation", as described by Mok and Iverson (2000) and Craggs and Schofield (2009), is superior to two-part segmentation (e.g., heavy vs light spenders). The three-part approach reduces the difference between the heavy and light spenders, as most individuals will fall somewhere near the middle of the frequency

distribution (Spotts & Mahoney, 1991). The light and heavy spender segments included those in the lowest and highest total expenditure tertiles, respectively, with the medium spenders being those in the middle tertile. One-way ANOVA was performed to test for significant differences among the segments. Pearson's chi-square test and Goodman–Kruskal's tau statistic were also used to identify significant differences among the three expenditure segments, in socio-demographic and trip characteristics. Profiles of the heavy, medium, and light spenders were built up based on the test results.

3.3 Study site

Mount Takao is located in the western part of Hachioji City (Tokyo, Japan). It takes less than 1 hour to reach this site from the metropolitan area of Tokyo, making it one of the most accessible nature-based tourism destinations in the region (JNTO, 2019). Mount Takao continues to be one of the top attractions during spring, summer, and autumn, both for locals and foreign visitors (JNTO, 2019). The magnificent sight of the autumn leaves at Mount Takao during the peak season is one of the main reasons why tourists visit this site. The low season is characterised predominantly by rainy days. In addition to the temple and shrine on top of the mountain, Mount Takao also offers attractions such as hot springs and two museums (the Trick Art Museum and Takao 599 Museum) and cable car and chairlift services (JNTO, 2019). The variety of attractions at Mount Takao entices many visitors, including locals and overseas tourists (JNTO, 2019). The hot spring is one of the most popular attractions at Mount Takao. In addition, there is an authentic Japanese restaurant that serves many different types of local dishes, such as Tororo Soba (Matcha, 2019). For foreign tourists, souvenirs are readily available and differ by season.

4   Findings

4.1 Expenditure by market segment

The respondents were divided into three segments based on their total expenditure at Mount Takao, as described above. The light, medium and heavy spenders spent ≤ 8.45, 8.46–20.46 and ≥ 20.47 USD, respectively.

Table 1: Expenditure by market segment (in US dollars, USD)

Spending category	Total sample	Market segment				
		Light	Medium	Heavy	F-ratio	Sig.
	N = 742	n ¬= 248	n = 238	n = 256		
Total spent	23.3586	3.1420	13.4414	52.1633	138.814	.000*
Activity	.3045	.4721	2.4670	1.1043	30.787	.000*
Souvenir spending	8.040	.087	1.739	21.602	58.528	.000*

Food and beverage spending	14.2144	2.7508	11.2298	28.0943	80.173	.000*

*Note: *p < 0.05*

A significant difference was found among the segments for all three spending categories. Food and beverage expenditure was highest among the spending categories for all three segments, whereas activity expenditure was the lowest. However, the heavy spenders spent less on activities than on any other spending category, whereas the medium and light spenders spent the least amount on souvenirs. Interestingly, the medium spenders spent more money on activities than the heavy spenders, who preferred to spend money on souvenirs.

4.2 Characteristics of segments

The characteristics of the light, medium, and heavy spenders are compared in Table 2 and Table 3, which present the socio-demographic and trip characteristics of the visitors. The heavy spenders were more likely to be foreign tourists travelling as a couple, be first-time visitors, and visit during the peak season than light and medium spenders.

Table 2: Demographic characteristics of the market segments

Variable		Light (n= 248/ 33.4%)	Medium (n = 238/ 32.1%)	Heavy (n = 256/ 34.5%)	All (n = 742/ 100.00%)	Test statistic (Chi-square/ F)	Goodman–Kruskal's tau (Chi-square/ eta (F-test)
Gender	Male	145 (58.5%)	144 (60.5%)	143 (55.9%)	432 (58.2%)	1.103	.576
	Female	103 (41.5%)	94 (39.5%)	113 (44.1%)	310 (41.8%)		
Age (years)	18–25	82 (33.1%)	87 (36.6%)	66 (25.8%)	235 (31.7%)	9.990	.265
	26–35	107 (43.1%)	105 (44.1%)	123 (48.0%)	335 (45.1%)		
	36–45	38 (15.3%)	33 (13.9%)	40 (15.6%)	111 (15.0%)		
	46–55	18 (7.3%)	12 (5.0%)	24 (9.4%)	54 (7.3%)		
	≥ 56	3 (1.2%)	1 (0.4%)	3 (1.2%)	7 (0.9%)		
Highest level of education	High school	12 (4.8%)	19 (8.0%)	19 (7.4%)	50 (6.7%)	4.005	.406
	University/ college	234 (94.4%)	218 (91.6%)	233 (91.0%)	685 (92.3%)		

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	No formal education	2 (0.8%)	1 (0.4%)	4 (1.6%)	7 (0.9%)		
Status	Resident	116 (46.8%)	108 (45.4%)	79 (30.9%)	303 (40.8%)	16.198*	.000*
	Tourist	132 (53.2%)	130 (54.6%)	177 (69.1%)	439 (59.2%)		

*Note: *p < 0.05*

No significant difference was found in gender, age, or education level among the segments. There were more males in all three segments (58.2% of the overall sample). The percentage of males was highest in the medium spender segment (60.5%). The percentage of females was highest in the heavy spender segment (44.1%). The heavy spender segment also had the highest percentage of 26–35-year-olds (48.0%). Most of the respondents (92.3%) had graduated from university or college in all three segments. The light spender segment had a slightly higher percentage (94.4%) of university and college graduates compared to the heavy and medium spender segments. A significant difference (p < 0.05) was found in the status of foreign visitors among segments, with the percentage of foreign tourists being highest in the heavy spender segment (69.1%). The light spender segment had the highest percentage of foreign residents (46.8%), followed by the medium spender segment.

Respondents who travelled as a couple spent more money and were more prevalent in the heavy spender segment (25.8%) than the other segments. Travel with colleagues (6.7%) and friends (45.0%) was most common in the medium spender segment. Visitors who travelled alone (23.8%) or with family (18.1%) were most prevalent in the light spender segment. Overall, there was a significant difference among the travel companion variable (p < 0.05). One to three people (74.6%) was the predominant group size in the light spender segment, and a travel group of four to six people was seen most often in the heavy spender segment (19.1%). Larger groups, of seven to nine people (5.9%) or more than ten people (8.4%), were seen most often in the medium spender segment. Overall, there was no significant difference in group size among the segments.

Table 3: Trip characteristics by market segment

Variable		Light (n = 248/ 33.4%)	Medium (n = 238/ 32.1%)	Heavy (n = 256/ 34.5%)	All (n = 742/ 100.00%)	Chi-square statistic/ F-ratio	Goodman–Kruskal's tau (Chi-square/ eta (F-test)
Travel companion	Alone	59 (23.8%)	37 (15.5%)	49 (19.1%)	145 (19.5%)	19.717*	.011*
	Family	45 (18.1%)	40 (16.8%)	36 (14.1%)	121 (16.3%)		

	Colleagues	13 (5.2%)	16 (6.7%)	8 (3.1%)	37 (5.0%)		
	Friends	92 (37.1%)	107 (45.0%)	97 (37.9%)	296 (39.9%)		
	Couple	39 (15.7%)	38 (16.0%)	66 (25.8%)	143 (19.3%)		
Group size	1–3 people	185 (74.6%)	173 (72.7%)	186 (72.7%)	544 (73.3%)	11.813	.065
	4–6 people	37 (14.9%)	31 (13.0%)	49 (19.1%)	117 (15.8%)		
	7–9 people	11 (4.4%)	14 (5.9%)	3 (1.2%)	28 (3.8%)		
	≥ 10 people	15 (6.0%)	20 (8.4%)	18 (7.0%)	53 (7.1%)		
Repeat visitation	First-time visitor	202 (81.5%)	185 (77.7%)	210 (82.0%)	597 (80.5%)	17.428*	.025*
	Weekly visitor	3 (1.2%)	2 (0.8%)	5 (2.0%)	10 (1.3%)		
	Monthly visitor	11 (4.4%)	12 (5.0%)	2 (0.8%)	25 (3.4%)		
	Annual visitor	29 (11.7%)	39 (16.4%)	39 (15.2%)	107 (14.4%)		
	Visited once	3 (1.2%)	0 (0.0%)	0 (0.0%)	3 (0.4%)		
Season	Low	90 (36.3%)	108 (45.4%)	56 (21.9%)	254 (34.2%)	30.963*	.000*
	Peak	158 (63.7%)	130 (54.6%)	200 (78.1%)	488 (65.8%)		

*Note: *p < 0.05*

A significant difference among segments was found for the repeat visitation variable (p < 0.05). The percentage of first-time visitors was 80.5% across all segments. The heavy spender segment had a higher percentage of first-time visitors (82.0%) compared to the medium and heavy spender segments. The percentages of monthly visitors (5.0%) and annual visitors (16.4%) were highest in the medium spender segment. These results are in line with findings from other studies (Alegre & Juaneda, 2006; Kruger et al., 2010) showing that first-time visitors spend more than repeat visitors, including those who had visited at least once before (Kruger & Saayman, 2016). Peak season visitors (78.1%) dominated the heavy spender segment, while the medium spender segment had the highest percentage of low season visitors (45.4%). The relationship between visitation season and expenditure segment was statistically significant (p < 0.05). These results agree with those of Díaz-Pérez et al. (2005), showing that spending differs by season, i.e., visitors spend less in the low season.

5   Discussion

Three expenditure segments were distinguished (light, medium, and heavy spenders), confirming Mehmetoglu (2007) suggestion that nature-based tourists comprise a non-homogeneous group in terms of expenditure. Marketing strategies should specifically target the heavy spender segment to increase destination revenue even without any increase in the overall number of visitors. Local business owners in other sectors could work together to promote their products (Nguyen & Pearce, 2015) and thus attract heavy spenders. The heavy spenders in this study spent more money on souvenirs (Table 1). This information should encourage destination managers to develop a more diverse range of souvenirs to encourage greater visitor expenditure (Goeldner & Ritchie, 2005; Swanson & Horridge, 2006). A souvenir including an image of Mount Takao may be particularly attractive. Also, souvenirs should be designed according to the finding that heavy spenders view tourism as a "luxury good" (Mortazavi & Lundberg, 2020).

Effective promotion and integration of products and services may be crucial to increase foreign visitor expenditure, especially medium and light spenders (Marrocu et al., 2015). Marketers could target light spenders, including foreign residents, according to their demographic characteristics. Advertising should also promote food and beverages and souvenirs to attract more foreign visitors potentially; the uniqueness of the products should be highlighted. Also, advertising materials should be available in the English language, as some foreign residents do not speak Japanese. Designing and implementing efficient marketing strategies targeting foreign residents in the minority in the heavy spender segment could boost revenue, especially in the low season (Fernández-Morales et al., 2016).

The development of a wider range of activities may attract more foreign visitors from the heavy spender segment (Jang et al., 2005). This group spent less on activities than the medium spenders in our study. This segment's spending patterns and characteristics revealed herein provide some insight regarding areas that could be targeted to promote expenditure. The heavy spender segment included a relatively large proportion of couples; cooperation between destination managers and local business owners could lead to more spending opportunities for couples (Wong & Lau, 2001; Yang et al., 2019). Additionally, developing new products and services may encourage first-time visitors to return (Vassiliadis, 2008).

Nature-based tourism has been characterised in terms of individuality, activity, and flexibility (Saarinen, 2005). Different types of activities could increase its attractiveness, including handicrafts and Japanese gastronomy experiences targeting light and medium spenders. Tourists in these segments tend to travel in larger groups with friends and family. Finally, the development of more diverse products and, in particular, activities may increase spending among tourists in all segments (Nguyen & Pearce, 2015); less was spent on activities than any other type of expenditure in our sample.

6   Conclusion

The purpose of this study was to characterise foreign visitors on day trips to the nature-based destination of Mount Takao in Tokyo, Japan according to their total expenditure. The results showed that the segments could be distinguished based on foreign visitor status (foreign tourist or foreign resident), travel companions, repeat visitation rate, and visitation season. The different segments should be strategically targeted to maximise tourism revenue. The information collected and analysed in this study is expected to help marketers develop strategies to attract more heavy-spending foreign visitors to tourist destinations and increase the spending of those in the light and medium expenditure segments.

The major limitation of this study was the difficulty in accurately determining the overall number of visitors to Mount Takao and the numbers of foreign tourists and foreign residents, as the available data were limited. Also, the representativeness of our sample is difficult to quantify; this is a common problem with visitor surveys (Lima et al., 2012). Further research is needed to further distinguish between foreign residents and foreign visitors in terms of expenditure, based on additional factors such as motivation and satisfaction.

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