

NATURE-BASED TOURISM MOTIVATIONS AND VISIT PROFILES OF DOMESTIC AND INTERNATIONAL SEGMENTS TO A JAPANESE NATIONAL PARK

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ABSTRACT: The rapid post-millennial internationalisation of Japan's tourism sector and the influx of international visitors have quickly increased visitors' heterogeneity, thereby posing challenges for management. Given the lack of prior research, we aimed to identify nature-based tourism (NBT) push-factor motivation domains of visitors in a Japanese national park and segment domestic and international visitors based on their motivations, demographics and trip profiles. Primary data collection of 137 responses took place in November 2019 through an on-site self-administered questionnaire. From 11 push-factor statements, the principal component analysis yielded a four-factor solution: 'enjoying nature with family or friends', 'improving physical health', 'discovering and learning' and 'escaping'. In addition, *t*-tests revealed significant differences between domestic and international visitors in three out of the four motivation dimensions. Underlying visitor profiles could explain some such differences. Despite the differences, both international and domestic visitors share similar motivations regarding 'improving physical health'. These findings hint at the complexity of monitoring heterogeneous visitor segments within Japanese NBT. Despite increasing international visitors, there has been a lack of the necessary infrastructure and facilities to accommodate them. Thus, this study's implications might help diversify NBT management strategies to deal with current shortcomings in Japan's tourism sector.

KEYWORDS: motivation, monitoring, nature-based tourism, international segments, national park

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Introduction

The global nature-based tourism (NBT) market helps generate funds for conservation and shapes people's awareness and attitudes towards the environment (UNEP-WCMC and IUCN 2016). However, motivations for NBT to protected areas such as national parks are disputed, and

demand trends are difficult to unpick due to data deficiencies. Pergams and Zaradic (2008) noted that after decades of growth due to increases in personal income, private car ownership and infrastructure development, the number of NBT visitors in certain wealthy countries had fallen into decline, including per capita visits to US national parks since 1987 and aggregate visitation

to Japanese national parks since 1991. In contrast, the global number of visits to protected areas is generally increasing and is negatively associated with the per capita income. This dissimilarity hints that disaffection with nature might not be the cause of the decreasing visits to natural areas in Japan. The reasons for the Japanese decline in NBT might be the growing urbanisation and sedentary lifestyles, the perceived overcrowding, the preference shift to new wildlife attractions or even the cost of tourism expenditure (Balmford et al. 2009). However, even though the Japanese data showed a steep decline in some of the most-visited parks, there have been few subsequent studies to monitor NBT demand trends. Thus, a follow-up study is overdue to monitor changes in NBT motivations and visit profiles to a Japanese national park.

Market segmentation has long been used to understand travellers from different backgrounds and to disaggregate tourism experiences accurately and effectively implement marketing activities (Shi et al. 2018). Moreover, on a national and regional scale, recognising the appropriate characteristics of a visitor segment can provide policy planners and businesses with a competitive advantage over other destinations by offering visitors suitable infrastructure, facilities and services (Dwyer, Kim 2003). Despite the increasing number of international visitors to Japan, many such amenities remain overly focussed on domestic demand and cannot readily cope with the recent arrival trends. Hence, our study aims to understand *in-situ* domestic and international visitor segments and compare their characteristics and motivations to facilitate NBT planning and policymaking.

Nature-based tourism in Japan

Japan's 35 national parks contain significant biodiversity in habitats that range from snow-capped mountains to coral reefs. Together with well-defined seasons, substantial resources and opportunities abound for multiple types of NBT including general activities such as hiking and sightseeing together with more adventurous ones (e.g. skiing, snowboarding and mountain biking). Most NBT activities that occur in and around natural parks were designated under the Natural Parks Law in 1957 (Ministry of Environment

2009). The upward trend in visitation to natural parks accelerated in the 1960s, driven by leisure demand that was facilitated by infrastructure development. Socio-demographic pull factors related to rapid urbanisation, combined with concurrent nostalgia for a real or imagined countryside left behind, also helped inflate NBT contribution to domestic tourism income from JPY 1.2 million in 1963 to JPY 3.8 trillion by 1980 (Partner 2004).

However, Japanese demand for NBT peaked in 1991 according to national indicators such as the number of national park visits (Pergams, Zaradic 2008). The subsequent three decades of declining visitation have been explained in terms of the shrinking population, economic decline of rural regions, market dynamics changes, and ineffective management (Jones 2012). In response to the downturn, the multi-faceted paradigm of ecotourism (*eko-tsūrizumu*) has been promoted by public and private sectors to reinvigorate the NBT market (Jones 2012; Hasan 2017). Yet despite devoting substantial economic and political resources, considerable challenges surround the development of NBT in Japan due to low levels of market penetration of ecotourism. For example, in a three-year consecutive survey of 500 people in the Kantō area, only 3.6% (2004), 2% (2005) and 3.4% of respondents in 2006 self-reported to have ever experienced ecotourism (Japan Ecotourism Society (JES), 2007). The next section explores whether the long-term decline in domestic demand can be partially offset by recently emerging trends and new motivations from the international market.

The contribution of domestic tourism (including NBT) to the national economy declined from JPY 20.2 trillion in 2013 to JPY 18.6 trillion in 2014. Conversely, revenue from international visitors' consumption doubled from JPY 1.1 trillion (2012) to 2 trillion in 2014 (OECD 2016). International arrivals into Japan doubled from 10 million in 2013 to 20 million in 2015, when the number of inbound visitors exceeded that of outbound Japanese departures (JTB Tourism Research & Consulting Co. 2020b; JTB Tourism Research & Consulting Co. 2020a), a milestone on the road to becoming a 'tourism-oriented country'. By 2017, Japan's 31.19 million inbound arrivals ranked 3rd in Asia and 12th worldwide, with NBT recognised as a critical driver of demand. For example, 'local experience-oriented consumption' (not

including shopping and eating Japanese food) was reported to be the main reason for visiting Japan by 34.8% of international visitors, of whom 74.1% visited outlying areas for 'nature and rural village experience tours' and 63.3% to 'enjoy nature and beautiful scenery' (Japan Tourism Agency 2019). In short, the rise of inbound tourism has attracted attention for its potential to revitalise Japan's rural regions, including many national park destinations (Jones, Ohsawa 2016).

However, the sudden internationalisation of the tourism sector in Japan and the rapid influx of international visitors have quickly increased the heterogeneity of visitors' motivations, posing challenges for promotion and management. In particular, the current NBT monitoring systems struggle to track visitor diversification, leading to underreported international visitors whose profiles and travel patterns differ from the conventional domestic benchmarks in ways not well understood (Jones, Ohsawa 2016). Despite significant short-term funding in the run-up to the 2020 Tokyo Olympics, the public sector faces particular difficulties in adapting distinctly domestic-oriented institutions to meet the new inbound demand's needs. Consequently, Japanese national parks still lack the capacity and infrastructure to accommodate inbound visitors' alternative motivations, not to mention overcoming cultural and linguistic barriers (Andonian et al. 2016).

One case study of representative domestic demand in Kamikochi (the Japan Alps National Park) identified three main visitor segments: sightseers, day hikers and mountain climbers, in which sightseers account for 51%, outweighing the proportion of day hikers and mountain climbers (Jones 2009). However, in other national parks such as Aso Kuju, specific motivations such as snowboarders and skiers are also dominant visitor segments in the winter. The domestic visitors to Japanese national park not in the winter are mostly the age of 40s and 50s or older, while the distribution of gender is different according to the national park (Jones 2009; Kim 2017; Inui et al. 2004; Romão et al. 2014). More than 60% of domestic visitors to national parks have completed a university degree or higher (Kim 2017; Inui et al. 2004). Given that the current tourism infrastructure and destination management in Japan continue to reflect domestic demand first and foremost, the aforementioned differences in

demographic characteristics can leave managers uncertain of visitors' motivations.

The two most frequently used means of transport for domestic visitors are private cars and railway respectively, due to the developed road and railroad infrastructure system across Japan (Kim 2017). Since 1995, the total number of overnight stays has dropped steadily across all age categories except for visitors within the 60s and 70s (Suganuma et al. 2011). Furthermore, domestic visitors prefer to travel with companions rather than travel alone; less than 10% are reported to travel alone to the national park (Romão et al. 2014; Kim 2017). Nevertheless, the length of stay in national parks of young visitors whose age is in the 20s rose rapidly after 2005 (Suganuma et al. 2011). Even though various scientists have studied domestic visitors' segmentation, international visitors seem to have been paid limited attention (Suganuma et al. 2011).

As the NBT sector in Japan has been stagnant or shrinking since the 1990s, the need for better monitoring and marketing from national park management is substantial. As explained above, the domestic NBT visitor profile is dominated by elderly travellers having moderate educational levels. The visitors frequently employ car and train as a means of transport and tend to travel with other companions. NBT visitors have gradually grown less likely to stay overnight, but the length of stay among young visitors' (in their 20s) has increased rapidly (Suganuma et al. 2011). However, in contrast to domestic segments that have been thoroughly studied, limited attention has been paid to international visitors. Given the current shortcomings in capabilities and infrastructure to accommodate and monitor international visitors, a segment study that simultaneously investigates domestic and international NBT via visitors' profiles and motivations could provide useful insights for future policymaking.

Segmenting domestic and international visitors

Given the tremendous growth of international tourism in the last several years and substantial differences between domestic and international visitors, segmentation of domestic and international visitors through identifying their differences is crucial for managerial planning and

implementation. Several studies have already been conducted to distinguish between domestic and international visitors. For example, a dataset of 729 visitors was used (Yuksel 2004) to compare and contrast domestic and international visitors' shopping preferences and service evaluations. Shin's study (2007) on the visitors' perceptions about the political boundaries and tourism in the Demilitarised Zone (DMZ) areas in Korea revealed substantial dissimilarities in perceived development potential with the DMZ areas between domestic and international visitors. Another research in Ha Long Bay, Vietnam, also discerned differences between international and domestic visitors regarding destination image, satisfaction with service attributes and intention to return (Bui, Le 2016).

Motivational differences between domestic and international visitors have also been frequently studied alongside tourism preferences: satisfaction, perception of destination image and return intention for segmentation. A study of Asian and American college students, for example, indicated apparent differences in students' travel motivations, such as foreign destination experience, physical activities, excitement, adventuresomeness, relaxation and travel bragging rights (Kim, Jogaratnam 2003). Based on visitors' core motivations, Mody et al. identified three distinct segments of responsible tourism in India: Responsibles, Novelty Seekers and Socialisers. Domestic visitors were more likely to be Novelty Seekers and Socialisers across the three segments, while international visitors were more likely to be Responsibles (Mody et al. 2014). Domestic and international visitors' motivational differences were also detected in the context of festival tourism in Florida (Park et al. 2008).

Regarding NBT, studies concerning the motivational differences between domestic and international visitors are seemingly limited, although several studies have recently examined distinctions between them. Munõz et al., using a web-based Public Participatory Geographic Information System (PPGIS), discovered the overlapped and self-segregated most essential places and values of local, domestic and international visitors to natural areas in Norway (Muñoz et al. 2019). The difference between Chinese and Australian visitors' attitudes towards nature, animals and environmental issues was also observed

in the Australian NBT context (Packer et al. 2014). Besides these studies, the segmentation of domestic and international visitors through motivational difference is relatively finite. Some studies on international visitors exist, but they solely concentrate on investigating international visitors' motivations, revisit intention and satisfaction, without comparing with domestic visitors (Dayour, Adongo 2015; Akama, Kieti 2003).

In sum, due to the cross-cultural distinctions, the travel characteristics and motivations of domestic and international visitors are very heterogeneous across tourism sectors (Vuong, Napier 2015; Vuong 2016). Various studies have attempted to segment domestic and international visitors by their preferences, satisfaction, perception of destination image and motivations. However, only a few on-site studies have been conducted to examine the motivational differences between domestic and international visitors in an NBT context.

Nature-based tourism motivations

Tourists' motivation is one of the fundamental themes in tourism research. Motivation is often defined as an internal factor influencing an individual's behaviours (Iso-Ahola 1980). There have been multiple motivational theories developed, but the three most commonly used theoretical frameworks are Maslow's Hierarchy of Needs (Maslow 1981), the seeking-escaping (or personal-interpersonal) dichotomous model (Iso-Ahola 1982) and state of cultural-socio-psychological disequilibrium concept (Crompton 1979; Kim et al. 2006). In the latter, Crompton identified socio-psychological motives as push factor motivations, such as escape, relaxation and exploration, and cultural motives as pull factor motivations, such as novelty and education (Crompton 1979). In other words, push factor motivations are internal desires to go on a vacation, while pull factor motivations are external desires aroused by the destination.

This push-pull motivation framework has been tested in various scenarios related to the travel motives of NBT visitors. Kim et al. surveyed the motivations of 2,720 visitors to six different national parks in South Korea. They found four major push motivation domains ('family togetherness and study', 'appreciating natural resources

and health', 'escaping from every routine' and 'adventure and building friendship') and three major pull motivation domains ('key tourist resources', 'information and convenience of facilities' and 'accessibility and transport') (Kim et al. 2003). Motivation domains of visitors to a New Zealand national park were slightly similar to their counterparts in South Korea. Specifically, five major push factor ('relaxation', 'social needs', 'a sense of belonging', 'mastery skills' and 'intellectual needs') and two major pull factor domains ('nature/accommodation' and 'infrastructure') were discovered (Pan, Ryan 2007), and our paper employed a similar methodology.

Wang researched the push and pull factor motivations of visitors to the Huangshan mountain, a World Heritage Site in China (Wang 2004). He found five different push factor domains: 'relaxation and health', 'appreciating natural beauty and acquire knowledge', 'enhancement of human relationship', 'prestige' and 'adventure and novelty'. Four major domains were discovered regarding pull factor motivations: 'high-quality tourist resources', 'a comfortable tourist environment', 'availability of information and convenient facilities' and 'management and service'. More recently, an investigation of push and pull motivations of visitors to a private botanical garden in Australia was implemented (Phau et al. 2013). The investigation only suggested three main push factor domains ('escape and health', 'appreciating cultural and natural resources' and 'curiosity') and three main pull factor domains ('easy access to educational, historical and natural resources', 'destination information and facilities' and 'relaxation and nature appreciation'). In both studies, ANOVA analysis was employed to examine the difference among sub-groups with different socio-demographic characteristics for managerial and practical implications.

Push and pull factor motivations have also been examined in several winter NBT destinations. Alexandris et al. (2009) examined the motivations of skiers in a major ski resort in north Greece and found seven push factor domains ('escape', 'social recognition', 'enjoying nature', 'excitement/risk', 'socialisation', 'skill development' and 'achievement'). Another study on motivations of visitors to Australian ski resorts showed five push factor domains ('relax/nostalgia', 'fun and excitement', 'escape', 'socialise' and

'explore') and three pull factor domains ('atmosphere/activities', 'skiing conditions' and 'cost') (Hall et al. 2017). More recent research on ecotourism visitors' motivations on Santay Island National Recreation Area, Ecuador, found five motivational dimensions: 'self-development', 'interpersonal relationships', 'building personal relationships', 'escape', 'rewards' and 'nature' (Carvache-Franco et al. 2019).

Overall, the push factor motivation domains are relatively similar regardless of seasons and areas. In contrast, the pull factor motivation domains are quite different and dependent on the destinations' characteristics. Some of the most frequently appearing push-factor domains are escapism, relaxation/health, exploration/intellectual needs/curiosity, togetherness/socialisation and nature appreciation. Based on several studies mentioned in this sub-section, we designed the questions about push-factors for our survey collection.

Research objectives

Given the increasing complexity in monitoring and managing NBT visitors and the declining number of domestic NBT visitors in Japan, a study examining the differences between domestic and international visitors for better promotion and satisfaction-improvement strategies is necessary. Moreover, the lack of comparative studies between domestic and international visitors' NBT motivations in the literature also hints at a gap in the tourism motivation study in the internationalisation era. Therefore, the objectives of our research are:

1. To identify NBT push-factor motivation domains of visitors in Kuju National Park.
2. To compare domestic and international visitor segments to Kuju National Park, seeking similarities and differences in their motivations, demographic and trip profiles.

Materials and methods

Study site and data collection

In this research, the study site is Aso Kuju National Park, located on the border of Oita and Kumamoto prefectures in the centre of



Fig. 1. Typical autumn scenery in Kuju with pampas grass and wooden boardwalk through the marsh.
Source: photos taken by authors.

Japan's southernmost island Kyushu. The national park was selected among eight included in the Ministry of the Environment's 'National Park Step-up Program 2020'. The programme's main objective is to 'support the future of Japan through tourism' by making the national parks a more attractive destination for a diverse mix including visitors from overseas (Ministry of Environment, n.d.). Therefore, findings from this study are expected to provide valuable insights for policy-makers and enrich the limited literature regarding the (dis)similarities between domestic and international NBT visitor segments.

Our study site is a highland marsh in Aso Kuju National Park that encompasses Mount Aso and the Kuju mountain range covering a total area of 72,678 ha. Owing to the beautiful natural landscapes, including volcanic peaks, abundant grasslands and mountainous marshes, the national park is an attractive NBT destination (Fig. 1). Along with August, visitor peaks in the pre-summer and autumn seasons coincide with the blooming of Kyushu Azalea (May–June) and fall leaves (November). Moreover, the park is also home to Kyushu's largest ski resort (260 ha), ensuring that year-round NBT activities are

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|-------------------------------------------|-----------------------------------|-------------------------------------------|
| 1 <u>Akan-Mashu National Park</u> | 4 <u>Ise-Shima National Park</u> | 7 <u>Kirishima-Kinkowan National Park</u> |
| 2 <u>Towada-Hachimantai National Park</u> | 5 <u>Daisen-Oki National Park</u> | 8 <u>Kerama Shoto National Park</u> |
| 3 <u>Nikko National Park</u> | 6 <u>Aso Kuju National Park</u> | |



Fig. 2. Location of eight national parks in the Ministry of Environment's programme. The map was retrieved from the Ministry of Environment's website (<http://www.env.go.jp/en/nature/enjoy-project/index.html>) and edited by the authors for better clarity.

Source: own compilation.

available. Figure 2 demonstrates the location of Aso Kuju National Park along with other seven national parks in the Step-up programme.

Pre-survey interviews were conducted with the Ministry of Environment rangers from the Chojabaru office to identify the study site’s geophysical characteristics and NBT profile. Thereafter, primary data collection was conducted through an on-site, self-administered questionnaire by the two authors, together with two trained data collectors at the Chojabaru Visitor Center. When respondents were filling in the questionnaire, survey collectors stayed next to them to answer any enquiries and ensure all the questions were completed. Data were collected over five days from 9:00 AM till the closure time to improve external validity. The data collection at the Visitor Centre took place at the beginning and in the middle of November 2019 (2nd, 3rd, 4th, 16th and 17th November). The study dates were purposively selected to coincide with the peak of the ‘Autumn leaves’ season while incorporating a mix of weekdays and weekends. Before administering the survey, a brief explanation of the questionnaire’s purpose and scope was provided to potential respondents, with a median response rate of 75%.

Based on the pre-survey interview with the rangers, we expected a reduced international visitor presence; so, the survey staff were positioned

at the Visitor Centre’s two main entrances to approach and intercept all suspected international visitors. Some Asian visitors may have been missed due to difficulties distinguishing between nationalities based only on appearance. However, we deliberately staggered the number and gender of domestic visitors proportional to those of international visitors. Over five days, a total of 137 responses were collected (71 domestic and 66 international visitors). The survey tool monitored visitors’ profiles and their motivational factors (11 push-factor and pull-factor items).

Measurement of push- and pull-factor motivations

The push- and pull-factor motivations were investigated via the degree of visitors’ agreement with a set of statements derived from prior studies. The question set comprised eleven push-factor statements and three pull-factor statements (Table 1). For the push-factor motivation, because we aim to segment domestic and international visitors through motivational differences but not to explore new motivation domains, we prioritised motivation domains that were commonly identified by prior research, such as escapism, relaxation/health, exploration/intellectual needs/curiosity, togetherness/socialisation and nature appreciation. For the pull-factor motivation, we

Table 1. Coding and literature sources of push- and pull-factor motivations.

Statements	Coding	Source
To get away from everyday life	mov_escape	(Kim et al. 2003; Phau et al. 2013; Alexandris et al. 2009)
To take rest	mov_rest	(Kim et al. 2003; Phau et al. 2013; Alexandris et al. 2009)
To do physical exercise	mov_exercise	(Alexandris et al. 2009)
To see wildlife	mov_wildlife	(Kim et al. 2003)
To enhance health	mov_health	(Kim et al. 2003; Phau et al. 2013)
To enjoy natural scenery	mov_scenery	(Kim et al. 2003; Phau et al. 2013; Alexandris et al. 2009)
To refresh mind and gain inspiration	mov_refresh	(Pan, Ryan 2007)
To enjoy time with family or friends	mov_fam	(Pan, Ryan 2007; Wang 2004; Alexandris et al. 2009)
To share travel experiences after returning home	mov_experience	(Wang 2004)
To discover new places and things	mov_discover	(Pan, Ryan 2007)
To increase my knowledge and experience	mov_knowledge	(Pan, Ryan 2007)
Attractive natural landscape (<i>grassland, forest, etc.</i>)	mov_landscape	(Kim et al. 2003)
Attractive hiking opportunity	mov_hiking	(Pan, Ryan 2007)
Attractive driving opportunity	mov_driving	(Carson et al. 2009)

Source: own study.

only focussed on three key tourism resources provided by Kuju National Park. A pre-survey pilot test was conducted on university students and questions back-translated from English into Japanese before the research design finally fixed the motivation set shown in Table 1.

The push- and pull-factor items were measured by the degree of agreement of respondents with statements describing their reasons for visiting Kuju National Park based on a 4-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. Specifically, we asked: 'What are your reasons for visiting Kuju? For each statement below, please circle the number that best describes your reasons for visiting Kuju:' and provided respondents with eleven push-factor statements, for example, 'to refresh the mind and gain inspiration' and 'to share travel experiences after returning home' (Table 1). We also asked 'In your opinion, what makes Kuju attractive? For each statement below, please circle the number that best describes your reasons for visiting Kuju' to examine the visitors' degree of agreement with each pull-factor item.

Statistical analysis

Statistical analysis was conducted through several steps. First, the inter-correlations among variables were tested to examine appropriateness for conducting factor analysis. To determine the suitability of the correlation matrix, Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy were employed (Dziuban, Shirkey 1974). Bartlett's test of sphericity's null hypothesis is that the correlation matrix of the variables does not diverge from the identity matrix, or alternatively speaking, the variables are not correlated. In this study, if the null hypothesis is rejected at a 5% significance level, the correlation matrix of variables is suitable for factor analysis. The KMO index is a measure of how suitable the data is for factor analysis. According to Kaiser, if the index is below 0.6, the data is not adequate, and remedial action is required. Conversely, the 0.6s, 0.7s, 0.8s and 0.9s indexes are considered as mediocre, middling, meritorious and marvellous respectively (Kaiser, Rice 1974).

In the second step, principal-component factor analysis (PCA) with varimax rotation was employed to reduce the number of variables by combining them into one or several components.

Factors with an eigenvalue >1.0 were selected, while variables with factor loadings >0.4 were included (Kim et al. 2003). Eventually, we computed Cronbach's alpha to measure the reliability, or internal consistency of the component, or dimension.

Lastly, Chi-squared, Fisher's exact tests and *t*-test were implemented to examine the statistically significant difference of characteristics between international and domestic visitors. The Chi-squared and Fisher's exact tests were used to identify the difference among categorical data, whereas *t*-tests were used to identify the differences among interval data (McDonald 2009). To deal with missing data, we eliminated the observation missing categorical data (e.g. gender, education, etc.) from the statistical analysis. Simultaneously, the imputation technique was implemented to replace missing interval data (push- and pull-factor motivations) with substituted values. The substituted values of domestic and international observations were estimated by taking the average value of all domestic and international observations respectively. All the analyses were considered to be statistically significant at 5%. Raw data were cleaned and curated in an .xlsx file and then transferred to STATA version 15.1 for statistical analyses.

Results

Descriptive analysis

A total of 137 visitors' responses were collected (71 domestic and 66 international visitors) around the Chojabaru Visitor Center in Autumn 2019. Overall, 54.0% of the respondents were males, and 46.0% were females. The average age of the respondents was around 43 years old. Among 11 push-factor motivations, international visitors were most motivated by the opportunity 'to enjoy the natural scenery' (mean = 3.83) and least motivated by 'doing physical exercise' (mean = 2.74). In contrast, domestic visitors were also most motivated by 'enjoying the natural scenery' (mean = 3.82) and least motivated by 'getting away from everyday life' (mean = 2.60). Figure 3 illustrates the difference in mean scores of eleven push-factor and three pull-factor motivations between domestic and international visitors.

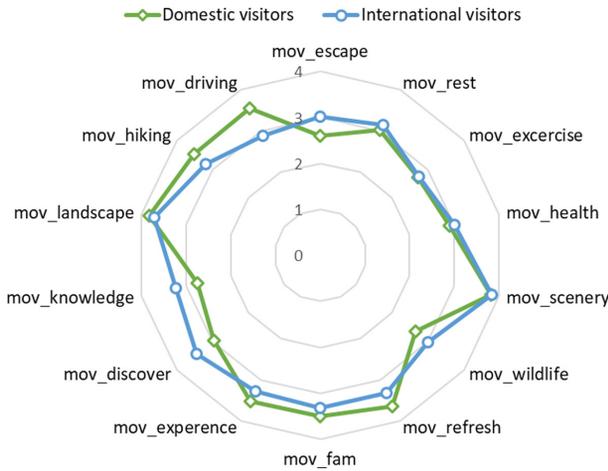


Fig. 3. Mean scores of push- and pull-factor motivations between domestic and international visitors.

Source: own study.

Factor analysis

Before conducting the factor analysis of eleven push-factor items, we employed Bartlett’s test of sphericity and the KMO test to check whether the correlation matrix of those eleven items was appropriate for factor analysis. The null hypothesis of Bartlett’s test, which decrees that the correlation matrix does not diverge significantly from the identity matrix, was rejected with $X^2 = 451.69$ at p -value < 0.001 . For the KMO test, we obtained an index of 0.75, which indicated that the eleven push-factor items in our study obtained intermediate appropriateness for factor analysis (Kaiser, Rice 1974).

The principal-component factor analysis was performed with varimax rotation to examine the underlying dimensions of push-factor motivations. The factor analysis results from eleven push-factor items revealed four dimensions with eigenvalues >1 (Table 2). The four dimensions explain approximately 68.25% of the variance. As factor loadings are higher than 0.50, the sample size of our study, which is more than 100 observations, is appropriate for factor analysis (MacCallum et al. 1999). Moreover, all the factor loadings are >0.5 ; so, the probability of misclassification can be reduced. We then estimated the Cronbach’s alpha score of each dimension for measuring the internal consistency (or reliability) of the given dimension. The Cronbach’s alpha scores of four dimensions were 0.65 or higher, representing acceptable internal consistencies (Taber 2018).

Based on the characteristics of items within the dimension, we labelled the four dimensions as ‘enjoying nature with family or friends’, ‘improving physical health’, ‘discovering and learning’ and ‘escaping’ respectively. The first dimension consists of motivations that are related to the visitors’ interrelationships (e.g. family and friends) and enjoyment of nature, while the second dimension represents the motivations to achieve a healthy condition through physical activity. The third dimension includes motivations to satisfy visitors’ curiosity through discovering and learning. The last dimension encompasses the motivations to escape from regular habits and

Table 2. Principal-component factor analysis of push factors. Source: own study.

Dimension	Factor label	Factor 1	Factor 2	Factor 3	Factor 4
Enjoying nature with family or friends	mov_fam	0.83			
	mov_experience	0.77			
	mov_scenery	0.61			
	mov_refresh	0.51			
Improving physical health	mov_exercise		0.88		
	mov_health		0.84		
Discovering and learning	mov_knowledge			0.89	
	mov_discover			0.81	
	mov_wildlife			0.55	
Escaping	mov_rest				0.84
	mov_escape				0.81
Initial eigenvalue		3.80	1.31	1.24	1.15
Cronbach’s alpha		0.71	0.80	0.71	0.65
Proportion of variance		18.54%	17.50%	17.35%	14.86%

Bartlett’s test of sphericity: $X^2 = 451.69$, p -value < 0.001 .
 Kaiser–Meyer–Olkin Measure of Sampling Adequacy = 0.75.

take a rest. Among the four dimensions, the first factor ('enjoying nature with family or friends') contributes the most to explain 18.54% of the total variance.

Comparison between domestic and international visitors

This section compared the demographic profiles, travel patterns and motivations of domestic and international visitors to Kuju National Park. The visitors' demographic profiles consist of gender, age and the highest level of education completed. The travel patterns included information about the means of transport, whether the trip to Kuju was the first time or a repeat visit, whether they stayed overnight at Kuju, whether they travelled with companions and whether they would return to Kuju next two years. The motivations

for visiting Kuju maintained the four dimensions defined in the previous sub-section (Table 3).

Results showed no significant difference between the gender distribution of domestic (45.1% female and 54.9% male) and international visitors (47.0% female and 53.0% male). However, domestic and international visitors differed significantly in terms of age and highest educational level completed. Domestic visitors were comparatively older ($t = 5.82$, p -value < 0.001), whereas international visitors were more likely to have completed a tertiary education degree ($X^2 = 21.95$, p -value < 0.001).

In travel patterns, international visitors again differed from domestic visitors in repeat travel, the tendency to return and means of transport. Whereas most international respondents were visiting Kuju for the first time, only 15.49% of domestic respondents were not repeaters

Table 3. Chi-squared, Fisher's exact, t -tests of distinctions between domestic and international visitors.

Variables	Levels	Domestic visitor (N = 71)		International visitor (N = 66)		X ² /t-statistic	Fisher's exact
		Frequency	Percentage	Frequency	Percentage		
Gender	Female	32	45.07%	31	46.97%	0.050	0.865
	Male	39	54.93%	35	53.03%		
Education Level	Below university	31	43.66%	11	16.67%	21.946***	0.000***
	University	35	49.30%	33	50.00%		
	Post graduate	4	5.63%	22	33.33%		
First visit	No	50	70.42%	21	31.82%	32.341***	0.000***
	Yes	11	15.49%	45	68.18%		
Overnight stay	No	34	47.89%	30	45.45%	0.131	0.733
	Yes	35	49.30%	35	53.03%		
Companion(s)	No	4	5.63%	9	13.64%	2.550	0.147
	Yes	67	94.37%	57	86.36%		
Wish to return	No	5	7.04%	17	25.76%	8.930**	0.004**
	Yes	65	91.55%	48	72.73%		
Transport	Private car	58	81.69%	27	40.91%	27.253***	0.000***
	Rental car	8	11.27%	32	48.48%		
	Public transport	3	4.23%	7	10.61%		
Age	Mean	50.96		34.85		5.823***	
Enjoying nature with family or friends	Mean	3.62		3.43		2.039*	
Improving physical health	Mean	2.80		2.86		-0.447	
Discovering and learning	Mean	2.78		3.23		-3.633***	
Escaping	Mean	2.80		3.08		-2.065*	
mov_landscape	Mean	3.83		3.71		1.67	
mov_hiking	Mean	3.51		3.19		2.42*	
mov_driving	Mean	3.54		2.88		4.68***	

Note: *, **, and *** are statistically significant at 0.05, 0.01 and 0.001 respectively.

Source: own study.

($X^2 = 32.34$, p -value < 0.001). Also, domestic visitors' self-reported likelihood of returning to Kuju in the next two years was significantly higher ($X^2 = 8.93$, p -value < 0.01). The means of transport was also quite distinct, with a high percentage of domestic visitors travelling by private cars, whereas most international visitors used a rental car or public transport ($X^2 = 27.25$, p -value < 0.001).

To compare the motivation level of four different dimensions between domestic and international visitor segments, we initially calculated the mean scores of each motivation dimension. Eventually, we found that 'enjoying nature with family or friends' was the strongest motivation of both domestic and international visitors, whereas 'discovering and learning' and 'improving physical health' were the least meaningful motivations for domestic and international visitors, respectively. Domestic and international visitors acquired equivalent motivation levels in 'improving physical health'. However, their push-factor motivation was significantly different in the other three dimensions, namely: 'enjoying nature with family or friends' ($t = 2.04$, p -value < 0.05), 'discovering and learning' ($t = -3.63$, p -value < 0.001) and 'escaping' ($t = -2.07$, p -value < 0.05). Escaping from the daily routines (mean = 3.08) and discovering and learning new knowledge (mean = 3.23) greatly motivated international visitors to visit Kuju, but had less effect on motivating domestic visitors (mean = 2.80 and 2.78 respectively). In contrast, domestic visitors (mean = 3.62) were more motivated by enjoying natural scenery and reasons to interact with family or friends than international visitors (mean = 3.43).

The mean scores for pull-factor motivations were higher for domestic visitors who strongly agreed that Kuju provides attractive opportunities for natural landscapes, hiking and driving. By rank, both domestic and international visitors agreed most strongly that natural landscapes (e.g. grassland, forest, etc.) are the 'pull-factor' that makes Kuju National Park attractive (mean = 3.83 and 3.71 respectively). Domestic visitors were equally motivated by the hiking and driving opportunities in Kuju (mean = 3.51 and 3.54 respectively), but international visitors were less motivated by driving opportunities (mean = 2.88) than hiking (mean = 3.19). The

difference in domestic and international visitors' motivation for hiking ($t = 2.42$, p -value < 0.05) and driving opportunities ($t = 4.68$, p -value < 0.001) was statistically significant.

Discussion

Comparing NBT motivations of visitors to Kuju National Park

The research question aimed to identify the NBT push-factor motivation domains of visitors to Kuju National Park. The analysis yielded a four-factor solution with eigenvalues >1 (factor loadings ≥ 0.50 , see Table 2). The four dimensions explain approximately 68.25% of the variance, with Factor 1 ('enjoying nature with family or friends') contributing the most to explain 18.54% of the total variance, followed by Factor 2 ('improving physical health' - 17.50%) and Factor 3 ('discovering and learning' - 17.35%). The simple urge to 'enjoy nature with family or friends' thus appears to be the strongest push factor for both domestic and international visitors to Kuju, exerting a greater drive than more serious goals such as 'discovering and learning' in spite of the study site's location next to the Visitor Centre.

However, despite the homogeneity in Factor 1 between domestic and international visitors, significant differences also emerged based on t -tests of the mean scores of three out of the four motivation dimensions. First, 'enjoying nature with family or friends' ($t = 2.04$, p -value < 0.05), 'discovering and learning' ($t = -3.63$, p -value < 0.001) and 'escaping' ($t = -2.07$, p -value < 0.05). Escaping from the daily routines (mean = 3.08) and discovering and learning new knowledge (mean = 3.23) greatly motivated international visitors to visit Kuju, but had less effect on motivating domestic visitors (mean = 2.80 and 2.78 respectively). In contrast, domestic visitors (mean = 3.62) were more motivated than international visitors by the opportunity to enjoy the natural scenery and tended to justify their trip in terms of interacting with family or friends (mean = 3.43). These findings are consistent with research in other tourism sectors that visitors' cultural backgrounds significantly influence their motivations and characteristics (Kim, Jogaratnam 2003; Mody et al. 2014; Park et al. 2008; Vuong 2021).

It is worth noting that such comparisons of domestic and international segments face certain question marks over validity due to the significant underlying differences in the demographic profiles and trip logistics that prevent 'like-for-like' comparisons. For example, our results showed that domestic visitors were significantly more likely to be 'pulled' to Kuju by opportunities for driving ($t = 4.68$, p -value < 0.001), and hiking ($t = 2.42$, p -value < 0.05). However, these findings also reflect the reality of visitor profiles, since 85% of domestic visitors had been to Kuju before, giving them prior knowledge of destination-specific pull factors (e.g. drives and hikes) for which the area is renowned.

Moreover, the characteristics of domestic visitors in this study are also aligned with those in previous research (Kim 2017; Sukanuma et al. 2011; Romão et al. 2014). The significantly older average age of domestic visitors could foster a preference for less active, more sedentary activities such as driving. Another logistical predictor is the mode of transport, an important variable given Kuju's remote, mountainous location. International visitors were more likely to arrive by public transport or rental cars, neither of which is so conducive to the romantic idea of an autumn drive in a favourite family automobile. In the US, where the national park idea first took root, the National Parks Service has historically prioritised upgrading access infrastructure, since the role of the automobile quickly became central to the parks' success, with sightseers arriving by car before filtering through to the Visitor Centre (Shaffer 2013). The spatial planning at Kuju seems reminiscent of this close link between tourism and the motor car, with loyal domestic visitors driving out to the mountains specifically to take photographs of the turning leaves during the autumn peak season. In contrast, international visitors happened to visit Kuju for the first time, affecting their expectations and thus impacting their motivation.

Despite the potential of developing tourism through promoting driving experience, there remain several drawbacks. Firstly, public transport businesses are hesitant to expand their activities in the area due to the lack of customers and high operational cost, which causes a supply-side conundrum. This problem could compound international visitors' reluctance to visit Kuju. Not

all international visitors are permitted to drive in Japan (e.g. having no driving licence) or have enough confidence and courage to do so. The constraint might explain the finding that international visitors to Aso Kuju National Park had a higher level of 'discovering and learning' and 'escaping' motivations than their domestic counterparts, as survey results reflected the more adventurous, risk-taking types of motivations. Furthermore, the promotion of the driving experience leads to more air pollution (Vuong et al. 2019), which contradicts the aim of ecotourism to reduce environmental impacts (Weaver 2001). Therefore, policymakers should exercise caution in promoting car-driving experiences and improved public transport should play a more prominent role in tourism planning in the national park.

Lessons learned from a comparison of domestic and international NBT segments

This study provides a snapshot of diverse domestic and international NBT needs from the perspective of the segments' respective motivations, demographics and trip profile. Although the survey was focussed on the drivers of demand, the findings have broader implications in revisiting the motivations and definitions of cross-cultural NBT. By choosing a charismatic national park destination that is also readily available for non-specialist sightseers, our definition of NBT followed the place-based example of Weaver (2001: 16) who defined NBT as "any type of tourism that relies on attractions directly related to the natural environment" (Weaver 2001). Although consumptive activities such as fishing and hunting were excluded, we do not limit the 'protected area' venue to strictly undisturbed areas of pristine wilderness (Valentine 1992), nor the travel style to low impact and small-scale trips (Honey 1999).

Viewed holistically, our findings reflect the pragmatic reality of 'soft' ecotourism traits such as "lower personal commitment to environmental activism, appreciating nature as just one facet of a multipurpose trip, and preference for less strenuous activities confined to well-served site-hardened zones" (Weaver 2013). Seen in this light, NBT is not the antithesis of 'mass tourism' nor an idealised 'alternative' such as ecotourism that operates within the confines of aspirational models based on limited volume or small groups

of visitors to wild or semi-wilderness settings where few – if any – visitor services are provided to deliberately minimise environment impacts (Weaver 2001). A better understanding of the visitor motivations could help park managers to make targeted interventions that recognise the current range of push-factors and provide opportunities for casual enjoyment whilst nudging them toward ‘discovery and learning’ activities.

Kuju offers a plethora of such environmental education opportunities. For example, the marshland around the Visitor Centre where the study was conducted is listed as a Ramsar Wetland Site based on its conservation status as secondary nature maintained via regular human interventions, notably the annual controlled burning (*noyaki*) that keeps the forest succession at bay. Also, the surrounding meadows were formerly farmed for pampas grass (*susuki*) whose silver plumes were once used for thatch roofs; so, there is a cultural connection to the autumn landscape that respondents agreed was such an important pull factor. More effective marketing could link the NBT motivation sets more directly to fundamental ecotourism definitions such as “an experience with a focus on the natural and cultural environment” (Black 1996) despite the low scoring Factor 3 ‘discovering and learning’ that seems to currently contravene explicit environmental educational aims.

Another example is trekking, a mountain-based walking activity that conforms to many of the ecotourism ideals incorporating “distance hiking...[and] adventure experiences” (Weaver 2001). Trekking can also be considered an interim sub-sect of mountain climbing, a more extreme form of adventure tourism that is also common in the Kuju area. Climbers were excluded from this study as they traditionally invest significantly more time and money in specialist training that could require membership in a club or association, or an ‘alpine apprenticeship’. Their visit motivations would thus appear quite distinct from our respondents and closer instead to other types of adventure tourism such as white-water rafting, scuba or sky-diving. However, this could be the subject of future research.

This paper presents pragmatic, *in-situ* insights into visitors’ motivations for NBT in a Japanese national park. If mass tourists can be persuaded to venture out of their comfort zones, typified here by the propensity for a drive-through or short

stay in Kuju as part of a day trip to somewhere else, there is ample potential for NBT ecotourism to cross over to the mainstream market. The front country setting of the Visitor Centre can channel more visitors towards photogenic scenic spots or more adventurous activities in backcountry locations that would require a longer and greater commitment from the visitors. The current study is about the *demand-side* aspects of tourism (e.g. visitors’ motivations and characteristics); so, future research on Japanese NBT should complement this view with *supply-side* related findings for better policy planning and implications. To develop NBT in areas with limited investment but high potential, like Aso Kuju National Park, more knowledge and insights regarding entrepreneurship activities and financing methods are required (Fredman, Margaryan 2020; Nguyen et al. 2021).

Finally, our study also acknowledges the following three limitations for transparency (Vuong, 2020). First, the sample size was not overly large in terms of the two individual segments, although the overall sample was sufficient for statistical purposes. In addition, the null hypothesis of Bartlett’s test was rejected, the KMO test confirmed that the PCA was appropriate and Cronbach’s alpha scores of all dimensions were 0.65 or higher, representing acceptable internal consistencies. Second, our survey coverage extended to only one season (i.e. Autumn not Spring, Summer or Winter), resulting in a snapshot of Kuju that may not draw equal motivations from ‘attractive landscape’ throughout the year. Finally, our segment-based analysis uncovered numerous underlying differences in the domestic and international respondents’ demographic and trip profile that could have skewed the results. For example, domestic visitors were comparatively older and less likely to have completed a tertiary education degree, which may have influenced their agreement with Factor 3 (‘discover and learn’). A total of 85% were repeat visitors, an unusually high level of loyalty that hints at a unique set of motivations. It also reveals the extent that the current NBT infrastructure is set up principally to serve domestic visitors with a corresponding lack of attention to the international market. However, in recent years, Kuju has expanded international management and marketing efforts, including multi-lingual signage and SNS messages in English (Fig. S1).

Conclusion

The current study identified the push-factor motivation dimensions of visitors in Aso Kuju National Park and examined the similarities and differences between domestic and international visitors' motivations, demographic and trip profiles. Factor analysis resulted in four motivational dimensions: 1) Enjoying nature with family or friends, 2) Improving physical health, 3) Discovering and learning and 4) Escaping. Findings employing chi-squared, Fisher's exact tests and *t*-test indicated that domestic and international visitors obtained dissimilarities in terms of demographic (education level and age), trip profiles (first-time visit to the national park, willingness to return, and mode of transport), push-factor motivations ('enjoying nature with family or friends', 'discovering and learning' and 'escaping') and pull-factor motivations ('attractive hiking opportunities' and 'attractive driving opportunities'). In contrast, we found no difference regarding gender, staying overnight, companion and motivations ('improving physical health' and 'attractive natural landscape').

These findings reveal that domestic and international visitors hold very different characteristics despite similarities in several aspects. Thus, policymakers and local businesses are recommended to consider international visitors' travelling behaviours and intrinsic motivations while planning and implementing policies or business plans. As this research concentrates on the *demand-side* of the tourism sector (visitors), future research could investigate the *supply-side*, especially entrepreneurs or small-medium-size businesses in the national park, for more integrated planning and understanding.

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Supplementary material



Fig. S1. Signs in Japanese with English headings and grab-sheets (left-centre). Source: photo taken by authors.