

MOTIVATION-BASED CLUSTERING: AN EMPIRICAL STUDY OF VISITORS TO KRUGER NATIONAL PARK IN SOUTH AFRICA

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ABSTRACT

The Kruger National Park (KNP) is a well-known, highly successful, international tourist attraction in South Africa. Competition is, however, increasing and it is important for tourism products such as this park to understand its visitors and their specific needs. This will influence growth and long-term sustainability. Tourists visit parks such as KNP for specific reasons and therefore the aim on this study is to cluster tourists by means of motivation. Quantitative research was conducted by means of two surveys [June 2009 (N = 455) and December 2009 (N= 461)], resulting in 916 questionnaires. Two factor analyses were performed – one on travel motivations and one on park experiences. For travel motivations, a four-cluster solution appeared appropriate and the clusters were labelled Cluster 1: Self-focused Eco-thusiasts; Cluster 2: General Eco-thusiasts; Cluster 3: Social-Eco-thusiasts; and Cluster 4: Super-Eco-thusiasts. For park experiences, five factors were identified and labelled Factor 1: Staff encounters; Factor 2: Park activities; Factor 3: Park services; Factor 4: Maintenance; and Factor 5: Information provided. The results revealed similarities and differences between the clusters.

KEYWORDS

Cluster Analysis, Kruger National Park, Nature-based Products, Market Segmentation.

1. INTRODUCTION AND BACKGROUND TO THE STUDY

The Kruger National Park (KNP) is one of the top tourist destinations in South Africa and as such witnesses over one million tourists visiting the park each year. It is imperative for tourism destinations such as KNP to be informed about and stay focused on specific target markets in order to ensure optimal success and continued growth. Consumer behaviour patterns are becoming more personalised which has an effect on tourism. Heterogeneity is one of the most important characteristics of the tourist market. However, this is problematic for creating an experience. There is therefore a need to divide the market by means of identifiable variables to segment it more adequately. It is important to understand the characteristics and preferences of visitors, which can be done through market segmentation. The latter holds various benefits for tourism products, as it can lead to an increase in tourist numbers and better use and management of scarce resources (Slabbert, 2008). This is especially important for nature-based products which are dependent on scarce resources.

A cluster analysis is a multivariate technique aimed at identifying market segments. This approach to market segmentation offers several advantages to researchers, such as usefulness in determining market niches based on similarities among tourists, classifying tourist groups, generating hypotheses about these tourist groups and testing a concept to determine whether specific types of customers are present in the dataset, and it is possible to analyse a vast number of respondents effectively (Jurowski & Reich, 2000). This technique has been used in the tourism industry to identify marketing clusters that are mutually exclusive and exhaustive (clusters) (Pérez & Nadal, 2005; Hudson & Ritchie, 2002; Malhotra, 2007; Churchill & Iacobucci, 2005; Jurowski & Reich, 2000; McDaniel & Gates, 2007; Zikmund & Babin, 2007; Arimond & Elfessi, 2001). Clusters should therefore have high internal (within-cluster) homogeneity and external (between-cluster) heterogeneity.

Cluster analysis is an established method of market segmentation and generally and academically acknowledged. However, this method has not been applied in the South African tourism context with specific reference to a nature-based product such as Kruger National Park. Only one study was found where clustering was done for a nature-based product. In this study Beh and Bruyere (2007) also used motivation as a clustering base to profile visitors to three Kenyan National Reserves and identified three clusters, namely escapists, learners and spiritualists. Two distinct visitor segments were best identified by motivations of escape, relaxation, and personal and spiritual growth; while the other segment was strongly focused on the educational experience. Similarities and differences were found between the current study and that of Beh and Bruyere (2007). This research will thus greatly contribute towards an understanding of the current market and how the park's appeal could be maximised for the identified target markets. This will assist in the sustainability, growth and success of the Kruger National Park. The purpose of this research was to identify tourist clusters for Kruger National Park based on selected variables.

2. METHODOLOGY

In order to achieve the objectives of the study, quantitative research was conducted by means of two surveys. The surveys were administered for Kruger National Park during June 2009 (N = 455) and December 2009 (N= 461) and included both the winter (July) and summer (December) surveys, resulting in 916 questionnaires. The questionnaire was developed by means of a comprehensive literature review and comprised three sections. Section A focused on demographic details (marital status, age, province of origin) while section B explored spending behaviour (frequency of visits, length of stay and amount spent). This section also analysed the travel motivations based on the work of Crompton (1979) and other studies conducted in National Parks in South Africa. Twenty items were measured in the motivation section for Kruger National Park on a five point Likert-scale. Section C explored general consumer behaviour aspects (visitor experience). Twenty two items were measured in the section on park experiences on a Likert-scale. Fieldworkers requested tourists to complete the questionnaires in their own time and it was based on the willingness of tourists to participate in the study. One respondent per household was requested to complete the survey. The data for the surveys were captured in Microsoft Excel by fieldworkers of North-West University and analysed using the Statistical Programme for Social Sciences (SPSS 17.0).

Factor analyses were done on motivations and park experiences to identify smaller sets of explanatory composite factors that define the fundamental constructs assumed to underlie the original variables. Only those factors with an eigenvalue equal to or higher than 1.0 were considered. A factor loading of 0.30 is considered significant, while a factor loading of 0.50 is considered very significant (Field, 2005). However, variables with factor loading coefficients of 0.40 were considered for travel motivations and

0.20 for park experiences. To ensure quality of measurement, the variables were also subjected to reliability (Cronbach alpha reliability test) and appropriateness (Bartlett's test of sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy) testing.

3. DISCUSSION

The discussion will include the demographic profile of respondents, the factor analysis of the travel motivations and the identification of the clusters.

3.1. DEMOGRAPHIC PROFILE

Visitors to Kruger National Park are mainly Afrikaans speaking (60%), married (81%), without children (54%). These visitors reside mainly in Gauteng (54%) and Mpumalanga (15%), which is the home province of the Kruger National Park. A high percentage of visitors has either a diploma or degree (44%) and have visited National Parks between 3 and 5 times over the past three years.

3.2. FACTOR ANALYSES

Two factor analyses were performed – one on travel motivations and one on park experiences.

FACTOR ANALYSIS OF TRAVEL MOTIVATIONS

A Principal Axis Factor analysis with Oblimin with Kaiser Normalization rotation was undertaken. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.865, which is highly acceptable. The Bartlett test was also found to be significant ($p < .00001$). The 20 items yielded 5 factors with eigenvalues higher than 1.0. These factors explained 62% of the variance and were labelled: Factor 1: Learning, Factor 2: Relaxation, Factor 3: Park attributes, Factor 4: Novelty sharing, Factor 5: Interpersonal motivators. The variables were also subjected to reliability (Cronbach alpha reliability test) to check the internal consistency of items in each dimension and were higher than 0.6, except Factor 5 with a Cronbach Alpha value of 0.55, which is acceptable.

FACTOR ANALYSIS OF PARK EXPERIENCES

A Principal Axis Factor analysis with Oblimin with Kaiser Normalization rotation was undertaken. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.882, which is highly acceptable. The Bartlett test was also found to be significant ($p < .00001$). The 22 items yielded 5 factors with eigenvalues higher than 1.0. These factors explained 58% of the variance and were labelled Factor 1: Staff encounters, Factor 2: Park activities, Factor 3: Park services, Factor 4: Maintenance, Factor 5: Information provided. The variables were also subjected to reliability (Cronbach alpha reliability test) to check the internal consistency of items in each dimension and were higher than 0.65.

3.3. CLUSTER ANALYSIS

A cluster analysis was performed to classify the respondents into mutually exclusive groups on the basis of the Ward method. This hierarchical clustering method is based on minimizing variance. Multivariate statistics indicated that statistically significant differences existed among the four clusters at $p < 0.0001$. The clustering base for this study included travel motivation factors as identified in the previous section. The results of the cluster analysis for Kruger National Park, based on travel motivations, indicate that a four-cluster solution appeared appropriate. These clusters were labelled Cluster 1: Self-focused Eco-enthusiasts, Cluster 2: General Eco-enthusiasts, Cluster 3: Social-Eco-enthusiasts and Cluster 4: Super-Eco-enthusiasts. The results revealed similarities and differences between the clusters.

4. MAIN CONTRIBUTIONS

This study adds information to the body of knowledge regarding the application of clustering by using the Ward method in tourism research. It was found applicable and usable in the context of a national park. It was also found that the KNP currently attracts a much homogenised market, which can be a problem in the long-term and in a very competitive tourism environment. If the KNP does not satisfy the needs of the current market there is currently no substitution market. It is thus clear from this research that the KNP has to consider the development of a potential market which is not currently visiting the park. Travel motivations have proved to be an appropriate clustering base, which has not been done in the South African tourism context before.

5. CONCLUSIONS

The purpose of this study was to identify tourist clusters for Kruger National Park based on travel motivation. This was done by analysing the demographic profile of respondents, performing two factor analyses (on travel motivations and park experiences) and applying Ward's method for clustering data. The results revealed four significant clusters and were labelled *Self-centred Eco-enthusiasts*, *Universal Eco-enthusiasts*, *Social Eco-enthusiasts* and *Super Eco-enthusiasts*. A previous study done by Beh and Bruyere (2007:1467) clustered visitors to three Kenyan National Reserves and identified the following three clusters: escapists, learners and spiritualists. Learners are related to the Super-Eco-enthusiast and escapists to the Universal Eco-enthusiast. Other studies focused on different types of products and therefore direct comparisons are not possible.

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