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Underlying Constructs Measuring Ecotourist's Destination Loyalty to Malaysian Ecotourism Destinations

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Abstract: This study shows the scale dimensionality of antecedents to ecotourism destination loyalty in the context of Malaysia. The unit of analysis was ecotourists who visited these destinations. The data was collected from popular ecotourism destinations in the Peninsular of Malaysia and Sabah. The study managed to acquire a total of 813 samples after the fieldwork ended, giving the study a response rate of 47%. The data was analysed using exploratory factory analysis to explore how many factors there are whether the factors are correlated, the results showed the underlying constructs of ecotourist's destination loyalty in Malaysia. Correlation analysis showed the linkage or level of association of each antecedents to ecotourism destination loyalty except the number of trips.

Key words: Destination loyalty, ecotourism destination, association, antecedents, Malaysia

INTRODUCTION

The study of loyalty in the context of tourism is often associated with destinations. Destination loyalty has been defined as tourist's propensity to choose the same destination for their future visits and their willingness to suggest the destination to others (Oppermann, 2000; Chen and Gursoy, 2001; Yoon and Uysal, 2005). Previous studies reported that destination loyalty is influenced by many factors including satisfaction level of a visit experience (Chi and Qu, 2008; Neal and Gursoy, 2008) perception on a destination's services (Chen and Tsai, 2007; Chi, 2011; Cole and Illum, 2006) perception on destination value (Sun *et al*., 2013), destination image (Castro *et al*., 2007; Chi, 2011; Chen and Tsai, 2007) and travel motivations (Yoon and Uysal, 2005), destination knowledge (Gursoy and McCleary, 2004a, b; Konecnik and Gartner, 2007) information search behaviour (Chen and Gursoy, 2001), level of involvement (Gursoy and Gavcar, 2003) and the previous trips taken to the destination (Gursoy and McCleary, 2004a, b). This study explores the scale dimensionality of antecedents to ecotourist's destination loyalty to Malaysian ecotourism destinations.

As with any tourism attraction, planning and developing an ecotourism destination is only half the battle that destination managers face. To ensure success, they also have to plan and strategize the marketing aspect because a well planned and developed ecotourism product/destination will become useless, if it fails to attract and retain its target market. In today's dynamic and competitive global environment, understanding how consumers form their destination and brand loyalty and the factors that are likely to influence their loyalty is important for the success and survival of any business. Brand loyalty is likely to have significant impact on destination management and marketing strategies and service delivery.

Literature review: Visitors to ecotourism destinations are known as ecotourists. In the 90's there were already >5 million eco-tourists recorded in the world and most of them were from North America, Europe and Australia (Gursoy and Gavcar, 2003). Eco-tourists often have varied demographic characteristic's personal backgrounds, preferences and motivations and can be classified based on motivations and preferences (Ezebilo, 2014), environmental attitudes (Uysal *et al*., 1994), benefit segmentation (Hepworth and Mateus, 1994) and cultural values (Blamey, 1997). Ecotourists tend to be more concerned about safety, security and distressing when they travel (Klanarongran and Walter, 2001). Their different values and lifestyles also may have effect on their demand. For example, most North American

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eco-tourists look for cultural and educational values (Plog, 1974; Hobson and Ko, 1994) whilst Singaporean eco-tourists seek for novelty and business.

As the investment for ecotourism is high, paying attention to the issue of destination's attractiveness to the intended market has equally become more important in order to generate the expected return of investment. In fact, it is no longer sufficient that tourists merely 'like' a destination. Instead, many destination managers are now aiming for tourists to be loyal to their respective destinations. Loyalty, identified as the strong tendency to give preference towards a certain product or service brand on a consistent basis (Hepworth and Mateus, 1994) is the goal of many product and service providers because loyalty can lead to repurchasing of the same brand regardless of any external influences. The underlying goal of studying consumer loyalty is to understand the customer's needs and wants in order to secure repeat purchase of and positive Word of Mouth (WOM) about particular brands and products (Prayag and Ryan, 2012). This is one of the reasons the study of loyalty proliferates in the academia. The recognition that this concept is a major driving force and a significant indicator of marketing success has driven many tourism authors to focus on the subject matter (Yoon and Uysal, 2005). Several studies also suggest that brand loyalty results in reduced customer recruitment costs, customer price sensitivity and servicing costs. Therefore, in the past ten years or so, the concept of loyalty has received an increasing attention from tourism researches (Chi and Qu, 2008; Yoon and Uysal, 2005; Mazanec, 2000; Chi, 2012).

MATERIALS AND METHODS

The survey took place at selected ecotourism sites in Sabah. The state of Sabah can be deemed as an ecotourism destination due to the many vibrant and diverse ecological tourist destinations available in this state. There are six protected national parks, three of which are terrestrial and three marines. The terrestrial parks include Mt. Kinabalu, crocker range and tawau hills while the marine parks are Turtle Island, Tunku Abdul Rahman and Pulau Tiga. All these parks are habitats for a huge biodiversity of species 31. Aside from the protected parks, there are also nature areas in semporna and sandakan that include diving paradise of Mabul island, Mantabuan Island, Sibuan Island as well as Sepilok and Sukau Kinabantangan in Sandakan. For this reason, the sample will be drawn based on the total visitors to Sabah in 2013 which were 3, 230, 645 (32). The population of international ecotourists visiting Sabah during January April of 2013 averaged out to be about 269,220 (32). The estimated target sample required (confidence level: 95%; confidence interval: $+-4^{33}$ was 599. Participants were randomly approached on site and those willing to participate were personally assisted to ensure they understood and able to complete all the survey questions. At the end of the fieldwork duration, 254 completed questionnaires were found useful for the purpose of this analysis, giving the study a response rate of 42%.

To detect scale dimensionality, an Exploratory Factor Analysis (EFA) with a principal component method with varimax rotation was performed using the first sub-sample (from now on referred as sample one). The appropriateness of factor analysis was determined by examining the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartletts test of sphericity. A value of 0.60 or above from the Kaiser-Meyer-Olkin measure of sampling adequacy test indicates that the data are adequate for exploratory factor analysis (Tabachnick and Fidel, 1989). A significant Bartletts test of sphericity will also be required. In order to ensure that each factor identified by EFA has only one dimension and each attribute loaded only on one factor, attributes that had factor loadings of <0.40 and attributes loading on more than one factor with a loading score of equal to or >0.40 on each factor was eliminated from the analysis (Hattie, 1985). After identifying the dimensions, a Cronbach's Alpha reliability test was applied to evaluate the reliability of each measurement scale using the first sub-sample (Zaichkowsky, 1985).

RESULTS AND DISCUSSION

In an exploratory factory analysis, the researcher explores how many factors there are whether the factors are correlated and which observed variables appear to best measure each factor (Schumacker and Lomax, 2004). Exploratory factor analysis refers to a class of procedures that include centriod, principal components and principal axis factor analysis, among many others that differ in the statistical criteria used to derive factors (Kline, 2005).

The results of the tests for determining appropriateness of exploratory factor analysis for each of the construct were carried out. Once we found that the sample one data set was appropriate for exploratory factor analysis, we continued with principal component factor analysis on all items measuring the construct, determined the latent root criterion and extract dimensions for each construct.

The result of the latent root criterion for destination image indicated that 5 dimensions of destination image should be extracted from the 31 items submitted for

Table 1: Factor analysis for destination image

	Factor loading				
Dimension/factor	1	2	3	4	5
Factor 1 (relaxation)					
B1I	0.493				
B1II	0.698				
B1III	0.570				
B1IV	0.754				
B1V	0.726				
Factor 2 (excitement)					
B2I					
B2II		0.796			
B2III		0.533			
B2IV		0.749			
B2V		0.700			
B2VI		0.573			
Factor 3 (pleasure)					
B3I					
B3II			0.738		
B3III			0.446		
B3IV			0.686		
B3V			0.716		
B3VI					
B3VII				0.683	
Factor 4 (socialization)				0.610	
B4I				0.658	
B4II				0.823	
B4III					
B4IV					0.595
B4VI					0.484
Factor 5 (bonding)					0.606
B5I		2.059	1.627	1.347	1.247
B5II		8.578	6.780	5.612	5.196
B5III					
B5IV					
B5V					

Table 2: Factor analysis for information search behaviour

	Factor loading			
Factors	1	2	3	4
Factor 1 (decision information sources)				
E1	0.616			
E2	0.543			
E3	0.645			
E4	0.723			
E5	0.435			
E6	0.703			
E7	0.853			
E8	0.873			
E9	0.744			
E10	0.804			
E11	0.728			
E12	0.679			
E13	0.705			
Factor 2 (information sources)				
C1		0.512		
C2		0.685		
C3		0.744		
C4		0.692		
Factor 3 (familiarity with Malaysia)				
D1			0.745	
D2			0.719	
D3			0.613	
D4			0.769	
Factor 4 (knowledge)				
D5				0.519
D6				0.422
D7				0.526
D8				0.512

Eigenvalues: 11.339, 2.495, 1.752, 1.054; Percentage: 45.354,9.979,7.006,4.215; KMO: 0.948

exploratory factor analysis. The 5 dimensions of destination image extracted explained approximate 51.73% of the variation in the data set and were above 50% (Hair *et al*., 2006).

The value of KMO reported was 0.857, exceeding the recommended value of 0.6 (Kaiser, 1970; Kaiser, 1974). Barlett's test of sphericity (Bartlett, 1954) is significant at p<0.001. Since, the KMO value is reported as 0.857, it is interpreted as in the range of "great" (Hutcheson and Sofroniou, 1999). Only factors with a loading value of 0.40 and above were considered. Seven items were deleted prior to anti-image analysis. Factor loading accepted all 5 factors based on the original items. Table 1 shows the factor loading value for this scale. It ranges from 0.432-0.823.

The result of the latent root criterion for Travel Motivation indicated that 10 dimensions of Travel Motivation should be extracted from the 64 items submitted for exploratory factor analysis. The 10 dimensions of Travel Motivation extracted explained approximate 54.737% of the variation in the data set. The value of KMO reported was 0.881, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974); Barlett's test of sphericity (Barlett, 1954) is significant at p<0.001. Since, the KMO value is reported as 0.887. Only factors with a loading value of 0.40 and above were considered. Two items were deleted prior to anti-image analysis. Factor loading accepted all 10 factors based on the original items. Table 2 shows the factor loading value for this scale. It ranges from 0.402-0.845.

Meanwhile, exploratory factor analysis for Information Search Behaviour indicated the four dimensions were extracted from 25 items. KMO reported was 0.948 (superb) and BTOS was significant at <0.01. The four factors extracted explained 66.56% of the variance. No items were eliminated as the factor loading was ranged from 4.35-8.73.

Next, the result of the latent root criterion for overall satisfaction of services indicated that 8 dimensions of overall satisfaction of Services should be extracted from the 53 items submitted for exploratory factor analysis. The 8 dimensions of overall satisfaction of Services extracted explained approximate 59.197% of the variation in the data set. The value of KMO reported was 0.891, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974); 2) Barlett's test of sphericity (Barlett, 1954) is significant at p<0.001. Since, the KMO value is reported as 0.891. Only factors with a loading value of 0.40 and above were considered. Four items (J13, K2, L4, M1) were deleted prior to anti-image analysis. Factor loading accepted all 8 factors

Table 3: Factor analysis for overall perception of services

	Factor loading		
Factors	1	2	3
Factor 1 (responsiveness)			
N1	0.702		
N2	0.550		
N3	0.680		
N4	0.575		
N5	0.578		
N8	0.719		
Factor 2 (reliability)			
N6		0.584	
N7		0.527	
N9		0.779	
N11		0.571	
Factor 3 (tangible)			
N10			0.709
N12			0.780
N13			0.639

Eigenvalues: 4.185,1.656,1.098; Percentage: 32.189,12.740,8.444; KMO: 0.830; Barlett's test of sphericity: 1414.309; Sig.: 0.000

Table 4: Factor analysis for perceived value

	Factor loading	
Factors	1	2
Factor 1		
O1	0.690	
O2	0.786	
O3	0.516	
O4	0.762	
O5	0.797	
Factor 2		
O6		-0.822
O7		0.682
O8		0.554
O9		0.642
O10		0.592

Eigenvalues: 3.806, 1.478, Percentage: 30.257,14.781; KMO 0.826; Barlett's test of sphericity: 1155.358; Sig.0.000

based on the original items. Table 3 shows the factor loading value for this scale. It ranges from 0.481-0.808.

For overall perception of services the result of the latent root criterion indicated that 3 dimensions of overall perception of services should be extracted from the 13 items submitted for exploratory factor analysis. The 3 dimensions of overall perception of services extracted explained approximate 53.37% of the variation in the data set. The value of KMO reported was 0.830, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974); Barlett's test of sphericity (Barlett, 1954) is significant at $p<0.001$. Since, the KMO value is reported as 0.830. Only factors with a loading value of 0.40 and above were considered. None of the items were deleted prior to anti-image analysis. Factor loading accepted all 3 factors based on the original items. Table 4 shows the factor loading value for this scale. It ranges from 0.527-0.780.

Exploratory factor analysis for perceived value indicated the two dimensions were extracted from 10 items. KMO reported was 0.826 (great) and BTOS was significant at <0.01. The two factors extracted explained 52.84% of the variance. No items were eliminated and the factor loading was ranged from 0.554-0.822. Meanwhile, exploratory factor analysis for Level of Involvement indicated the only one dimension was extracted from 5 items. Result indicated that the KMO reported was 0.772 (fair) and BTOS was significant at <0.01. The factor extracted explained 43.37% of the variance. No items were eliminated and the factor loading was ranged from 0.555-0.764.

Table 5: Factor analysis for perceived value

Factors	Factor loading
Factor 1 (level of involvement)	
R1	0.764
R2	0.638
R3	0.555
R4	0.693
R5	0.735

Eigenvalues: 2.319; Percentage: 46.371; KMO: 0.772; Barlett's test of sphericity: 332.562; Sig.: 0.000

The result of the latent root criterion for loyalty indicated that 5 dimensions of loyalty should be extracted from the 22 items submitted for exploratory factor analysis. The 5 dimensions of loyalty extracted explained approximate 63.55% of the variation in the data set. The value of KMO reported was 0.738, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974); Barlett's test of sphericity (Barlett, 1954) is significant at $p<0.001$. Since, the KMO value is reported as 0.738. Only factors with a loading value of 0.40 and above were considered. Seven items (LOY1, LOY4, LOY5, LOY14, LOY15, LOY21, LOY22) of the items were deleted prior to anti-image analysis. Factor loading accepted all 5 factors based on the original items. Table 5 shows the factor loading value for this scale. It ranges from 0.443-0.904.

In order to identify the factors that have an association with destination loyalty, correlation analysis was conducted where the correlation coefficient illustrates the relationship between the independent and dependent variables. The number representing the pearson correlation is referred to as a correlation coefficient (Hair *et al*., 2006). It ranges from -1.00 to +1.00 with zero representing absolutely no association between the two metric variables. The larger the correlation coefficient, the stronger the linkage or level of association would be. A strong correlation is represented by a coefficient exceeding the value of 0.5 whereas a medium or modest correlation is when the coefficient has a value of between 0.5 and 0.2. Any coefficient possessing a value <0.2 was deemed as showing a weak correlation.

Result of correlation analysis showed that destination loyalty formation was significantly

Table 6: Factor analysis for loyalty

	Factor loading				
Factors	1	2	3	4	5
Factor 1 (leisure)					
LOY6	0.724				
LOY7	0.808				
LOY12	0.904				
Factor 2 (natural)					
LOY3		0.750			
LOY8		0.804			
LOY10		0.890			
Factor 3 (culture)					
LOY11			0.890		
LOY13			0.886		
LOY2			0.770		
LOY16			0.572		
LOY17			0.740		
LOY18			0.693		
Factor 4 (recommendation)					
LOY19				0.690	
LOY20				0.443	
Factor 5 (infrastructure)					
LOY9					0.813

Eigenvalues: 3.611, 2.066, 1.426, 1.241, 1.189; Percentage: 24.071, 13.772, 9.509, 8.274, 7.298; KMO; 0.738; Barlett's test of sphericity: 1700.186; Sig.: 0.000

associated with all factors except for the number of the previous trips. Information source of information was found to have the strongest relationship with the Destination loyalty formation ($r = 0.618$, $p<0.01$) followed by destination knowledge/familiarity ($r = 0.583$, $p<0.01$) and overall satisfaction ($r = 0.533$, $p<0.01$). Other variables exhibit the modest significant correlation with destination loyalty formation as follows: destination image ($r = 0.286$, $p<0.01$), travel motivation ($r = 0.385$, $p<0.01$), overall perception of services ($r = 0.304$, $p<0.01$), perceived value ($r = 0.252$, $p<0.01$) and level of involvement ($r = 0.279$, $p<0.01$) (Table 6).

CONCLUSION

Using exploratory factory analysis, the researchers have managed to explore the underlying constructs of ecotourist's destination loyalty in Malaysia. It helped the researchers determine how many factors there are and whether the factors are correlated. This exercise is fundamental for conducting further analysis on the relationship between each proposed antecedents to ecotourism destination loyalty especially if one intends to conduct complex analysis such as structural equation modelling.

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