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Environmental attitudes, motivation, and attachment: Toward a model of nature-based tourism

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INTRODUCTION

Line and Costen: A model of nature-based tourism

Early tourism research focused on the development of a general model of tourist behavior and emphasized decision-making factors such as attitudes, motivations, and perceptions (cf. Mathieson and Wall, 1982; Mayo and Jarvis, 1981; Middleton, 1988; Moutinho, 1987). Modeling tourist behavior became more complicated as research progressed from the study of general tourism to the study of domain-specific tourism behavior. The shift toward the study of specific tourism products such as film tourism (e.g., Beeton, 2005; Hudson and Ritchie, 2006), cultural and ethnic tourism (e.g., Dann and Seaton, 2001; Prentice, Witt, and Hamer, 1998), sport tourism (e.g., Hinch and Higham, 2004), and natural area tourism (e.g., Hall and Boyd, 2005; Luo and Deng, 2008; Newsome, Moore, and Dowling, 2002), challenged the validity of the more broadly defined traditional models.

As the study of tourism has progressed from the general to the specific, researchers have warned against treating all tourists as members of the same population (Galani-Moutafi, 2000; Nash, 2001), a phenomenon referred to by Pearce (2005) as “the sin of homogenization” (p. 2). In response, tourism scholars have adapted the general tourism frameworks to more appropriately reflect the domain-specific characteristics of tourism’s various categories and subcategories. Within these categories, the study of nature-based tourism (NBT) has become increasingly popular, developing into its own branch of scholarly research and separating itself in important ways from the broader frameworks. NBT is differentiated from more general tourism behavior by the emphasis it places on both sustainability and the viewing of natural scenery (Luo and Deng, 2008; Newsome, Moore, and Dowling, 2002). Heeding the warnings of Galani-Moutafi (2000), Nash (2001), and Pearce (2005), scholars have adapted general tourism constructs such as attitude (Formica and Uysal, 2002; Luo and Deng, 2008), motivation (Luo and

Deng, 2008; Manfredi, Driver, and Tarrant, 1996), and attachment (Hwang, Lee, and Chen, 2005; Warzecha and Lime, 2001) in order to construct a more valid framework for the specific modeling of NBT behavior and thus avoid the sin of homogenization.

The purpose of this research is to explore the relationships between environmental attitudes and place attachment within the context of NBT. We propose a model of NBT whereby environmental attitudes and attachment are mediated by tourists' motivations for pursuing NBT. The relationships between travel motivation and other behavioral constructs are a relatively under-researched area despite the established importance of motivation in understanding travel behavior (Hsu, Cai, and Lee, 2010). Our research seeks to add to this body of knowledge by exploring the mediating effect of motivation in the relationship between tourists' environmental attitudes and their levels of attachment to an NBT destination. The model is developed via an in-depth review of the relevant literature and empirically tested on a sample of visitors to a popular U.S. national park. We conclude with a discussion of the implications of our findings.

LITERATURE REVIEW

Environmental Attitudes

In recent years, the shift in the general consumer paradigm toward "living green" and the alignment of personal consumption habits with environmental values (Mostafa, 2007) has fostered an increase in research relating to the pursuit of nature-based tourism. Building on the findings of Sirgy (1982) that the relationship between a consumer's attitude toward the purchase of a product is affected by the matching of the product's image to that consumer's self-concept, Sirgy and Su (2000) proposed that destination selection is similarly affected by the congruence of destination attributes and self-concepts/attitudes. Concerning the specific study of NBT, Formica and Uysal (2002) similarly noted the possibility that attitudes about the natural

environment could affect destination selection processes, a suggestion also put forth in the work of Fennell (2001).

The most commonly used measure of environmental attitudes in tourism studies is the new environmental paradigm (NEP) (Dunlap, Van Liere, Mertig, and Jones, 2000). The NEP measures three environmental factors, humans over nature, limits to growth, and ecocrisis, that combine to form a composite measure of environmental attitudes. In accordance with current research, we discuss environmental attitudes as operationalized by the NEP. Thus, in this study, an environmental attitude is defined by the extent to which an individual's values are influenced by beliefs regarding 1) mankind's dominion over the natural environment, 2) the planet's ability to sustain a growing population, and 3) the potential for manmade ecological disaster (Dunlap et al., 2000). Defining environmental attitudes in this manner is common in NBT research. For example, numerous researchers (e.g., Formica and Uysal, 2002; Zografos and Allcroft, 2007) have demonstrated the effectiveness of the NEP in conducting tourist segmentation. Similarly, Mehmetoglu (2010) used the NEP to create a typology of natural area tourists based on levels of environmental concern. In this tradition, our research seeks to understand the role of environmental attitude as it relates to the motivational factors specifically associated with NBT.

NBT Motivation

Travel motivation is typically defined as a function of push and pull factors (Dann, 1977) to which tourists react in an effort to satisfy their needs (Pizam, Neumann, and Reichel, 1979). Motivation has been discussed in a variety of roles within the tourism literature. For example, motivation has been demonstrated as a mediator of the relationship between tourists' expectations and their attitudes toward visiting a destination (Hsu et al., 2010), and as a moderator of the relationship between destination image and visit intention (Phillips and Jang,

2007). Additionally, motivation has been extensively used as a segmentation tool of the general market for tourism products (e.g., Chang, Wall, and Chu, 2006; Park and Yoon, 2009).

Despite the growing interest in motivation, research has only recently begun to examine this construct as it relates to the specific factors associated with NBT. By modifying the recreation experience preference (REP) scale (Manfredo et al., 1996), Luo and Deng (2008) developed a scale to measure tourists' motivations to engage in NBT. This research operationalized NBT motivation as the composite of four dimensions: novelty-self development, return to nature, knowledge and fitness, and escape. In this way, NBT motivation is defined as the extent to which tourism behavior is influenced by the activities reflected in these four dimensions. Our research adopts this definition.

The development of the NBT motivation construct is a significant advancement because it provides a vehicle for the explicit measurement of NBT motivation (as opposed to general tourism motivation). Upon validating the NBT motivation construct, Luo and Deng (2008) empirically tested the relationship between environmental attitudes (i.e., the NEP) and NBT motivation among visitors to a Chinese national park. As hypothesized, the results of this study revealed a positive relationship between the two constructs. Unfortunately, this relationship was not significant. The authors noted that, because frequency of visits was positively related to each of the three factors reflective of the NEP, the lack of significance within the NEP-NBT motivation relationship was perhaps attributable to the fact that a majority of participants were first time visitors to the park. Our research seeks to revisit this proposition by sampling visitors to national park that is well known for its repeat visits. Additionally, Luo and Deng (2008) noted that their findings might not be generalizable across cultures. Thus, our research also seeks to better understand the relationship between environmental attitudes and travel motivation as it

relates to tourist behavior in the U.S. and other western countries. This leads to the following hypothesis:

Hypothesis 1: Environmental attitudes are positively related to NBT motivation.

As discussed above, the adaptation of general tourism motivation measurement scales to the more specific domain of NBT allows researchers to more appropriately model the effects of motivation on NBT-specific outcome variables. These relationships, however, have yet to be tested. The present research is designed to address Luo and Deng's (2008) recommendation that "future research...be conducted to examine more complex relationships among environmental values, attitudes, motivations, participation, satisfactions, and environmentally friendly behaviors in the context of NBT..." (p. 400). Specifically, we address the impact of NBT motivation on place attachment.

Place Attachment

Place attachment refers to the affective bond formed between people and specific places (Hidalgo and Hernandez, 2001). The idea of place attachment, also referred to as sense of place (Warzecha and Lime, 2001), was originally used to relate individuals' psychological impressions to geography and the environment (Hwang et al., 2005). Over time, use of the place attachment construct has been adapted for use in recreation and leisure studies, especially within the context of outdoor activities such as rafting (Bricker and Kerstetter, 2000) and hiking (Kyle, Greafe, Manning, and Bacon, 2003). Because it captures personal values and perceptions, place attachment is an important non-economic measurement of the value of natural places (Warzecha and Lime, 2001). As such, place attachment has been an increasing focus in tourism studies over the last decade, having been assessed in studies of natural area tourism both in both western

(Gross and Brown, 2006; Kyle et al., 2003; Warzecha and Lime, 2001) and eastern cultures (Hwang et al., 2005).

Place attachment is typically defined as the composite of two dimensions: place dependence (Stokels and Schumaker, 1981) and place identity (Proshansky, Fabian, and Kaminof, 1983). This conceptualization has been widely adopted in subsequent studies. Proshansky, et al. (1983, p. 60) define place identity as a person's perception of the world as signified by "memories, conceptions, interpretations, ideas, and related feelings about specific physical settings as well as types of settings" (in Warzecha and Lime, 2001). Place dependence (Stokels and Schumaker, 1981) refers to a person's perception of how a specific destination's attributes can facilitate need satisfaction and goal achievement.

Thus, attachment to a natural area represents both an individual's internalized perceptions of the natural area (i.e., identity), as well as the extent to which he or she feels that visiting the natural area will fulfill motivational goals (i.e., dependence). Unfortunately, despite the importance of goal setting within a motivational context and goal achievement in an attachment context, motivation and attachment are rarely considered simultaneously. We propose that because motivations and place attachment reflect goal setting and achievement, respectively, the two should be considered within a relational context. As this pertains to NBT, we posit that the goal-fulfilling component of NBT motivation will affect the level of place attachment to a natural area via its effect on place dependence. This perspective yields the second hypothesis:

Hypothesis 2: NBT motivation is positively related to place attachment.

DATA & METHODS

The data used in this study were collected from a convenience sample of tourists visiting a popular national park in the southeastern U.S. Trained research assistants were positioned at

the trailhead of a popular hiking destination within the park. The collection point was carefully considered prior to data collection to avoid over-representation of any one type of nature-based tourist. The trail was chosen due to its relative popularity within the park, as well as for the dynamic nature of the trail itself. Because the trail's notable points of interest range from within 0.1 to 14 miles, we believe that hikers on this trail accurately represent the park's visitors in terms of the desire to view nature.

Data was gathered over one weekend in October 2010. This weekend was chosen based on historical data indicating it to be one of the park's most highly visited times of the year. All persons over the age of 18 that got out of their cars in the parking lot at the beginning of the selected trail were asked to participate. Potential respondents were asked to complete the questionnaire prior to their hike. Participants were offered a candy bar or granola bar as an incentive for completing the questionnaire. Individuals who declined the initial opportunity to complete the survey were offered a second opportunity to participate upon their return. Free water and park information were also provided to generate interest in completing the questionnaire. A total of 410 responses were collected over the three day period. Forty-nine surveys were deleted from the analysis due to missing or incomplete data, leaving a total of 361 usable surveys.

The survey consisted of 72 questions measuring environmental attitudes, NBT motivation, and place attachment, as well as demographics, and information about each respondent's trip to the area. Environmental attitudes were measured using the 15-item NEP scale (Dunlap et al., 2000). The NBT motivation scale consisted of the 14 items proposed by Luo and Deng (2008). The 9-item scale used by Gross and Brown (2006) was employed as a measure of place attachment. Participants responded to items measuring each construct on 7-point Likert

scales. Demographic information was collected on respondents' sex, marital status, education, age, race, and income. Additionally, respondents were asked to provide information about their current trip including the number of miles they planned to hike that day, the number of miles travelled to the area, and the number of times each year they visit the area. This information is summarized in Table 1.

Table 1: Sample Characteristics

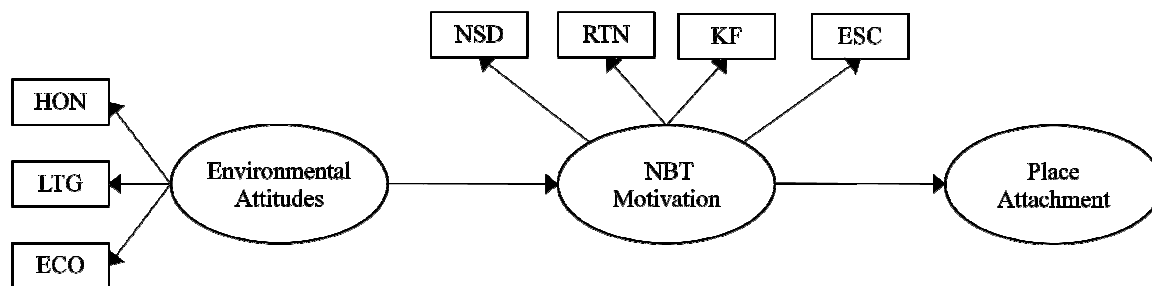
Sample Characteristic	n	%	Sample Characteristic	n	%
Sex			Income		
Male	191	52.9	Under \$30,000	41	11.4
Female	170	47.1	\$30,000 - \$69,999	94	26
Age			\$70,000 - \$109,999	105	29.1
18 - 25	56	15.5	\$110,000 - \$149,999	53	14.7
26 - 35	93	25.8	Over \$150,000	54	15
36 - 45	68	18.8	Distance traveled		
46 - 55	83	23	Under 100 miles	94	26
Over 55	61	16.9	100 - 199 miles	45	12.5
Education			200 - 299 miles	84	23.3
Some/all high school	22	6.1	300 - 399 miles	53	14.7
Some college	64	17.7	Over 400 miles	85	23.6
College graduate	155	42.9	Visits per year		
Post-graduate degree	120	33.3	1 - 2 times	169	46.8
Marital status			3 - 4 times	46	12.7
Single	125	34.6	5 - 6 times	22	6.1
Married	219	60.7	More than 6 times	41	11.4
Divorced	17	4.7	No yearly visits	83	23
Ethnicity			Miles hiked		
Caucasian	315	87.3	Under 1 mile	13	3.6
African American	2	0.6	1 - 1.9 miles	33	9.1
Asian	15	4.2	2 - 4.9 miles	131	36.3
Hispanic	7	1.9	5 - 11 miles	160	44.3
Other	22	6.1	Over 11 miles	24	6.6

ANALYSIS

All analyses were conducted using LISREL 8.0. Figure 1 illustrates the structural relationships between the variables of interest. NBT motivation is modeled to fully mediate the

relationship between environmental attitudes and place attachment. Environmental attitudes are reflected by three dimensions: humans over nature (HON) ($\alpha=.847$), limits to growth (LTG) ($\alpha=.747$), and ecocrisis (ECO) ($\alpha=.800$). NBT motivation is reflected by four dimensions: novelty/self development (NSD) ($\alpha=.731$), return to nature (RTN) ($\alpha=.807$), knowledge and fitness (KF) ($\alpha=.656$), and escape (ESC) ($\alpha=.621$). Place attachment is modeled as a first order factor ($\alpha=.914$). The nine items reflecting place attachment are modeled unidimensionally, but include items typically contained in scales that dimensionalize place attachment by identity and dependence (Gross and Brown, 2006).

Figure 1: Fully mediated structural model



We first evaluated each of the eight first order factors. Due to reliability issues, we deleted one item each from LTG and place attachment. Next, we fit the full measurement model. The results of this analysis ($X^2 = 1213.13$, $df = 532$, $p = .0000$; $RMSEA = .06$; $CFI = .95$; $NFI = .92$) indicate a good fit of the data to the model. For all analyses, parameter estimates were significant at the $p = .05$ level, indicating convergent validity. Additionally, the absence of cross-loading indicated discriminant validity among measurement items.

Upon establishing the measurement model, we fit the data to a structural model to test our hypotheses. Items reflecting the respective dimensions of environmental attitudes and NBT motivation were averaged to create composite variables in order to facilitate a first order structure (Yuan, Bentler, and Kano, 1997). The full mediation model indicated a good fit to the

data ($X^2 = 245.31$, $df = 85$, $p = .0000$; RMSEA = .07; CFI = .97; NFI = .95). A path analysis revealed that environmental attitudes significantly affected NBT motivation ($\beta = .43$, $t = 5.37$, $p < .05$), lending support for Hypothesis 1. Similarly, the analysis of the path between NBT motivation and place attachment ($\beta = .49$, $t = 6.79$, $p < .05$) yielded support for Hypothesis 2. All parameter estimates and their corresponding t -values are reported in Table 2.

Table 2: Standardized solutions and t-values

Construct/ Path	Standardized solution	t-value
HON	0.57	NA
LTG	0.57	8.28*
ECO	0.89	8.05*
NSD	0.57	NA
RTN	0.72	9.27*
KF	0.82	9.52*
ESC	0.56	7.89*
PA ¹	0.75	15.08*
EA-NBTM	0.43	5.37*
NBTM-PA	0.49	6.79*

* $p < .05$, ¹average of 8 items

DISCUSSION

Three important findings from this study warrant discussion. First, the results of the measurement model provide evidence that the eight first order factors are conceptually distinct constructs. Because the items reflected in each factor are theoretically tied to environmental ideas and/or the appreciation of nature, cross-loading among items is a potential concern for scholars interested in operationalizing these constructs for the purposes of NBT research. That the items measuring environmental attitudes, NBT motivation, and place attachment demonstrate both convergent and discriminant validity indicates their utility not only within the context of the present research but also for future models of NBT and other natural area tourism behavior.

Second, the findings in support of Hypothesis 1 are evidence of the role that environmental attitudes play in the formation of travel motivation, supporting the proposition that attitudes (e.g., Sirgy and Su, 2000) and more specifically, environmental attitudes (e.g. Formica and Uysal, 2002; Luo and Deng, 2008), can influence tourism behavior. The positive relationship between the two constructs indicates that as tourists' beliefs concerning the limits of human's dominance over nature, the probability of a pending ecological disaster, and the inability of our planet to support an ever-growing population increases, so does their desire to engage in NBT. Additionally, in support of Luo and Deng's (2008) conceptual framework, our finding that the attitudes-motivation relationship was significant for a sample of frequent park visitors (77% visiting at least 1-2 times per year) validates the suspicion that sampling issues contributed the failure of their data to demonstrate a similar result. Future research could provide additional insight on these divergent findings by exploring the moderating effect of visitation frequency on the relationship between environmental attitudes and motivation.

Third, the findings in support of hypothesis 2 establish the relationship between tourists' motivations to engage in NBT and their attachment to the selected NBT destination. In support of the proposed goal-setting/goal-achievement relationship between the two, our results indicate that, as tourists' motivation to engage in NBT increases, so too does their level of attachment to the selected NBT destination. That is, because motivation and attachment are constructed within the context of goal-setting and goal-achievement, respectively, the former influences the latter in a positive manner. Because the nature of this relationship is still relatively under-researched, however, it remains to be seen what moderating factors may influence motivation's affect on attachment (e.g., a person's affective attitude/image of the destination) and whether this relationship is generalizable outside of the NBT domain. Thus, we suggest that, while

motivations and attachment levels have rarely been considered within a relational context in the past, future research should consider this dynamic as it applies to the increasingly specific categories of tourism pursuit.

Managerial Implications

Several industry implications are derived from the results of the above discussion. Most importantly, our research provides guidance to destination marketing organizations (DMOs) interested in reaping the benefits of a high level of destination attachment. Our findings suggest that DMOs in nature-based tourism destinations can influence tourists with a preexisting motivation to pursue NBT by crafting marketing campaigns that appeal to individuals for whom environmental considerations are relatively more important. Because these individuals are, by definition, more likely to pursue NBT than someone lower in NBT motivation, DMOs should specifically target this group in order to ensure that they are reaching as much of the highly motivated market as is possible. Furthermore, the finding that almost 40% of our sample travelled in excess of 300 miles (and almost 25% over 400 miles) to visit the selected natural area suggests that marketing efforts should not be limited by local or even regional boundaries.

Similarly, private stakeholders with an economic interest in NBT destinations, especially lodging and attraction marketers, should tailor their marketing activities to address the environmentally aware tourist. That is, once this market has been achieved through the efforts of the DMO, private stakeholders should ensure that offerings meet environmental needs. Additionally, the support for the hypothesized relationship between NBT motivation and place attachment suggests that nature-based tourists share a predisposition to become attached to a particular destination. As such, destination stakeholders could capitalize on this relationship by offering frequent visitor discounts and/or other repeat business incentives.

Limitations

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As indicated above, the present research has the potential to benefit both academics and practitioners interested in a better understanding of nature-based tourism behavior. Our research however, is not without limitations. First, our study was conducted in only one nature-based destination. Thus, while our research hypotheses were supported within the context of the sampled destination, additional research is necessary before results can be generalized across NBT destinations. Additionally, in terms of ethnicity, our respondents were overwhelmingly Caucasian. Thus, although a non-normal distribution of ethnicity among a sample of visitors to a U.S. national park is to be expected (NPCA, 2009), our data cannot account for potential variance between ethnic groups. Although such an endeavor is outside the scope of the present research, future study should consider the effects of ethnicity within the proposed model to facilitate a better understanding of the factors that lead to certain ethnic groups being underrepresented in NBT research.

CONCLUSION

Our research proposed and tested a structural model establishing the mediating role of NBT motivation in the environmental attitudes-place attachment relationship. Analysis of data collected from visitors to an NBT destination indicated that nature-based tourists' general feelings about the natural environment influence attachment to an NBT destination via the mediating effect of motivation. Because place attachment is viewed as a non-economic measure of the value of a natural place, it is important to identify the factors that contribute to the creation of this value. Thus, in addition to the theoretical contributions discussed above, our research may also prove useful to practitioners such as NBT destination managers and marketers who wish to better understand the behavior of potential consumers of NBT tourism.

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