Oklahomans and Nature

Identifying Characteristics of Oklahoma State Park Visitors to Construct a Better Understanding of an Individual’s Place Bonding to Natural Resources

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Abstract
Place attachment theory allows researchers to investigate and improve the understanding of why individuals prefer various types of natural areas, while specifically examining the functional and psychological bonds between people and place. Using hierarchical regression, researchers were able to explain which variables may better determine place attachment bond types and strengths of those bonds for Oklahoma state park visitors. The scientific surveys included instruments to elicit information pertaining to place attachment and common demographic variables and used four state parks as regional representation for the state of Oklahoma. Understanding individual's demographic variable differences may aid in enhancing management practices, managing various natural resources for specific or designated uses, and mediating significant differences between management and visitor.

Introduction
Knowledge of public values and beliefs allows natural resource managers and planners to accurately assess public needs and usage of natural areas. Such knowledge will help management agencies address issues related to recreational development and resulting impacts from usage, develop alternatives for addressing the varied issues, and monitoring results from land management practices (Allen, Wickwar, Clark, Dow, Potts, & Snyder, 2009). Understanding of users’ place meaning of natural areas is imperative in the management of areas where recreation takes place on natural resource sites (Schroeder, 1996).

Previous research has found singular effects of individuals’ socio-economic attributes such as age, gender, education, race, and income might impact visitation frequency (Hailu, Boxall, &
McFarlane, 2005) and levels of place attachment (Sayan & Karaguzel, 2010). Other influential factors related to individuals’ attachment to a specific natural environment for recreational purposes such as length of association with a place (Hammitt, Backlund, & Bixler, 2004) and travel distance (Moore & Graefe, 1994) were also addressed in prior studies. This type of information is important as many land management agencies place emphasis on using social science data to aid in management decisions of various natural resources (Williams & Stewart, 1998; Warzech & Lime, 2001). However, research to understand whether one socio-demographic characteristic is relatively stronger than others when measuring outdoor recreationists’ level of place attachment is incomplete. Therefore, the purpose of this research was to identify which socio-demographic characteristics may influence levels of place attachment among Oklahoma’s state parks visitors.

**Literature Review**

Giuliani and Feldman (1993) define place attachment as a positive linkage or connection between a person and a place. Grieder and Garkovich (1994) put forth an idea of the symbolic meanings of settings and how such meaning affects human interactions and that place attachment is a complex and integrated concept containing a multitude of interrelated and inseparable concepts (Low & Altman, 1992). Place attachment is varied in that it relies on the physical dependence of a person on a place and the emotional attachment of a person to a place. It is common that place attachment is divided into sub-dimensions as previous research has confirmed that place attachment has at least two sub-dimensions: place identity and place dependence (Bricker & Kerstetter, 2000). Place identity commonly relates to the personal emotional or symbolic attachment to a place and place dependence may be viewed as the functional aspect of place attachment (Scannell & Gifford, 2010).

In efforts to find which demographic variables might be correlated to place attachment, many studies have included gender as an independent variable that might be of interest. Pretty, Chupuer, and Bramston (2003) found that women were likely to feel as though they were more connected to a place, for social engagement purposes while men were more specific in that they related place attachment to an area through specific activities. In addition, Researchers have found that natural resource visitors with elevated levels of education and experience also display increased environmental concern and pro-environmental behavior (Arnocky & Stroink, 2011). Further, previous research has shown education levels to be related to outdoor recreation and environmental values (Eder & Patzak, 2004), and increases in outdoor recreation participation may promote mental stimulus (Erickson, 2011). Therefore, education levels of natural resource visitors might impact how an individual interacts with the resource, learns from the resource, and alters ethical behaviors while visiting the resource.

Length of association with a place has also been a focal point in previous place attachment research. As might be expected, most research findings support a direct positive relationship between years of association with a place and place attachment (Billig, 2006). Hammitt, Backlund, and Bixler (2004) found that individuals’ attachment to particular natural environment was closely related to the length of the individual chooses to recreate at the place. Hailu, Boxall, and McFarlane (2005) noted that years of association (length of relationship) with a place also supports place attachment.

In response to the shifting United States demographics related to diverse races and cultures, recreation managers of open areas need to understand the needs and preferences of these diverse cultures and offer services that are appropriate for those populations (Bustam, Thapa, & Buta, 2011). Saegert (1989) indicated that minority races tend to have a stronger emotional attachment to place. Brown, Perkins, and Brown (2003) found that respondents from non-white
cultural and racial backgrounds had higher levels of place attachment than did respondents with white cultural or racial backgrounds.

While there is a dearth of research related to distance traveled to a natural resource and the visitors’ relationship with the resource, there are mixed conclusions in similar studies that may aid researchers in moving forward. Macintyre, Macdonald, and Ellaway (2008) found that respondents were unreliable when reporting distances from their residence to public green spaces, but gave insight as to why respondents were not accurate in their estimates. Park visitors might view the park as being further away if they do not typically visit the park, or if they visit parks that are not close in proximity to their residence.

The mixture of results in past research studies, the lack of research investigating how specific demographics may be related to place attachment, and the lack of comparing visitors from various research sites is important to note. The researchers believe such insufficient research demands some thoughtful inquiry and such developed this study.

Methodology

The researchers chose four geographically representative Oklahoma state parks each located in the state’s regional quadrants. A total of 403 park visitors participated in the survey from Sequoyah State Park, Beaver’s Bend State Park, Quartz Mountain Arts Resort and Conference Center, and Boiling Springs State Park. During the on-site survey, researchers approached every other known adult to participate or selected one adult per user group, for a total of 355 surveys considered as complete cases and used in data analysis.

A hierarchical multiple regression was performed to estimate how park visitors’ demographic characteristics impacted their place attachment in the parks. This process was used to investigate which park visitors’ demographic characteristics account for a significant variance on their attachment to the Oklahoma State Parks. The researcher employed a modified version of Williams and Vaske’s (2003) place attachment instrument to measure a visitor’s place attachment. To identify the foundational information related to place attachment and Oklahoma park users, the researchers opted to only utilize place attachment as an entire dimension instead of utilizing potential sub-dimensions of the scale. The only modification of the instrument was to reflect the research site names within the instrument’s statements. Further, the researchers used Dunlap, Van Liere, Mertig, and Jones (200) Environmental Ethics instrument to gauge agreement with specific environmental ethics statements. This instrument did not require revision for use in this study. All items within these tools were measured along a five-point Likert type scale from 1 (strongly disagree) to 5 (strongly agree).

Several demographic characteristics of park users: gender, level of education, race, years since first use, and travel distance, were included in the survey instrument and were used as the first level of independent variables in the regression formula based upon prior studies. Environmental ethics was added into the second level of regression model. This procedure was used to test if the effect of environmental ethics enhances park users’ place attachment to state parks over and beyond their demographic characteristics. Within the independent variables, gender, education, race, travel distance, years since first visit were identified as categorical variables, while environmental ethics (mean score) were considered as continuous variables. In order to incorporate categorical variables into multiple regression analysis, a dummy coding procedure was performed in the data set.

Results

As noted in Table 1, the study sample was composed of 218 males (61.4%) and 137 females (38.6%). A majority of the research participants were white, had a bachelor’s degree or higher (63.4%), and initially visited the state parks between 2 to 10 years ago. In terms of travel distance, 220 people traveled 0 to 100 miles to the park, and 135 people traveled over 100 miles to the

Oklahoma AHPERD Vol 51, Issue 1, December 2013
A multicollinerarity diagnose was performed prior to the hierarchical regression analysis. Results of tolerance (ranged from 0.71 to .97) and VIF (ranged from 1.04 to 1.41) indicate that all the predictor variables were not duplicates and were appropriate for the regression model. Moreover, the Cronbach’s Alpha of environmental ethics and place attachment were .94 and .97 respectively, indicating that survey statements in both instruments showed a dependable internal reliability.

The results of the first regression model showed that the variance accounted for the first five independent variables (gender, education, race, years since first visit, and travel distance) equaled .20 (R²), which is the percentage of variability in place attachment that may be explained by the set of demographics of these park visitors (Table 2). The F change value (14.44, p<.001) referred to a statistically significant increase from zero. Although the combination of park visitors’ demographic characteristics was statistically significant for predicting the visitors’ place attachment, the years since first visit (“2-10 years” & “10+ years”) accounted for most of the variability in the first model. In addition, the standardized beta coefficient of “10+ years” is larger than that of “2-10 years” which indicates that visitors who used the parks 10 or more years were most likely to have higher attachment to the parks than people who had initially visited the parks between 2 to 10 years ago when comparing to the baseline group (less than 2 years).

The park visitors’ environmental ethics scores were entered into the second regression equation and to estimate the possible impact from visitors’ demographic characteristics on their place attachment levels that were controlled by the first step. The results showed that the overall R square is .24, which means that all the independent variables combined were able to explain 24% of variability of park visitors’ attachment to the parks. The R square change in the second model was.04, which was the incremental variance accounted by the environmental ethics over and beyond the contribution of the previous predictors (demographic characteristics). The F change of the second model was 16.30 (p<.001), which refers to a statistically significant increase in the second level by adding environmental ethics for predicting place attachment. In other words, the park visitors’ environmental ethics contributed an “independent” or “incremental” effect to their place attachment.
after controlling impacts from their demographic characteristics.

**Discussion**

A majority (63.4%) of the respondents in this research study held a bachelor’s degree or higher, which is a significant increase when comparing to the Oklahoma State Park Visitor Study by Caneday and Jordan (2003), who found about one-third of respondents held a bachelor’s degree or higher. Caneday and Jordan’s findings are somewhat close to the National Center for Educational Statistics (2012) findings that 22.9% of all Oklahomans held a Bachelor’s degree or higher. In this research study, 38.6% of the respondents were female, a lower number than the 50.5% females found in the general Oklahoma populations (U.S. Census Bureau, 2012). While the number of female respondents is lower than that of the general Oklahoma population, female visitors are typically lower in number when compared to males in state park studies. Similarities between the number of white respondents (83.9%) in this research study compares well with the general Oklahoma population (75.8%).

While most of the park visitor respondents had initially visited the state park more than two years previous, about 28.2% of the respondents had first visited the park less than two years ago. Almost one-third of Oklahoma’s state park visitors are relatively new visitors, without significant relationship length with the park. The percentage of respondents indicating first visitation to the park between two and ten years ago was 52.7% and 19.2% of visitors had initially visited the park more than ten years ago. Also of importance was travel distance to the state park. While the majority (62%) traveled less than 100 miles to visit the park, a decent portion (38%) traveled more than 100 miles to visit the park. While the number of visitors traveling more or less than 100 miles is not even, the difference between the two groups in overall length of travel being smaller than anticipated suggests that Oklahoman’s are not opposed to travel longer distances to enjoy a specific park. Based on the regression models used, travel distance is not a significant predictor for place attachment for visitors to Oklahoma’s state parks.

The findings based on our hierarchical regression analysis also revealed that the length of time associated with a specific park was the only significant demographic variable on predicting park visitor’s place attachment, while other socio-demographic characteristics (gender, education, race, and travel distance) were not statistically significant and relatively not important as predicting a positive linkage between visitors and parks. Our discussion was similar to the early studies in the way that when the park visitors had a longer personal experience associated with the state parks, they were more likely to build a stronger positive attachment to the place. This finding is important for the Oklahoma managerial agencies and personnel to understand that people build their attachment through the years and the consistency of the park services and land management are going to continually attract people visiting these parks through years.

Another interesting finding in the study is that the level of education of Oklahoma park users, having college degree or not, was negatively correlated with their emotional and functional bonds to the park which is different than previous studies (Eder & Patzak, 2004; Erickson, 2011). One possible explanation of this negative correlation is that people with college degree have better access to recreation facilities and resources (Lee, Scott, & Floyd, 2001); therefore, they might have more options and opportunities to other places and finding alternative areas and facilities for similar recreational experiences they can have in the state parks. As a result, the state park visitors with higher educational degree were less likely to bond with the state parks.

Environmental ethics was treated as a second level variable which showed a significant incremental change over the socio-demographics, especially the time factor related to the parks in the first level. This data suggested that while
controlling for the impact of their demographic characteristics on place attachment, the park visitors’ environmental ethics was still useful and meaningful for predicting the level of attachment to the place. Beyond the variation of Oklahoma state park visitors’ social-demographics with their attachment to the parks, the philosophical concern of the environment is still beneficial for creating a positive bond between users and parks.

References


