VISITOR SUPPORT FOR RECREATION FEES IN GEORGIA STATE PARKS

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Abstract
Public land managers are experiencing increasing pressure to create parks that are self-sustaining. Recreation fees can help managers achieve this goal, but tradeoffs associated with fees often produce undesired consequences (i.e., declining visitation) that warrant further investigation. This study used intercept surveys (n = 1049) to examine support for recreation fees among visitors to Georgia state parks. Participants were evenly split regarding their willingness to pay to enter state parks, with a mean willing to pay increase about $2 above the current $5 parking fee. Proposed fee increases negatively affected projected visitation among all groups, particularly low-income visitors. Place attachment ratings were the strongest predictor of support for fees. Results suggest that, to accommodate a diverse clientele, managers could work on strengthening visitors' attachment to and reliance upon state parks while developing flexible pricing schemes that appeal to a range of potential users.

1.0 Introduction and Literature Review

In a time when budget shortfalls jeopardize public park systems across the country, managers are under increasing pressure to find ways to help parks become self-sustaining. Recreation fees represent one potential strategy for helping managers achieve this goal. Although the "pay-to-play" approach to revenue generation provides a valuable source of funding for recreation services on public lands, debates regarding the philosophical implications and feasibility of user fees persist (Chipkin, 2011). Fee advocates argue that avid park users enjoy disproportionate benefits from public areas and should therefore bear a greater share of the costs required to provide and maintain recreational services (White, 1992). Opponents believe that all people should have unimpeded (i.e., free) access to outdoor recreation opportunities (Cockrell & Wellman, 1985; Buckley, 2003).

Concerns about fee-related equity and distributional issues have been legitimized by several studies. For example, an investigation of tourists in the Florida Keys found that Hispanic visitors displayed a significantly more elastic recreation demand function than white visitors (Bowker & Leeworthy, 1998). Because of their elevated price response, the authors expressed concern that Hispanics ultimately could be "priced-out" of the recreation market. Similarly, a national assessment of the general public showed that income and ethnicity were significant predictors of support for fees, with low-income individuals and racial/ethnic minorities typically displaying lower levels of support (Bowker et al., 1999). As income disparities grow and the U.S. population becomes more ethnically diverse, these patterns may become more pronounced. Additional research is therefore needed to identify factors that influence public support for recreation fees and determine prices that optimize revenue without substantially influencing visitation across diverse populations (Crompton, 2010).

As land management agencies turn to fees to offset shrinking general funds (Chipkin, 2011), managers must consider two critical issues: 1) whether people would pay more to engage in essentially the same park-based recreation, and 2) whether increased fees affect park use disproportionately across user groups. Understanding more about these issues could help public land managers meet fiscal goals while addressing potential equity imbalances for their constituents.

2.0 Methods

To address these research issues, we focused on Georgia, a state whose cash-strapped park system continues to face potential cutbacks and closures (Gilbert, 2008). We collected data using intercept surveys of visitors (N = 1049) to three state parks in northern Georgia during the summer of 2010. Parks were located 40-90 miles from downtown Atlanta, ranged in size from 1,776 to 3,712 acres, and shared common facilities and attributes (e.g., lake, beach, hiking trails, picnic areas, campgrounds) with similar fee structures, including a $5 daily per vehicle parking fee. Focal parks were systematically chosen to represent high levels of racial/ethnic diversity among visitors. Although we selected sampling dates based on a stratified random sampling protocol to maximize coverage across temporal and spatial scales, time constraints and travel-related challenges did not allow for complete coverage of all days at every park location. During intercept survey sessions, researchers and trained volunteers approached every adult (age 18 or older) state park visitor at beaches, picnic areas, and campgrounds, and asked if he/she would

be willing to participate in a brief survey about outdoor recreation and park use. Surveys were available in English and Spanish. The overall response rate was 91.5%.

On the survey, we asked respondents to indicate: 1) their willingness to pay (WTP) more than the current $5 daily parking fee to enter parks (dichotomous "yes" or "no" response with option to write in additional amount willing to pay), and 2) visitation response to several hypothetical fee values equal to or greater than the current $5 parking fee (three potential options: visits increase, decrease, or stay the same). Potential predictor variables included socio-demographic information (e.g., gender, age, race/ethnicity, household income), park, distance to park from point of origin, type of park use (day use or overnight), group size, annual pass purchase (yes or no), experience use history (number of years visiting park, number of visits in past year), and place dependence (measured on an aggregate six-item scale where 1 = "strongly disagree" and 5 = "strongly agree"). Place dependence, a component of place attachment identified and operationalized by previous research (e.g., Kyle et al., 2003), provided a reliable and valid measure of the relative importance (i.e., functional meaning) of specific parks within an individual's overall outdoor recreational pursuits (Whiting et al., 2011).

We analyzed data for both outcome variables using logistic regression. In the first analysis, we modeled the likelihood that visitors would agree to pay more to enter a park (as opposed to the response "no, I would not pay more"). In the second analysis, we modeled the likelihood that visitors would maintain (or increase) their future park visits (as opposed to decreasing visits). An absence of multicollinearity among predictor variables in all regression analyses (VIF < 2.0, r < 0.5) was confirmed before models were tested. Estimation samples excluded individuals with missing values for one or more variables (often income, distance to park, or number of annual visits), resulting in the omission of approximately 20% of the overall sample. Difference tests revealed possible exclusion bias: low-income, racial/ethnic minority, day use visitors appeared to be proportionally under-represented in the estimation sample. Nevertheless, sufficient cell sizes allowed us to proceed with the analysis.

3.0 Results

Visitors were almost evenly split regarding their willingness to pay more to enter focal parks: 52.4% of visitors said they would not pay more, 47.6% said they would. The mean amount of extra money (above the current $5 parking fee) visitors were willing to pay to enter the focal parks (assuming a $0 increase for visitors not willing to pay more) was $2.54 ± 0.13. The logistic regression model predicting WTP (Table 1) revealed significant effects for age (WTP increased with age, OR = 1.02), race/ethnicity (African Americans displayed lower WTP than Whites, OR = 0.47), income (lower income individuals displayed lower WTP than highest income category, OR < 0.54), annual pass purchase (visitors without pass reported higher WTP, OR = 1.60), years visiting the park (people visiting longer were less likely to pay more, OR = 0.99), group size (larger groups less likely to pay more, OR = 0.98), and place dependence (higher dependence ratings associated with greater WTP, OR = 1.81).

Table 1

Parameter Estimates in the Binary Logit Model[a] Predicting Georgia State Park Visitors' Willingness to Pay[b] a Higher Entrance Fee, Summer 2010 (n = 847)

Variable	X mean	β (std. error)	Wald	*p*-value	Odds Ratio	95% CI for Odds Ratio
Constant		-1.512 (0.593)				
Gender (female)	0.588	-0.129 (0.152)	0.73	0.393	0.88	(0.65, 1.18)
Age	**38.24**	**0.020 (0.006)**	**9.63**	**0.002**	**1.02**	**(1.01, 1.03)**
Race (Latino)[c]	0.236	0.018 (0.205)	0.01	0.929	1.02	(0.68, 1.52)
Race (African American)[c]	**0.072**	**-0.761 (0.318)**	**5.74**	**0.017**	**0.47**	**(0.25, 0.87)**
Race (Asian/Other)[c]	0.054	-0.373 (0.333)	1.26	0.262	0.69	(0.36, 1.32)
Income (refused)[c]	**0.181**	**-1.202 (0.289)**	**17.36**	**0.000**	**0.30**	**(0.17, 0.53)**
Income (<$25K)[d]	**0.198**	**-1.510 (0.296)**	**26.12**	**0.000**	**0.22**	**(0.12, 0.39)**
Income ($25-50K)[d]	**0.256**	**-1.057 (0.275)**	**14.74**	**0.000**	**0.35**	**(0.20, 0.60)**
Income ($50-75K)[d]	**0.142**	**-0.613 (0.300)**	**4.17**	**0.041**	**0.54**	**(0.30, 0.98)**
Income ($75-100K)[d]	**0.102**	**-0.903 (0.319)**	**8.02**	**0.005**	**0.41**	**(0.22, 0.76)**
Park (FY)[e]	0.348	-0.332 (0.198)	2.83	0.093	0.72	(0.49, 1.06)
Park (RTM)[e]	0.365	-0.056 (0.192)	0.09	0.769	0.95	(0.65, 1.38)
Survey location (day use areas)[f]	0.762	-0.045 (0.198)	0.05	0.821	0.96	(0.65, 1.41)
Annual pass (none)	**0.857**	**0.472 (0.226)**	**4.37**	**0.036**	**1.60**	**(1.03, 2.50)**
Years visiting park	**8.42**	**-0.016 (0.007)**	**5.22**	**0.022**	**0.99**	**(0.97, 1.00)**
Number of visits in past year	4.47	-0.015 (0.010)	2.11	0.146	0.99	(0.97, 1.01)
Number of people per group	**7.03**	**-0.025 (0.012)**	**4.18**	**0.041**	**0.98**	**(0.95, 1.00)**
Distance to park (in miles)	50.59	-0.001 (0.001)	1.55	0.213	1.00	(1.00, 1.01)
Place dependence	**3.33**	**0.595 (0.125)**	**22.59**	**0.000**	**1.81**	**(1.42, 2.32)**

[a] Model Fit Statistics: χ^2(df=19) = 101.45, $p < 0.001$, Hosmer & Lemeshow χ^2(df=8) = 3.25, $p = 0.917$, Model classification accuracy = +12.4%, Nagelkerke $R^2 = 0.15$

[b] Willingness to pay (WTP) coded as 0 = "not WTP more than current $5" and 1 = "WTP more than current $5"

[c] White served as the reference category

[d] High income (>$100K/year) served as the reference category

[e] Fort Mountain (FM) served as the reference category

[f] Overnight use served as the reference category

When visitors were asked to respond to different hypothetical fee values, the percentage of visitors who reported a likely decline visits increased as proposed fees increased: 7.9% at $5, 20.2% at $7, 45.1% at $10, and 56.5% at $15. The logistic regression model predicting visitation response corroborated this pattern, showing that higher fees decreased the likelihood of constant or increasing visitation, OR = 0.76 (Table 2). Significant predictors of visitation response included income (low-income individuals

less likely to maintain visitation than high-income individuals, OR = 0.47), number of visits in past year (more frequent visitors were less likely to maintain than visitation, OR = 0.96,) and place dependence (higher place dependence ratings translated into greater likelihood of constant or increased visitation, OR = 1.39). Expected probabilities of visits declining at different fee values were estimated using model coefficients (Figure 1). The probability of visits declining with no change in price (i.e., attrition under current conditions) for an individual with characteristics at the sample average was approximately 11%, representing the baseline rate. With a $1 increase in fees, the probability of visits declining rose an additional 3%. A $2 fee increase resulted in a 7.0% probability of decline, a $5 fee increase resulted in a 22% probability of decline, and the likelihood of visits declining increased to 64% with a $10 fee hike.

Table 2

Parameter Estimates in the Binary Logit Model[a] Predicting Georgia State Park Users' Visitation Response[b] to Hypothetical Fee Increases in a Typical Year, Summer 2010 (n = 884)

Variable	X mean	β (std. error)	Wald	*p*-value	Odds Ratio	95% CI for Odds Ratio
Constant		1.913 (0.620)				
Gender (female)	0.590	-0.247 (0.173)	2.05	0.152	0.78	(0.57, 1.10)
Age	38.55	0.001 (0.007)	0.03	0.859	1.00	(0.99, 1.02)
Race (Latino)[c]	0.236	0.295 (0.224)	1.74	0.187	1.34	(0.87, 2.08)
Race (African American)[c]	0.071	0.297 (0.342)	0.75	0.386	1.35	(0.69, 2.63)
Race (Asian/Other)[c]	0.053	-0.045 (0.383)	0.01	0.907	0.96	(0.45, 2.03)
Income (refused)[d]	0.187	-0.540 (0.324)	2.79	0.095	0.58	(0.31, 1.10)
Income (<$25K)[d]	**0.191**	**-0.757 (0.326)**	**5.40**	**0.020**	**0.47**	**(0.25, 0.89)**
Income ($25-50K)[d]	0.256	-0.419 (0.311)	1.81	0.178	0.66	(0.36, 1.21)
Income ($50-75K)[d]	0.141	-0.345 (0.341)	1.02	0.312	0.71	(0.36, 1.38)
Income ($75-100K)[d]	0.103	0.120 (0.366)	0.11	0.743	1.13	(0.55, 2.31)
Park (FY)[e]	**0.337**	**-0.445 (0.221)**	**4.04**	**0.044**	**0.64**	**(0.42, 0.99)**
Park (RTM)[e]	0.365	-0.407 (0.217)	3.53	0.060	0.67	(0.44, 1.02)
Survey location (day use areas)[f]	0.758	-0.026 (0.230)	0.01	0.909	0.97	(0.62, 1.53)
Number of visits in past year	**4.40**	**-0.045 (0.013)**	**12.86**	**0.000**	**0.96**	**(0.93, 0.98)**
Number of people per group	6.89	-0.018 (0.012)	2.24	0.134	0.98	(0.96, 1.01)
Distance to park (in miles)	50.44	0.002 (0.001)	2.85	0.091	1.00	(1.00, 1.01)
Place dependence	**3.34**	**0.329 (0.137)**	**5.76**	**0.016**	**1.39**	**(1.06, 1.82)**
Price difference (relative to current $5)[g]	**4.28**	**-0.270 (0.023)**	**141.54**	**0.000**	**0.76**	**(0.73, 0.80)**

[a] Model Fit Statistics: χ^2(df=18) = 211.00, $p < 0.001$, Hosmer & Lemeshow χ^2(df=8) = 14.72, $p = 0.065$, Model classification accuracy = +6.8%, Nagelkerke $R^2 = 0.30$

[b] Visitation response coded as 0 = "decrease in number of state park visits" and 1 = "no decrease in number of state park visits"

[c] White served as the reference category

[d] High income (>$100K/year) served as the reference category

[e] Fort Mountain (FM) served as the reference category

[f] Overnight use served as the reference category

[g] Hypothetical fee values included $5 (current price), $7, $10, and $15

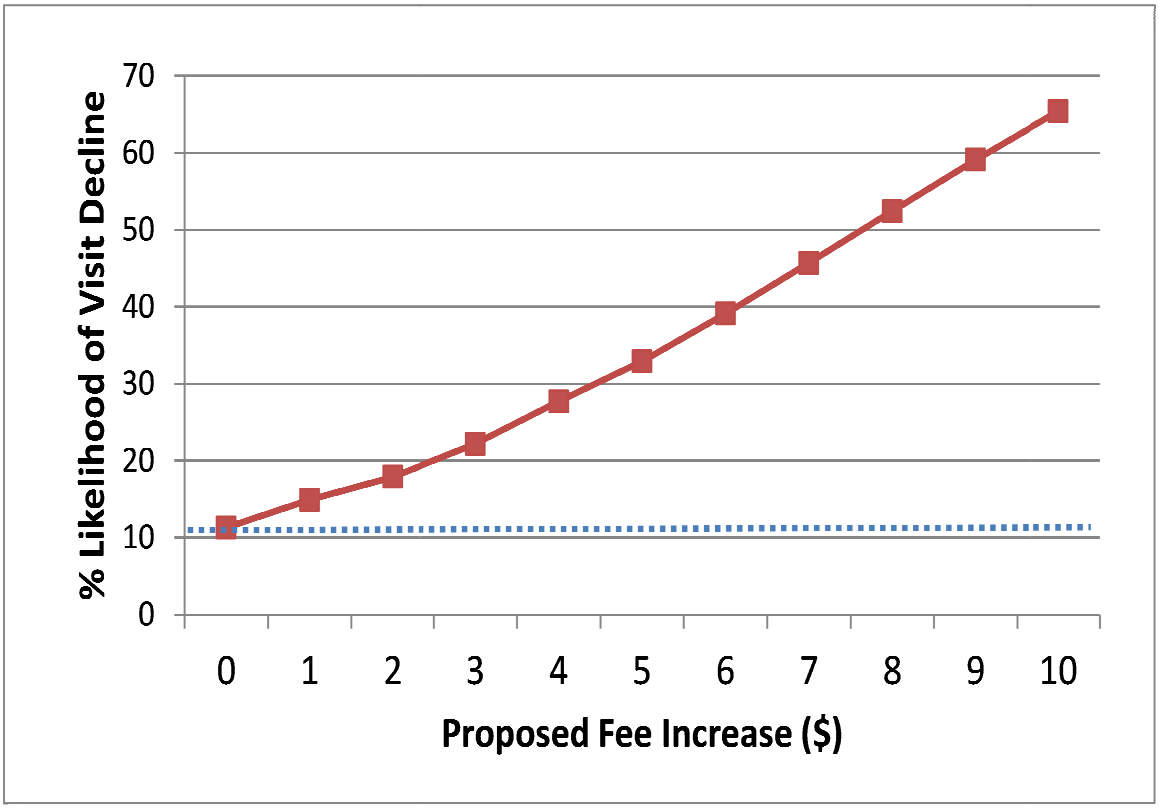

Figure 1. Georgia State Park users' predicted visitation response to hypothetical fee increases based on parameter estimates in binary logit model, summer 2010 (n = 884). *Note*: Estimated probabilities of visits declining at different proposed fee values were calculated for an individual with characteristics at the sample average. The baseline likelihood of visitation decline under current conditions (i.e., x = $0) was 11%.

By selecting appropriate explanatory variable values, response to fee changes can be estimated for various visitor subgroups. For example, there is an 8.6% chance that visits would decline for a low-income, Latino female at Fort Yargo if the entrance fee increased by $2. If the fee increased by $5, the probability of visits declining for the same individual would rise to 26.3%. Similarly, there is a 3.7% chance that visits would decline for a high-income, white male at Fort Mountain if the entrance fee increased by $2. If the fee increased by $5, the probability of visits declining for the same individuals would rise to 13.2%.

4.0 Discussion and Implications

Results revealed mixed support for state park entrance fees. Although a majority of visitors were reluctant to pay more to enter a state park, presumably to receive the same setting attributes a large portion of the population was willing to tolerate a slight increase - typically in the realm of about $2. According to the visitation response model, a fee increase of $2 or less appears to have a minimal effect on overall visitation (resulting in a <10% likelihood of visits declining for each individual). However, data showed that even small increases in state park entrance fees will have a disproportionately large effect on price elastic subgroups such as low-income individuals. Furthermore, historically marginalized groups such as low-income, African American visitors were also less likely to pay more for state park visits. Fee structures and policies which do not account for the differential effects on distinct visitor subgroups could thus have disproportionate effects on some groups and lead to declining representation of those groups in the state park system. Flexible pricing schemes or "free entry" days at non-peak times might be considered as mitigation tools.

The strongest positive predictor of both WTP and constant or increasing visitation was place dependence. Individuals who were more dependent upon a park for outdoor recreation were significantly more likely to support user fees. This pattern was especially evident among Hispanics, a group that reports the highest state park place dependence scores in Georgia (Larson et al., 2012) and generally displayed greater support for fees than other groups in this study. Previous research examining relationships between place attachment and fee attitudes have focused on emotional and symbolic meanings (i.e., place identity) that visitors ascribe to unique resources such as wilderness or scenic areas (e.g., Kyle et al., 2003, Williams et al., 1999). These studies have found positive and negative associations between place identity and support for fees. However, emotional components of place

attachment are less relevant in the state park context, where functional utility appears to drive recreation behavior (Whiting et al., 2011). By highlighting the significant relationship between place dependence and support for state park fees, this study underscores the social and financial advantages of cultivating attachment to and dependence upon state parks for outdoor recreation across diverse populations.

Recreation fees represent a critical management tool in the struggle to support and sustain public parks, and more research is needed to understand the ways in which various fee structures enhance or constrain public land use. The scope of the present investigation should expand to include off-site assessments that evaluate support for fees among individuals who may or may be state park users. Future studies could also estimate specific visitation responses to higher fees (i.e., actual changes in the number of visits) in additional to general patterns (i.e., change in the probability of visiting), providing a level of detail to facilitate comparisons of total revenue gained via fee increase to total revenue lost via visitation decline. Richer & Christensen (1999) examined this tradeoff to identify appropriate day use fee levels in a California wilderness area, and their model could be applied to inform recreation fee policies in different park systems throughout the United States.

5.0 Citations

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