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Who visits U.S. national parks (and who doesn't)? A national study of perceived constraints and vacation preferences across diverse populations

Xiao Xiao[a], KangJae Jerry Lee[b], and Lincoln R. Larson[b]

[a]School of Community Resources and Development, Arizona State University; [b]Department of Parks, Recreation and Tourism Management, North Carolina State University

ABSTRACT

The mission of the U.S. National Park Service (NPS) is increasingly challenged by underrepresentation of visitors from low-income and racial/ethnic minority backgrounds. To better understand attributes of Americans who do and do not visit national parks, we used data from a national general population survey ($N = 4{,}103$) to examine the sociodemographic characteristics, constraints to visitation, and vacation preferences among three groups of NPS visitors (recent visitors, past visitors, and non-visitors). Results revealed significant differences in constraints and preferences among the three groups. Black, Hispanic, and lower-income respondents were least likely to visit NPS sites. Compared to White respondents, they were also less aware of NPS units, more concerned about safety, and more likely to prefer alternative vacations such as sporting events, theme parks, and socially and culturally oriented destinations. Results underscore the need for the NPS to enhance relevancy and diversity by providing attractive and accessible recreation opportunities for historically marginalized groups.

KEYWORDS

National Park Service; race and ethnicity; outdoor recreation; travel

Introduction

The U.S. National Park System (NPS) was founded in 1916 to preserve cultural and natural resources for the education and recreation of the current and future generations. As of 2021, the NPS manages 423 individual sites of cultural, historic, and natural significance. Some of those units (e.g., Grand Canyon National Park [NP], Rocky Mountain NP, Yellowstone NP, Yosemite NP) have become a symbol of national identity and are often described as "the crown jewels of America" or "the best idea America ever had" (Dilsaver, 1994, p. 1). Therefore, visiting NPS units has become a popular American pastime. In 2019, all NPS units attracted approximately 327.5 million visitors (NPS, 2020).

Despite such popularity, there is growing concern about whether the NPS can remain relevant to a changing American society by attracting visitors from diverse backgrounds. Although a majority of Americans will soon be non-White, studies show that people of color are far less likely to visit national parks, resulting in visitor groups who are

CONTACT Xiao Xiao xiao.xiao.7@asu.edu

predominantly White (Floyd, 1999; Gramann, 1996; Krymkowski et al., 2014; Scott & Lee, 2018; Solop et al., 2003; Taylor et al., 2011; Weber & Sultana, 2013). Visitation to national parks has also been historically lower among lower-income individuals, suggesting "elitism" in national park usage (Bultena & Field, 1978, 1980). These visitation trends are alarming to decision-makers within the NPS given that the agency was founded upon a democratic mission to serve the general population. When the NPS was preparing for its centennial celebration in 2016, agency director Jon Jarvis received a congressional letter urging the NPS to become more inclusive and reflective of the diversity of American history and experiences (House Committee for Natural Resources, 2016).

Although the NPS is working diligently to make itself more inclusive and relevant to the American public (NPS, 2016), such an effort will not come to fruition without understanding the characteristics and recreational needs of people who do not or rarely visit NPS units. To date, most studies on NPS visitation have focused on demographic information such as age, education, gender, race, ethnicity, and income to explain visitor characteristics and their perceived constraints to visiting NPS sites (Bultena & Field, 1978; Krymkowski et al., 2014; Rodriquez & Roberts, 2002; Weber & Sultana, 2013; Xiao et al., 2017; Xiao, Aultman-Hall, et al., 2018; Xiao, Manning, et al., 2018). This line of research can be advanced by accounting for different levels of use across all NPS sites (e.g., distinguishing among regular, sporadic, and non-visitors).

While constraints to NPS visitation are multidimensional (Crawford et al., 1991; Scott & Lee, 2018), little research has focused on how varying user groups are affected by different types of constraints. Similarly, to the best of our knowledge, no research has examined the alternative vacation preferences of sporadic visitors and individuals who never visit NPS sites. Addressing these research gaps will generate a more nuanced understanding of visitation patterns and constraints to NPS visitation, and they will help illuminate the types of experiences that people are seeking at non-NPS destinations. Analytical approaches focused on the recreation preferences and behaviors of non-visitors could help the NPS promote diversity and inclusion by more effectively connecting with historically disfranchised groups. The present study used nationally representative data collected from the 2008 Comprehensive Survey of the American Public (CSAP) to gain a more complete understanding of the constraints to visiting NPS sites as well as alternative vacation preferences across the diverse U.S. population.

Literature review

Research on NPS visitation

Visitation patterns at NPS sites have been the subject of substantial research. Although previous studies vary by study site and sample, their findings have generally been consistent, showing that White individuals with high socioeconomic status are far more likely to visit national parks than other groups (Bultena & Field, 1978; Johnson et al., 1998; Lawton & Weaver, 2008; Rodriquez & Roberts, 2002; Weber & Sultana, 2013; Xiao, Aultman-Hall, et al., 2018; Xiao, Manning, et al., 2018). For example, the CSAP data have shown that more than 53% of NPS visitors earned at least a university degree, compared with 34% of non-visitors (Pettebone & Meldrum, 2018). Similarly, people

with high family household income were three times more likely to visit national parks compared to people with lower family household income (Taylor et al., 2011). African Americans and Hispanic Americans collectively constituted only less than 10% of all visitors surveyed in national parks, a much lower proportion than both groups represent in the general population (14% for African Americans and 16% for Hispanic Americans; American Community Survey, 2010), suggesting they were the most marginalized racial and ethnic groups among NPS visitors (Taylor et al., 2011). Furthermore, Black and Hispanic survey respondents are less likely than White respondents to be able to name a national park they had visited (Taylor et al., 2011). These findings demonstrate that class- and race-based disparities in NPS visitation have persisted for decades.

Constraints to visiting NPS units and outdoor recreation areas

Three types of leisure constraints identified in the recreation literature could help to explain these patterns (Jackson, 2005). Intrapersonal constraints are individual psychological states, characteristics, and self-perceptions that limit the participation of leisure activities (Crawford & Godbey, 1987), including lack of skills and interests, stress, and non-kin reference group attitude (Jackson, 1993; Nyaupane & Andereck, 2008). Interpersonal constraints stem from interactions and relationships with other people such as lack of companions, family responsibilities, and harassments and discrimination from other leisure participants. Structural constraints are factors intervening in leisure participation, such as socioeconomic resources, weather, and work schedule. Linking the three types of constraints together, Crawford et al. (1991) proposed a hierarchical model for leisure constraints that has been widely used to explain recreation behavior since the 1990s. Walker and Virden (2005) later adapted this model to describe constraints based on micro-level factors (e.g., individual factors, personal attitudes and beliefs, experience use history), macro-level factors (socioeconomic attributes, e.g., race, ethnicity, gender), and environment characteristics (e.g., weather, accessibility). Stodolska et al. (2020) used a similar framework in their assessment of recreation constraints, highlighting the significance of individual, interpersonal, and contextual factors that interact to affect individuals' decisions to participate in outdoor recreation as well as their evaluation of recreation experience.

Building on constraints theory, researchers have also provided several explanations as to why inequities in the outdoors persist and why people of color are less likely to visit NPS units compared to their White counterparts (Byrne & Wolch, 2009; Floyd, 1999; Floyd & Stodolska, 2014; Gramann, 1996). According to Scott and Lee (2018), many of these theoretical explanations can be summarized based on constraints due to (1) limited socioeconomic resources (marginality) and (2) cultural factors that often stem from various forms of discrimination (ethnicity). The limited socioeconomic resources hypothesis suggests that people of color are more constrained to visit NPS units because of economic marginalization (Washburne, 1978). For example, African Americans and Hispanics tend to earn less income and have higher unemployment rates compared to other racial groups (Massey, 2007; U.S. Bureau of Labor Statistics, 2011). Scholars have noted that many NPS sites are located in remote places so the cost of lodging, transportation, and food for long-distance travels can be significant (Perry et al., 2015;

Stevens et al., 2014; Xiao et al., 2017). Similarly, some researchers argue that entrance and usage fees at both national parks (Schwartz & Lin, 2006) and state parks (Cothran et al., 2020) can discourage visitation among lower-income visitors. It may therefore be particularly challenging for low-income individuals of color to make the financial commitment to visit NPS units (More & Stevens, 2000; Scott, 2013). These financial constraints can be compounded by the fact that a disproportionately large number of people of color are living in urban areas, meaning they typically need to travel a longer distance to visit "crown jewel" NPS units (Weber & Sultana, 2013; Xiao et al., 2018). In addition, lack of knowledge and awareness about NPS units and outdoor recreation areas can be an important constraint to visiting NPS units, especially for low-income groups (Xiao et al., 2018).

The cultural constraints hypothesis suggests that racial and ethnic minorities possess cultural norms and value systems that do not perceive national parks as enjoyable or ideal recreation sites (Washburne, 1978). The negative perception may stem from legacies of individual and institutional discrimination: ethnocide of American Indians in areas now part of NPS sites (Spence, 1999) and disenfranchisement of Black Americans in natural areas (Finney, 2014; Johnson, 1998; Johnson & Bowker, 2004). Since the NPS was established during the Jim Crow era, the agency had "a conscious, but unpublicized policy of discouraging visit[s] by African Americans" and segregated facilities were rarely provided until the 1940s (Young, 2009, p. 652). Studies have also documented that, during contemporary recreation experiences, racial and ethnic minorities routinely experience racial remarks, hostility, and physical attacks from other recreationists as well as indifference, close monitoring, profiling, and excessive scrutiny from park and recreation officials (Floyd & Gramann, 1995; Lee & Scott, 2017; Livengood & Stodolska, 2004; Sharaievska et al., 2014). Because outdoor recreation areas have been socially constructed as White spaces with strict behavioral rules and dress codes that align with White cultural norms (Byrne & Wolch, 2009; Stormann, 1991; Taylor, 2000), people of color may feel unwelcome and even unsafe in these places (Austin, 1998; Johnson, 1998; Johnson & Bowker, 2004; Martin, 2004).

Over time, limited experience with the NPS and the outdoors can be reproduced across generations, preventing people of color from acquiring the necessary skills, knowledge, and cultural disposition for appreciating and enjoying outdoor recreation (Erickson et al., 2009; Lee & Scott, 2016). The lack of cultural relevance could also be reinforced and perpetuated by little to no acknowledgment of the history of racial and ethnic minorities in national parks and outdoor recreation sites (Lockhart, 2006; Taylor, 2000). Furthermore, advertising and social discourse, which routinely depicts a "whitewashed" vision of the outdoors, may inadvertently discourage outdoor recreation participation among racial and ethnic minorities, pushing them toward other leisure pursuits (Martin, 2004).

Vacation preferences among different demographic groups

One key element of intrapersonal constraints to outdoor recreation—personal preferences for different types of vacation destinations—has not been widely explored in the park visitation literature (Whiting et al., 2017). Research on vacation preferences has primarily focused on decision models predicting vacation choices and destinations,

revealing many factors associated with destination preferences such as different interests and lifestyle patterns (Duman et al., 2020), travel distance (Zhang et al., 1999), travel information (Jun & Vogt, 2013), and desirability of family members (Nyman et al., 2018). Very few studies have examined differences in vacation preferences based on sociodemographic factors, though a few exceptions exist. A study that examined tourists in Taiwan found that gender had no significant impact on destination choices (Lin et al., 2014). One nationwide study in the United States found that older adults were more likely to travel to health-related or education-based tourism destinations (Eby & Molnar, 2002). Additionally, a few studies have documented that, compared to White Americans, African Americans tend to travel shorter distances and visit destinations associated with Black heritage (Lee & Scott, 2017; Mandala Research, 2011; Philipp, 1994). However, studies about the differences in choices and preferences of vacation destinations between visitors and non-visitors of NPS units—including those from different sociodemographic backgrounds—have been lacking, resulting in a limited understanding of the recreation choices and destinations that might compete with NPS units.

Research objectives

Despite the wealth of previous studies focused on NPS visitation and constraints, additional work is needed to understand how constraints and vacation preferences vary among different types of visitor groups. Using data from a national general population survey, this study focused on three research objectives:

1. Characterizing sociodemographic variation across three different groups of visitors to NPS sites: recent visitors, past visitors, and non-visitors.
2. Examining how visitor group status and sociodemographic factors influence constraints to NPS site visitation.
3. Examining how visitor group status and sociodemographic factors influence vacation preferences.

Methods

Survey and sampling process

The NPS CSAP was a nationwide survey conducted by the University of Wyoming from 2008 to 2009. The random digital sampling method was used to collect the survey samples from U.S. general population living in all 50 states and the District of Columbia. To reduce the spatial correlations of samples and enhance sampling balance across different regions, about 500 landline survey responses were collected in each of the seven NPS administrative regions. Considering the declining use of household landlines (Blumberg & Luke, 2010) and to reduce potential nonresponse bias, a supplemental sample of cell phone numbers was surveyed, yielding an additional 553 responses for the underrepresented groups in the survey (Black respondents and younger respondents). The survey was conducted in either English or Spanish based on the language preference of the respondents. Overall, the survey collected 4,103 unique responses with a response rate of 12.5% and a completion rate of 91.4%. To ensure the

representativeness of samples, a multiple factor weighting process was applied to the collected data. The CSAP weighted the samples based on the U.S. Census national distribution of demographic variables, such as age, gender, ethnicity, and race (Taylor et al., 2011). Both the cell phone supplemental survey and weighting process mitigated the nonresponse bias and enhanced the representativeness of the survey.

Defining NPS visit status

The CSAP survey asked a series of questions regarding visitation to NPS units, including (1) Have you ever visited an NPS unit during your lifetime? and (2) Have you ever visited an NPS unit within the last two years? To assist respondents in identification of NPS units, the survey provided a list of NPS units. In this study, three types of visitor groups were defined based on multiple criteria. Respondents who answered "yes" to the question of visit within the last two years and successfully identified the name of the NPS unit they visited were defined as *recent visitors*. The definition of recent visitors aligned with the criteria of visitors in both CSAPs in 2001 and 2008 (Solop et al., 2003; Taylor et al., 2011). Respondents who answered "yes" to the question of lifetime visit but "no" to the question of visit within the last two years were defined as *past visitors*. Respondents who answered "no" to the question of lifetime visit were defined as *non-visitors*. Among the 4,103 respondents, 46.5% were recent visitors, 42.3% were past visitors, and 11.2% were non-visitors to NPS sites.

Variables associated with NPS visit status

Three batteries of CSAP questions were included in this study. The first battery of questions were sociodemographic variables including gender (men = 0 and women = 1), age, education (1 = up to 8th grade; 2 = 9th to 11th grade; 3 = high school graduate or GED certificate; 4 = some college, no degree; 5 = degree from technical school or community college; 6 = university degree; 7 = some graduate school; 8 = graduate degree), annual household income (AHI) ranging from 1 = less than $10,000 to 7 = more than $150,000, and race/ethnicity (Hispanic = 1, Black = 2, and White = 3). For race/ethnicity, other racial/ethnic groups or multiracial respondents were excluded from the analysis because of small sample sizes (e.g., less than 3% of the total sample).

The second battery of questions asked about constraints to visiting NPS sites. Respondents rated their agreement with a series of constraint items such as costs, transportation, perceived safety and security, crowding, information, and awareness of NPS units. The survey used a 5-point Likert scale to measure how strongly respondents perceived the above constraints in visiting NPS units, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Respondents who answered 8 (*don't know/not sure*) or 9 (*no answer/refused*) were excluded from the analysis (11.7%).

The third battery of questions asked respondents about their general vacation preferences, including but not limited to national parks. This survey first asked the respondents to report whether they have taken an overnight vacation trip during last two years. The survey also listed 10 types of vacation preferences and/or destinations (e.g., visit friends or relatives, sport events, theme parks, culture-oriented activities, nature-based

activities, historical places, casinos or gaming places, spas or resorts, and cruise ships) and asked respondents to rate their preferences for each type of recreation. These questions used a 4-point Likert-type scale, including 1 (*don't like it at all*), 2 (*like it very little*), 3 (*like it pretty much*), and 4 (*like it a lot*). Respondents who chose 8 (*don't know/not sure*) or 9 (*no answer/refused)* were excluded from the analysis (7.3%). The sample size for the vacation preference models was significantly smaller because the CSAP survey randomly selected 50% of respondents to answer this battery of questions. After deleting the invalid cases, 1,645 cases were included in the analysis.

Data analysis

To compare the demographic attributes of recent visitors, past visitors, and non-visitors, we conducted a series of Chi-square analyses with post hoc tests using Fisher's exact approach for pairwise comparisons (Vaske, 2008). The Holm-Bonferroni correction was used to reduce the Type I error in the post hoc Chi-square tests (Holm, 1979). Analyses of variance were employed to compare the perceived constraints and vacation preferences of the three visitor groups. Duncan's post hoc tests were employed as multiple comparison procedures across the three visitor groups (Rodger & Roberts, 2013).

We conducted binary logistic regression analyses to identify factors associated with the perceived constraints and vacation preferences of diverse respondents. We opted to use binary logistic regression (rather than ordinal regression) because both tests yielded similar results and the odds ratios generated in logistic regression were easier to interpret, yielding more meaningful implications for NPS managers (Larson et al., 2014). Dependent variables (constraints and vacation preferences) were recoded as binary variables. For example, items about constraints to visiting national parks were combined so that 1, 2, and 3 were coded as 0 (*not a constraint*), while 4 and 5 were coded as 1 (*constraint*). Vacation preferences were also combined so that 1 and 2 were coded as 0 (*dislike*) and 3 and 4 were coded as 1 (*like*). Independent variables included sociodemographic variables (age, gender, education, AHI, and race/ethnicity) and NPS visit status (recent visitor, past visitor, and non-visitors). Race/ethnicity was coded with two dummy variables, Hispanic and Black, with White as the reference group (0). We recoded education from a categorical variable to a continuous variable based on the grade of the education (Xiao, Aultman-Hall, et al. 2018). For example, a university degree was coded as grade 16 and a graduate degree was coded as 18. Hence, education values ranged from 8 (*grade 8*) to 18 (*graduate degree*). AHI was also recoded as a continuous variable (in thousand US dollars) using the midpoint of each interval: 10 (*$10,000 or lower*), 17.5 (*$10,001–$25,000*), 37.5 (*$25,001–$50,000*), 62.5 (*$50,001–$75,000*), 87.5 (*$75,001–$100,000*), 125 (*$100,001–$150,000*), and 150 (*$150,000 or higher*). Age was coded as a continuous variable, representing respondents' ages ranging from 18 to 100. Gender was coded as a dummy variable, where 0 represented men and 1 represented women. NPS visit status was coded as two dummy variables, *past visitors* and *non-visitors*, with recent visitors as the reference group. We compared parameter estimates and odds ratios to identify variables associated with each constraint or vacation preference. Wherever possible, we used pairwise exclusion for missing values to maximize use of available information in analyses.

Results

Demographic differences among visitor groups

Sociodemographic characteristics of respondents are described in Table 1. The majority of the respondents were White, accounting for 74% of the total respondents (after weighting); nearly 70% of the respondents were middle-aged, and 43% of the respondents had obtained a bachelor's or higher education degree. About 6% of the respondents reported AHI less than $10,000, and 22% of the respondents reported AHI more than $100,000.

Chi-square tests comparing visitation status among racial/ethnic groups revealed significant differences for recent visitors (Cramer's V = 0.194, $p < .001$), past visitors

Table 1. Chi-square tests comparing weighted frequencies of sociodemographic attributes of recent visitors, past visitors, and non-visitors to U.S. National Park Service units across the United States ($N = 4{,}103$).

Socioeconomic factors[1]	Recent visitor (47%)	Past visitor (42%)	Non-visitor (11%)	Total sample before weighting (%)	Total sample (%)
Race/ethnicity					
Hispanic	32[a]	43[a]	25[a]	8	14
Black	28[a]	48[b]	24[a]	10	12
White	52[b]	42[a]	6[b]	82	74
p value	<.001***	.024*	<.001***		
Cramer's V	0.194	0.044	0.255		
Age, years					
18–24	35[a]	43[a]	23[a]	6	13
25–44	49[b]	40[a]	11[b]	28	36
45–64	53[b]	39[a]	8[b]	45	34
65+	40[a]	50[b]	10[b]	21	17
p value	<.001***	<.001***	<.001***		
Cramer's V	0.126	0.081	0.140		
Education					
High school or lower	28[a]	50[a]	23[a]	24	25
Some college	47[b]	42[b]	11[b]	28	32
Bachelor's degree	54[c]	40[b]	5[c]	27	27
Graduate degree or higher	63[d]	34[c]	3[c]	21	16
p value	<.001***	<.001***	<.001***		
Cramer's V	0.247	0.100	0.236		
Gender					
Male	49[a]	38[a]	12	47	49
Female	44[b]	46[b]	10	53	51
p value	.001***	<.001***	.037		
Cramer's V	0.053	0.075	0.033		
Annual household income					
<$10,000	22[a]	53[a]	26[a]	5	6
$10,000–$25,000	36[b]	41[b]	23[a]	11	12
$25,000–$50,000	42[b]	45[b]	13[b,c]	23	23
$50,000–$75,000	48[c]	43[b]	9[b,c]	21	23
$75,000–$100,000	58[d]	39[b]	3[c,d]	15	14
$100,000–$150,000	63[d,e]	33[c]	4[c,d]	14	13
>$150,000	69[e]	29[c]	2[c,d]	11	9
p value	<.001***	<.001***	<.001***		
Cramer's V	0.246	0.119	0.245		

Cell entries are percentages.

[1]Post hoc Chi-square tests were conducted using Fisher's exact approach for pairwise comparison. The Holm-Bonferroni correction was applied to the post hoc test to reduce the Type I error.

[a,b,c,d,e] indicate statistically significant differences among groups at the $p < .05$ level.

*** and * indicate statistically significant differences among groups at the $p < .001$ and $p < .05$ levels using the Holm-Bonferroni correction in the post hoc tests.

(Cramer's $V = 0.044$, $p = .0424$), and non-visitors (Cramer's $V = 0.255$, $p < .001$). White respondents (52%) were nearly twice as likely to be recent visitors as were non-White respondents, whereas Hispanic (25%) and Black respondents (24%) were about four times as likely as White respondents to be non-visitors. Distribution by race/ethnicity in the past visitor group was similar; about 40% to 50% of individuals within each racial/ethnic group had visited NPS units during their lifetimes, but not within the last two years.

Respondents with higher education levels were significantly more likely to be recent visitors (Cramer's $V = 0.247$, $p < .001$), with 54% of respondents with a bachelor's degree and 63% with a graduate degree or higher having visited an NPS unit during the last two years. Respondents with lower education levels were significantly more likely to be non-visitors (Cramer's $V = 0.236$, $p < .001$); for example, 23% of respondents with a high school degree or lower were non-visitors, whereas only 3% of respondents with graduate degrees or higher were non-visitors. Aligned with education trends, respondents with higher AHI were significantly more likely to be recent visitors (Cramer's $V = 0.246$, $p < .001$). For instance, 69% of respondents with more than $150,000 AHI had visited an NPS unit within the last two years compared to just 22% with AHI less than $10,000. The percentage of respondents in the non-visitor category decreased substantially as income increased, with 26% of respondents in the less than $10,000 AHI as non-visitors compared to only 2% of respondents in the more than $150,000 AHI category.

We also observed differences based on age and gender. Adults aged 45 to 64 and 25 to 44 were more likely to be recent visitors (Cramer's $V = 0.126$, $p < .001$), while adults aged 65 and older were most likely to be past visitors (Cramer's $V = 0.081$, $p < .001$). Younger populations (aged 18–24) were most likely to be in the non-visitor group (Cramer's $V = 0.140$, $p < .001$). Gender differences were less pronounced, though men were slightly more likely than women to be recent visitors (Cramer's $V = 0.053$, $p = .001$).

Constraints to NPS site visitation

Perceived constraints to visiting NPS sites varied greatly among the different visitor status groups (Table 2). Recent visitors were least likely to agree with all 13 statements about constraints to visit NPS units, whereas non-visitors were most likely to agree. Non-visitors reported significantly higher agreement with the constraint of "I just don't know that much about the NPS unit" than recent visitors and past visitors, $F(2) = 316.397$, $p < .001$. Non-visitors also showed a significantly higher level of agreement with "the hotel and food costs at NPS units are too high" than recent visitors and past visitors, $F(2) = 37.323$, $p < .001$. The constraint "It takes too long to get to any NPS units" was rated as the third most important constraint for non-visitors, $F(2) = 81.957$, $p < .001$.

Results from logistic regression models revealed similar links between visitor groups and constraints (Table 3), with R^2 values ranging from 0.050 to 0.174. Compared to recent visitors, past visitors were 3.37 ($p < .001$), 2.71 ($p = .008$), and 2.09 ($p < .001$) times as likely to mention "NPS units are not safe places to visit," "I just don't know

Table 2. Analyses of variance comparing constraints to visiting U.S. National Park Service units among recent visitors, past visitors, and non-visitors ($N = 3{,}625$).

Constraints[1]	Recent visitor	Past visitor	Non-visitor	*p* value	*F* value	*df*	Eta
I just don't know that much about National Park System units.	2.40[a]	3.21[b]	4.10[c]	<.001	316.397	2	0.136
The hotel and food costs at National Park System units are too high.	2.81[a]	3.15[b]	3.39[c]	<.001	37.323	2	0.148
It takes too long to get to any National Park System units from my home.	2.46[a]	2.96[b]	3.32[c]	<.001	81.957	2	0.198
Entrance fees are too high at National Park System units.	2.12[a]	2.41[b]	2.99[c]	<.001	2.93	2	0.191
Reservations at National Park System units have to be made too far in advance.	2.69[a]	2.73[a]	2.91[b]	.044	3.131	2	0.043
It is difficult to find a parking space within National Park System units.	2.22[a]	2.33[a]	2.80[b]	<.001	26.512	2	0.119
There isn't enough information available about what to do once inside a National Park System unit.	1.89[a]	2.29[b]	2.76[c]	<.001	22.863	2	0.200
National Park System units are too crowded.	2.41[a]	2.45[a]	2.72[b]	<.001	8.318	2	0.066
National Park System units are not accessible to persons with physical disabilities.	2.01[a]	2.10[a]	2.38[b]	<.001	14.909	2	0.093
I prefer to spend my free time doing electronic activities, like watching videos …	1.66[a]	1.97[b]	2.37[c]	<.001	67.752	2	0.179
National Park Service employees give poor service to visitors.	1.41[a]	2.61[b]	2.01[c]	<.001	67.164	2	0.185
National Park System units are not safe places to visit.	1.31[a]	1.59[a]	1.97[c]	<.001	101.749	2	0.222
National Park System units are unpleasant places for me to be.	1.21[a]	1.47[b]	1.84[c]	<.001	35.848	2	0.217

Cell entries are based on a 1–5 scale, where 1 is *strongly disagree* and 5 is *strongly agree*; cell entries for visitor groups are mean values.
[1]Constraints are ranked from high to low by the means of non-visitors.
[a,b,c]indicate statistically significant differences between groups at the $p < .05$ level for that item.

that much about NPS units," and "NPS units are unpleasant places for me to be," respectively. Similarly, compared to recent visitors, non-visitors were 8.58 ($p < .001$) times as likely to cite lack of knowledge and 3.92 ($p < .001$) times as likely to cite safety concerns. Both past visitors and non-visitors were more likely than recent visitors to list a preference for "spending free time doing electronic activities" as a constraint.

In terms of sociodemographic predictors, Hispanic respondents were 6.25 ($p < .001$) and 3.9 times ($p < .001$) as likely as White respondents to cite "NPS units are not safe places to visit" and "NPS units are unpleasant places for me to be," respectively. Two other salient constraints for Hispanics were "There isn't enough information available about what to do once inside an NPS unit" (odds ratio [OR] = 2.75, $p < .001$) and "National Park Service employees give poor service to visitors" (OR = 2.51, $p < .001$). Similarly, Black respondents were 3.48 ($p < .001$) and 3.34 ($p < .001$) times as likely as White respondents to cite poor service from NPS employees and safety concerns as constraints, respectively. Black respondents were also more likely than White respondents to mention "spending free time doing electronic activities" as a constraint (OR = 2.00, $p < .001$), "NPS units are unpleasant places" (OR = 1.99, $p = .003$), and "there isn't enough information available about what to do once inside a NPS unit" (OR = 1.99, $p < .001$) as constraints. Men were 2.22 ($p < .001$) and 2.15 ($p < .001$) times as likely as women to report "spending free time doing electronic activities" and "NPS employees

give poor service to visitors" as constraints, respectively. Women were more likely than men to mention that "the hotel and food costs at NPS units are too high" (OR = 1.197, $p = .007$) as a constraint. A one-unit increase in education and AHI variables was also associated with lower odds of agreeing with several statements of constraints, yet the magnitude of their effect was relatively small (Table 3). For example, a one-unit decrease in AHI increased the odds of citing high travel costs at NPS sites as a potential barrier by only 0.4%.

Vacation preferences

The three visitor groups showed significant differences in their rate of overnight vacation trips: 93% of recent NPS visitors had taken a vacation trip away from home for the past two years, compared to 76% of past visitors and 60% of non-visitors, $F(2) = 100.92$, $p < .001$. Except for "a trip to experience art, music, or other cultural activities," the three groups reported significantly different preferences (Table 4). The most notable differences were that, compared to recent and past NPS visitors, non-visitors were more likely to prefer a trip to visit friends or relatives, $F(2) = 3.532$, $p = .029$; out-of-town sporting events, $F(2) = 15.629$, $p < .001$; theme parks, $F(2) = 9.716$, $p < .001$; casinos or other gaming places, $F(2) = 16.976$, $p < .001$; spas or resorts, $F(2) = 12.826$, $p < .001$; and cruise ships, $F(2) = 10.567$, $p < .001$. However, recent visitors expressed a significantly stronger preference than non-visitors and past visitors for trips to experience nature, $F(2) = 45.735$, $p < .001$, and see historical places or exhibits, $F(2) = 18.297$, $p < .001$.

Similar patterns were also observed in the results of logistic regression models exploring factors associated with vacation preferences (Table 5), with R^2 values ranging from 0.050 to 0.139. Compared to past visitors, recent visitors were 1.99 ($p = .007$), 1.87 ($p = .003$), and 1.48 ($p = .004$) times as likely to prefer historic places or exhibits, out-of-town trips to experience nature, and trips to experience art, music, or other cultural activities, respectively. Recent visitors were 3.46 ($p < .001$) and 2.22 ($p = .003$) times as likely as non-visitors to prefer out-of-town trips to experience nature and historical places or exhibits, respectively.

Race/ethnicity was identified as a significant correlate of multiple vacation preferences. For example, Hispanic respondents were more likely than White respondents to prefer art, music, or other cultural activities (OR = 2.07, $p = .004$), theme parks (OR = 1.97, $p < .001$), sporting events (OR = 1.94, $p < .001$), and spas or resorts (OR = 1.93, $p < .001$). Black respondents were more likely than White respondents to prefer sporting events (OR = 3.81, $p < .001$), art, music, or other cultural activities (OR = 3.11, $p < .001$), and spas or resorts (OR = 2.87, $p < .001$). Black respondents also preferred out-of-town trips to visit friends or relatives more than Whites (OR = 2.27, $p = .003$). Notably, White respondents were 4.06 ($p < .001$) times as likely as Black respondents to prefer out-of-town trips to experience nature.

Men were 1.67 ($p < .001$) times as likely as women to prefer sporting events, yet women were more likely to prefer art, music, or other cultural activities (OR = 2.04, $p < .001$), spas or resorts (OR = 1.92, $p < .001$), and trips to visit friends and relatives (OR = 1.86, $p < .001$). A one-unit increase in education slightly increased the odds of

Table 3. Odds ratios in logistic regression models highlighting variables associated with constraints to visiting U.S. National Park Service units ($N = 3,625$).

Constraints[1]	The hotel and food costs at National Park System units are too high	I just don't know that much about National Park System units	Entrance fees are too high at National Park System units	There isn't enough information available about what to do once inside a National Park System unit	I prefer to spend my free time doing electronic activities, like watching videos	National Park System units are not safe places to visit	National Park Service employees give poor service to visitors	National Park System units are unpleasant places for me to be
Percentage[2]	40.2	39.7	20.2	17.7	13.0	5.1	5.2	4.4
Predictors[3,4]								
Past visitor[5]	1.168	2.712**	0.958	1.545***	1.449***	3.372***	1.364	2.094***
Non-visitors[5]	0.915	8.579***	1.082	1.388	1.497*	3.922***	0.964	1.566
Hispanic[6]	1.84***	1.146***	1.775***	2.753***	0.722*	6.249***	2.508***	3.902***
Black[6]	1.779***	2.286***	1.238	1.985***	1.999***	3.341***	3.475***	1.985**
Age	1.004	1.003	0.997	0.998	0.975***	1.02***	1.002	1.007
Gender[7]	1.197**	1.157	1.015	0.989	0.451***	0.773	0.566***	0.746
Education	0.92***	0.975	0.918***	0.945*	0.936***	0.879***	0.85***	0.822***
Annual household income	0.996***	0.997***	0.997**	1.002	0.996***	0.999	0.998	1.000
Constant	1.589	0.489***	1.130	0.383*	4.769***	0.053***	0.793	0.361
R^2	0.073	0.174	0.050	0.052	0.103	0.118	0.070	0.108

[1]The constraints were coded as the following steps for the binary logistic regression: 1, 2, and 3 were coded as 0 (not a constraint), while 4 and 5 were coded as 1 (constraint).
[2]Cell entries are the percentage of respondents who rated the items as constraints in the model. Constraints are ranked by the percentage.
[3]Cell entries are the odds ratio of each predictor in the binary logistic model.
[4]Asterisks indicate *significant at 0.05, **significant at 0.01, and ***significant at 0.001.
[5]Recent visitor serves as the reference group for past visitors and non-visitors.
[6]White respondents serve as the reference group for Hispanic and Black respondents.
[7]Male respondents serve as the reference group for female respondents.

Table 4. Analyses of variance comparing desirability of vacation destinations among recent, past, and non-visitors to U.S. National Park Service units across the United States ($N = 1{,}656$).[1]

Desirability for vacation destinations[2,3]	Recent visitor	Past visitor	Non-visitor	*p* value	*F* value	*df*	Eta
An out-of-town trip to visit friends or relatives.	3.45[a]	3.42 [a]	3.60[b]	.029	3.532	2	0.064
A trip to experience art, music, or other cultural activities.	3.08	3.01	3.16	.140	1.969	2	0.048
A trip to see historical places or exhibits.	3.37[a]	3.14[b]	3.11[b]	<.001	18.297	2	0.144
A trip to a spa or resort.	2.64[a]	2.81[b]	3.08[c]	<.001	12.826	2	0.123
An out-of-town trip to experience nature.	3.51[a]	3.18[b]	2.98[c]	<.001	45.735	2	0.134
A trip to a theme park, such as Disney or Six Flags.	2.62[a]	2.80[b]	2.97[c]	<.001	9.716	2	0.106
A trip to an out-of-town sporting event.	2.47[a]	2.45[a]	2.96 [b]	<.001	15.629	2	0.134
A trip on a cruise ship.	2.48[a]	2.71[b]	2.85[b]	<.001	10.567	2	0.112
A trip to a casino or other gaming place.	1.85[a]	2.03[b]	2.35[c]	<.001	16.976	2	0.140

[1]The survey randomly selected half of the respondents to answer this battery of questions for vacation preferences, yielding 1,656 valid response samples.
[2]Cell entries are based on a 1–4 scale, where 1 represents *don't like it at all*, 2 represents *like it very little*, 3 represents *like it pretty much*, and 4 represents *like it a lot*. Cell entries for visitor groups are mean values.
[3]The vacation destinations were ranked from high to low by the means of non-visitors.
[a,b,c]indicate statistically significant differences among groups at the $p < .05$ level based on post hoc comparisons using Duncan's post hoc tests.

preferring art, music, or other cultural activities (OR = 1.14, $p < .001$) and trips to experience nature (OR = 1.09, $p = .008$), yet slightly decreased the odds of preferring theme parks (OR = 0.929, $p = .006$) and casinos or other gambling places (OR = 0.954, $p = .007$). Similarly, a one-unit increase in AHI slightly decreased the odds of preferring art, music, or other cultural activities, out-of-town trips to experience nature, and cruise ships, while it also slightly increased the odds of preferring spas or resorts (Table 5). A one-unit increase in age decreased the odds of preferring theme parks (OR = 0.974, $p < .001$), art, music, or other cultural activities (OR = 0.987, $p = .008$), trips to experience nature (OR = 0.985, $p < .001$), spas or resorts (OR = 0.970, $p < .001$), and cruise ships (OR = 0.986, $p < .001$).

Discussion

Unlike previous studies documenting demographic differences among current park users, this study used a national survey of randomly selected U.S. households to focus specifically on two groups who have not received much attention in the literature: non-visitors and past visitors to NPS sites. Our findings showed that Black, Hispanic, and lower-income respondents were most likely to be non-visitors, and relatively few members of each group (<33%) reported visits to NPS sites in the past two years. Lack of knowledge about NPS units was the most salient constraint among non-visitors, as they were nearly nine times as likely to perceive this constraint compared to recent visitors. Non-visitors were also four times as likely as recent visitors to perceive NPS units as unsafe places to visit. Vacation preferences also differed significantly across groups, with non-visitors reporting stronger affinity for other types of recreation experiences outside of park settings.

Supporting previous research (Byrne et al., 2009; Floyd, 1999; Solop et al., 2003; Taylor et al., 2011; Weber & Sultana, 2013; Xiao et al., 2017; Xiao, Aultman-Hall, et al., 2018), our study showed that race/ethnicity, education, and income were significantly associated with constraints to NPS visitation. Compared to their White counterparts, Hispanic and Black respondents reported higher levels of nearly every type of

Table 5. Odds ratios in logistic regression models highlighting variables associated with vacation preferences ($N = 1{,}656$).

Vacation destinations[1,2]	Out-of-town trip to visit friends or relatives	See historical places or exhibits	Out-of-town trip to experience nature	Experience art, music, or other cultural activities	Spa or resort	Theme park, such as Disney or Six Flags	Cruise ship	Out-of-town sporting event	Casino or other gaming place
Percentage[3]	88.0	84.8	84.7	72.9	54.1	50.8	47.2	45.5	28.1
Predictors[4,5]									
Past visitor[6]	0.725	0.502***	0.535***	0.677**	1.252	1.13	1.663	0.866	1.163
Non-visitors[6]	0.954	0.451**	0.289***	0.852	1.339	0.966	1.367	1.305	1.682**
Hispanic[7]	0.754	1.204	1.554	2.072**	1.931***	1.966***	0.694*	1.943***	1.554**
Black[7]	2.27**	0.967	0.246***	3.106***	2.869***	1.82**	2.113***	3.812***	1.249
Education	1.036	1.028	1.094**	1.14***	1.002	0.929***	0.984	0.963	0.954**
Age (in years)	1.007	0.999	0.985***	0.987**	0.970***	0.974***	0.986***	1.000	0.998
Gender[8]	1.855***	1.649***	1.076	2.035***	1.92***	1.145	1.103	0.6***	0.889
Annual household income	1	0.999	0.996*	0.997*	1.003*	0.998	0.995***	1.000	0.999
Constant	1.545	2.636	6.345***	0.316**	1.445	11.406***	3.201**	3.327*	1.019
R^2	0.057	0.050	0.106	0.096	0.139	0.111	0.077	0.058	0.072

[1]The survey randomly selected half of the respondents to answer this battery of questions for vacation preferences, yielding 1,656 valid response samples.
[2]Vacation destination variables were coded as the following process for binary logistic regression: 1 and 2 were coded as 0 (dislike), and 3 and 4 were coded as 1 (like).
[3]Cell entries are the percentage of respondents who rated the items as constraints in the model. Perceived constraints are ranked by the percentage.
[4]Cell entries are the odds ratio of each predictor in the binary logistic model.
[5]Asterisks indicate *significant at 0.05, **significant at 0.01, *significant at 0.001.
[6]Recent visitor serves as the reference group for past visitors and non-visitors.
[7]White respondents serve as the reference group for Hispanic and Black respondents.
[8]Male respondents serve as the reference group for women respondents.

constraint. For example, many Hispanic and Black respondents did not enjoy visiting NPS sites, frequently citing lack of knowledge and awareness, safety concerns, and poor service from NPS employees as reasons for not visiting. These results support other studies showing that lack of awareness (Xiao, Manning, et al., 2018) and fear and discomfort (Johnson & Bowker, 2004), in particular, represent prominent barriers to outdoor recreation for people of color.

This study also supports research investigating the compounding impact of multiple constraints on NPS visitation. For example, our descriptive analysis showed that 31% of low-income (less than $10,000 AHI) Black respondents were non-visitors, while 0% of high-income (more than $150,000 AHI) Black respondents were non-visitors. Similarly, 36% of low-income Hispanic respondents were non-visitors, while 10% of high-income Hispanic respondents were non-visitors. These findings echo the notion of multiple hierarchy stratification perspective, which originates from the field of gerontology to explain how the combination of multiple advantaged (or disadvantaged) statuses facilitates (or curtails) people's access to various social resources (Markides et al., 1990). Leisure researchers have shown that the probability of experiencing constraints to outdoor recreation (Lee et al., 2001; Shores et al., 2007), fishing (Lee et al., 2016), wildlife watching (Lee & Scott, 2011), and park visitation (Powers et al., 2020) greatly intensifies when individuals hold multiple intersecting and marginalized statuses.

This study also contributes to the literature by documenting the vacation preferences of different groups and illuminating how and why other recreation destinations might compete with NPS sites for visitors. Individuals who do not currently visit NPS units were less likely to take out-of-town vacation trips and were more likely to choose non-NPS vacation destinations. While recent visitors' vacation preferences were strongly associated with natural resources, non-visitors' and past visitors' vacation preferences seem to be driven heavily by cultural themes and social relationships. These results highlight the importance of considering unique visitor segments, a common practice in tourism research (Beh & Bruyere, 2007; Dolnicar, 2002), in the context of park use. For example, while the NPS continues to enhance the nature-based and history-centered recreation opportunities that appeal to current visitors and align with the NPS mission, the agency might also contemplate how to attract non-visitors who display different, more socially oriented vacation preferences. Because NPS units are inherently natural, historical, or cultural landscapes, bridging the gaps to accommodate these diverse activity preferences—or effectively communicating similar activities that already exist—can be challenging. The NPS might consider more cultivated experiences that would appeal to population segments who enjoy the more programmed educational structure of resorts or cruise ships (Stone & Petrick, 2013). However, such a compromise might be unpalatable considering the agency's mission (Pitas, 2020). To strike a balance between the seemingly contradicting preferences of these diverse visitor segments, the NPS could conduct further market segmentation analysis to better understand the travel motivations and needs of non-visitors and examine how the agency can accommodate them via different types of programming (Lee et al., 2020).

Results from logistic regression models illustrated strong relationships between sociodemographic variables and vacation preferences. Compared to White respondents, Hispanic and Black respondents preferred sporting events, theme parks, spas/resorts,

casinos, and cruise ships more than trips to experience natural and historical places or exhibits. Black respondents were also more likely to favor visiting friends or relatives. These results are consistent with previous studies showing that African American travelers tend to visit places where family or friends live and use established accommodations (Mandala Research, 2011; Philipp, 1994). On one hand, these findings may be linked to the marginality and ethnicity hypotheses since racial and ethnic minorities have disproportionately lower income levels and may embrace different preferences and affective meanings regarding outdoor recreation (Stodolska & Shinew, 2014; Virden & Walker, 1999; Whiting et al., 2017). On the other hand, these patterns might be an artifact of racial discrimination and fear. Some of the most notable constraints reported by Hispanic and Black respondents in our study were safety concerns, poor service from NPS employees, and the perception that NPS units were unpleasant places to be. Indeed, researchers have argued that Black travelers' preferences for developed infrastructure and indoor facilities can be conceived as their coping strategies against potential mistreatment and harassment based on race (Lee & Scott, 2017).

Findings from this study affirm that, to enhance diversity and inclusion within America's national parks (and other NPS units), the NPS needs to work hard to address socioeconomic and cultural barriers faced by racial and ethnic minorities. To this end, it is essential for the NPS to prioritize engagement with diverse populations as demographic shifts progress. Without targeted interventions that cultivate deep and long-term relationships with constituents, the agency cannot fulfill its mission of making NPS units accessible and enjoyable for all segments of the American public (Manning et al., 2016; Schultz et al., 2019; Solop et al., 2003; Stanfield McCown, 2011; Taylor et al., 2011). Our results highlight the value of marketing initiatives and advertising programs that are creatively designed and implemented to appeal to non-visitors and historically marginalized groups. Since the CSAP survey was conducted in 2008, programs such as the Urban Agenda have created new opportunities for racial and ethnic minority groups in parks (NPS, 2016). These efforts should continue to evolve and adapt to the changing American population. In addition, the NPS should strive to acknowledge and address the historical and cultural forces that have created color barriers in outdoor recreation, both intentionally and unwittingly (see Cosgrove, 1995; Meeker, 1984; Mowatt, 2020). Breaking those barriers is a daunting task, but the NPS must be up for the challenge if the agency hopes to maintain the value and relevancy of national parks across all segments of the rapidly diversifying American public.

Limitations and future research

Future research could address several limitations of this study. First, the CSAP was conducted in 2008 and might not reflect the latest trends in NPS visitation among the U.S. population. Recent NPS initiatives and programs designed to enhance the diversity of visitors (e.g., Urban Agenda) might have led to changes in park use patterns. Yet, it is also possible that events since such as the economic recession, political polarization, and the COVID-19 pandemic have disproportionately impacted low-income minority populations and their park visitation (Pirtle, 2020). Future longitudinal research could help answer these questions whenever the newest CSAP is conducted.

Second, in our sample, about 5% of respondents reported having visited an NPS unit within the last two years but could not identify the name of the NPS units they visited. Due to recall issues, we did not categorize this group of respondents as "recent visitors." Criteria used to define NPS visitors have varied in past studies (Solop et al., 2003; Taylor et al., 2011), and the self-reported visits might not accurately represent visitation. The inclusion of objective and subjective indicators that account for visitation frequency and intensity would enhance future studies focused on visitor diversity in national parks. Additionally, in the logistic regression models predicting constraints to visiting NPS units, our decision to code the neutral response of "neither agree nor disagree" as "not a constraint" might have skewed some of the results.

Third, the racial/ethnic groups analyzed in this study primarily focused on Hispanic, Black, and White respondents. Other racial/ethnic groups and multiracial/ethnic groups were not included due to limited sample sizes (<3% of total respondents). Future studies that extend to broader racial/ethnic groups (e.g., Asian Americans, Native Americans, multiracial Americans) would shed more light on the relevancy of NPS across diverse populations. Similarly, more explicit consideration of intersectionality and interactions among historically marginalized demographic groups (e.g., Hispanic and low-income respondents, African American women) is needed. Further investigation of disparities in NPS visitation using the multiple hierarchy stratification perspective could yield novel insights that inform park marketing and management to enhance both relevancy and diversity across the national park system.

Finally, with respect to vacation preferences, the CSAP nature experience questions asked about out-of-town trips. Future research should also consider the value of "nearby" (or close-to-home) nature recreation destinations (Cox et al., 2017). These local recreation sites may be critically important to many low-income and/or racial and ethnic minority populations in the context of the COVID-19 pandemic, particularly those living in urban settings, with limited access to NPS sites and COVID-19 pandemic related travel restrictions.

Conclusions

This study revealed that NPS units are not visited frequently by a large percentage of the American public. Moreover, non-visitors tend to be people of color with low income and education levels. These non-visitors were less aware of NPS units and more likely to feel unsafe and unwelcome in parks. Instead, they preferred trips to visit friends and relatives or other socially and culturally oriented recreation destinations such as sporting events, theme parks, casinos, spas or resorts, and cruise ships. NPS managers should continue to address these challenges by implementing innovative marketing and planning solutions that make NPS units more accessible and attractive to people from all backgrounds, not just the wealthy White populations who have flocked to parks for decades. Hence, results underscore the importance of NPS efforts to enhance relevancy, diversity, and inclusion. Future research that examines the efficacy of specific interventions and policy changes designed to promote equity in parks will ultimately help to ensure that the NPS can successfully achieve its democratic mission and reflect America's true multicultural identity.

ORCID

Xiao Xiao http://orcid.org/0000-0001-5124-0985
KangJae Jerry Lee http://orcid.org/0000-0002-5327-3235
Lincoln R. Larson http://orcid.org/0000-0001-9591-1269

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