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Item Type	event;event
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Download date	2025-05-19 18:09:17
Link to Item	https://hdl.handle.net/20.500.14394/37343

An Examination of the Overlapping Constraints for Maine Residents Participating in Outdoor Recreation Activities and Visiting Maine's State Parks

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1.0 Introduction

Developing an understanding of the constraints encountered by the non-users of public recreation areas is an essential issue to examine in order to address their barriers to participation. Recreational constraints have been widely studied and research on this topic is best suited for examining specific activities and areas. According to Hultsman (1995), leisure-related constraints are not mitigated by a single constraint but can be driven by a variety of variables acting together. A hierarchical leisure constraints model, originally developed by Crawford and Godbey (1987), provides a valuable framework for understanding the constraints that an individual must overcome before being able to participate in a given recreational pursuit. These levels of constraint are described as intrapersonal, interpersonal, and structural (Crawford & Godbey, 1987). Intrapersonal constraints affect individuals as “individual psychological states and attributes that interact with leisure preferences” (Nyaupane, Morais, & Graefe, 2002). Interpersonal constraints limit participation in activities if an individual requires companions for an activity. Structural constraints limit individuals through issues such as lack of financial resources, lack of time, and family status (Nyaupane, Morais, & Graefe, 2002).

For this study, a sample of residents from the State of Maine were asked about how a variety of intrapersonal, interpersonal, and structural constraints for recreating affect their ability to pursue outdoor recreation. Residents who had not previously visited a Maine State Park were then asked to identify the constraints that had limited their ability to visit a Maine State Park. Since a number of the constraints for recreating in general and visiting Maine State Parks ‘overlapped’, it was possible to test whether or not there were relationships between the same constraint variables.

1.1 Maine’s State Parks

Maine’s State Parks are managed by the Maine Bureau of Parks and Lands which is under the authority of the Maine Department of Agriculture, Conservation, and Forestry. Within this system, there are a total of 34 state parks that offer a diverse range of recreational opportunities across forest, lake, mountain, river, and coastal landscapes. Baxter State Park—Maine’s largest (209,644 acres) and most well-known state park—is managed as a completely separate entity from the Maine Bureau of Parks and Lands and was not considered among the state parks that are referred to throughout this study. Maine’s State Parks are among the most popular settings for outdoor recreation in the state and received approximately 2.25 million day use visitors in 2013 (Reiling & Cheng, 2013). While Maine State Parks vary considerably in size, the majority of sites are less than 500 acres and the largest is 7,489 acres (Chan, Padelford, & Papademetriou, 2010). Access to Maine State Parks is convenient for most Maine residents with 80% of the state’s population living within 15 miles of at least one Maine State Park (Chan et al, 2010). It appears that the combination of desirable visitor opportunities and geographic convenience have made visiting these areas relatively easy and inviting for most Maine residents.

2.0 Methods

The data that were generated for this study were collected as a part of the 2014 Maine Outdoor Recreation Survey which had been developed and implemented through a partnership between the Maine Bureau of Parks and Lands and the University of Maine. The primary goal of the study was to assess outdoor recreation trends in the state including levels of participation in outdoor activities, preferences for outdoor settings, frequency of participation, and the trends in public use of Maine’s State Parks. An online-based survey was used to administer the study to a segment of Maine residents. A tailored-design survey method was utilized (Dillman, Smyth, Christian, 2009) to motivate participation through creating a careful and appealing questionnaire design and sending up to four invitations to participate. The sample of individuals who were contacted to participate in this study had previously paid some type of recreation-related fee directly to the State of Maine including fishing and hunting licenses, ATV/snowmobile registration, and online camping reservations. While the mix of individuals who participated in this study included residents and non-residents, only the full-time residents of the State of Maine were used for the analysis described in this study. Altogether, the survey was delivered to a total of 147,564 individuals.

Two questions on this survey specifically asked respondents about their constraints to participation. The first question asked all participants “Rate to what extent each of the following factors has limited your pursuit of outdoor recreation activities over the past two years” and listed 13 different constraint variable options. This question utilized a 5-point response scale ranging from “not at all” to “A very large extent”. A second question appeared only for participants who had indicated they had *not* visited a Maine State Park ever before. These individuals were asked to “Indicate any of the following reasons you have not visited a Maine State Park” and listed 10 different constraint variables. For this question, respondents were asked to simply check yes or no depending on which of the constraint variables applied to them. In order to conduct the statistical analysis for these questions, it was necessary to reconfigure the response scales so that the results could be comparable. For the first question, the 5-point scale that was originally used was collapsed to differentiate between respondents who were affected by a given constraint to a “large” or “very large” extent or not. This adjustment made it possible to compare this set of constraints to the constraints experienced by Maine State Park non-users. A McNemar Chi-Square statistical technique was used to test if the constraints that

Maine State Park non-users experience for recreating in general pose a further level of constraint for the same individuals visiting Maine's State Parks.

3.0 Results

This study generated a total of 9,043 useable responses from Maine residents. Since the contacts that were used to conduct this survey were not differentiated between Maine residents and non-residents, it is not possible to determine an exact response rate specifically for Maine residents. The total sample while including the non-resident respondents achieved a 15% response rate. When asked about their experiences at Maine State Parks, 95.59% of Maine residents had visited a Maine State Park at least once before (n=8644) while 4.41% had never visited one before (n=399). This shows that, overall, Maine State Parks are highly popular and it is highly uncommon for a Maine resident to have never visited one of these sites.

For Maine State Park users, the majority of participants were between the ages of 35 and 68 (80.5%), were predominantly male (63.1%), had an annual household income of \$80,000/year or greater (44.8%), were "well educated" having attended at least some college or obtained a four-year degree (67.4%), and were full time employed (71.3%). The demographic characteristics for Maine State Park non-users, although similar in many respects, varied in a number of ways. The majority of non-users were also between the ages of 35 and 68 (76.4%), were mainly male (69.5%), were most likely to have an annual household income between \$40,000 and \$80,000 (43.2%), were less likely to be well educated than the state park users (61.9%) with a substantial segment of the non-users having a low-level of education (26.5%). The non-users were less likely to be full time employed (62.3%) and somewhat likely to be retired (22.0%). The demographic characteristics of both users and non-users was likely driven by the characteristics previously described about their known participation in hunting, fishing, ATV riding, and snowmobiling. It was found, however, that the demographic characteristics of state park users were not substantially different than the total sample.

A descriptive analysis of Maine State Park users and non-users general outdoor recreation constraints found that, overall, intrapersonal and interpersonal constraints did not negatively affect a substantial portion of these individuals or vary notably between these groups. Barriers such as lack of skills, lack of knowledge about outdoor recreation activities, and physical difficulty affected a very low number of individuals. In terms of structural constraints, however, there were more factors that limited individuals from participating in outdoor recreation in general and, in some cases, there was a noteworthy difference between users and non-users of Maine State Parks. The primary constraints that affected both groups were financial cost, being too busy, and not having time off from work/school. These results revealed that being too busy was the barrier most likely encountered by both of the groups and state park users were *more* likely to be affected by this than non-users.

Table 1. The Proportion of Maine Residents who Experience General Recreational Constraints to a 'Large' or 'Very Large' Extent.

Recreational Barriers	Maine State Parks Users (%)	Maine State Parks Non-Users (%)
Interpersonal Constraints		
Lack of Skills	2.0	2.7
Lack of Knowledge	2.9	2.7
Lack of Interest	1.9	2.7
Physical Difficulty	4.4	8.4
Interpersonal Constraints		
Not Having Companions	5.2	6.1
Structural Constraints		
Perceived Danger/Risk	1.8	6.8
Family Status (need to care for young/elderly, etc.)	13.3	13.7
Lack of Transportation	1.1	2.4
Difficulty of Access to Favorite Places	6.9	10.0
Financial Cost	17.3	19.6
Too Busy	28.3	22.2
Not Enough Time off from Work/School	25.2	21.2
The Weather	11.8	12

The results from asking Maine State Park non-users about their reasons for not visiting one of these parks before reveal that certain factors that are not necessarily 'constraints' are among the leading reasons this group has not visited one of these sites. While being too busy was a major reason for not visiting Maine State Parks (31.1%), having other recreational priorities (47.0%) and having a lack of interest in these areas (23.1%) were predominant factors. These results strongly imply that Maine State Parks are being used by the people who *want* to use them while the majority of non-users are likely content with not visiting them. A number of factors, such as financial cost, being too far away, family status, and physical difficulty, do signal that a large number of state park non-users would *like* to visit these areas but have encountered obstacles to participation.

Table 2. The Reasons that Maine State Park Non-Users have not visited a Maine State Park.

Reasons for not Visiting a Maine State Park	%
Financial Cost	17.0
Too far away	23.6
Lack of Interest	23.1
Family Status (need to care for young/elderly, etc.)	9.0
Physical Difficulty	5.5
Too busy	31.1
Other Recreational Priorities	47.0
Lack of Knowledge of Maine State Parks	21.3
Too many Rules/Restrictions	15.8
Other	7.2

Given that a large portion of resident non-users cited having other recreational priorities as a leading reason for not visiting state parks, it became relevant to examine what other types of outdoor recreational settings these individuals may be visiting instead of Maine State Parks. These non-users were found to have visited nearly every other type of outdoor setting found in Maine *less* than state park users. In most cases, state park users had visited other recreational settings— such as Acadia National Park, land trust properties, and local municipal parks—substantially more than state park non-users. This analysis did reveal, however, that it appears recreating on privately-owned land with recreational access is the most widely preferred setting option for non-users. Since the individuals from this study sample were known to be either hunters, fishers, snowmobile or ATV users, this finding is consistent with the fact that these specific types of activities are typically pursued on privately-owned lands in Maine. Despite this reality, however, all of the Maine State Park users were known to pursue these activities as well yet *still* visited a more diverse array of outdoor recreation settings than non-users. It is also valuable to recognize that within the two years leading up to this study, Maine State Parks were the most popular setting in Maine for residents to visit if they had visited one of these sites at least once before during their lifetime.

Table 3. The Recreational Settings in Maine visited by Maine State Park Users and Non-Users within the past Two Years.

Recreational Settings in Maine	Maine State Park Users (%)	Maine State Park Non-Users (%)
Acadia National Park	60.2	30.1
Baxter State Park	39.5	25.8
Agricultural Settings/Farms with Open Recreation	50.0	40.6
Local Municipal Parks	76.2	48.9
Maine Public Reserved Lands	47.3	28.3
Maine State Parks and Historic Sites	80.9	33.1 (Hist. Sites)
Private Land w/ Recreation	69.8	70.9
Land Trust Properties	51.2	38.3
U.S. Fish and Wildlife Refuges	42.8	27.1
White Mountain National Forest	40.3	22.3

Since it was clear that state park users were much more likely to visit a wider variety of outdoor recreation settings in Maine, it was possible that state park non users simply spent less of their overall time recreating. Respondents were asked about their frequency of participation in general outdoor recreation activities across seasons. During the winter, it was found that 48.8% of state park users recreated at least once a week and non-users 47.7%. During the spring, 60.6% of users and 59% of non-users recreated at least weekly. For the autumn, 75.7% of state park users and 72.8% of non-users recreated once a week. Summer was the only season where there was a notable difference between these two groups with 80.9% of state park users and 73.5% of non-users recreating at least once a week. Overall, these results show that even though state park non-users are more likely to recreate on a fewer types of outdoor settings, they remain approximately as active as state park users throughout the year.

By comparing the types of constraints that limit state park non-users from recreating in general and limits them from visiting Maine State Parks, it is apparent that some of those overall limitation have different effects on their visiting Maine State Parks. It was found that financial cost limited 19.6% of non-users to a 'large' or very 'large extent' and 17% of non-users from visiting Maine State Parks. There was a considerable difference between non-users lack of knowledge about recreation in general (2.7%) and their lack of knowledge about Maine State Parks (21.3%). A similar degree of difference was found in terms of lack of interest with only 2.7% of non-users not being interested in recreation in general but 23.1% of these individuals were not interested in visiting Maine State Parks. While 22.2% of non-users believed they were limited in their ability to recreate in general because they were too busy, 31.1% of these individuals indicated they were too busy to visit a Maine State Park. Relatively little difference was observed in terms of non-users limitations due to physical difficulty/strain for recreating in general (8.4%) and this same factor limiting these individuals from visiting Maine State Parks. There was a difference, however, in terms of non-users' family status as a constraining factor with 13.7% of these individuals being limited by their family status

but fewer (9%) of these individuals cited this as a limitation they encounter for visiting Maine State parks. By using McNemar chi square analysis, it was possible to determine which of these overlapping constraints held statistical significance. It was found that, aside from financial cost and physical difficulty, each of the other constraint variables were statistically significant.

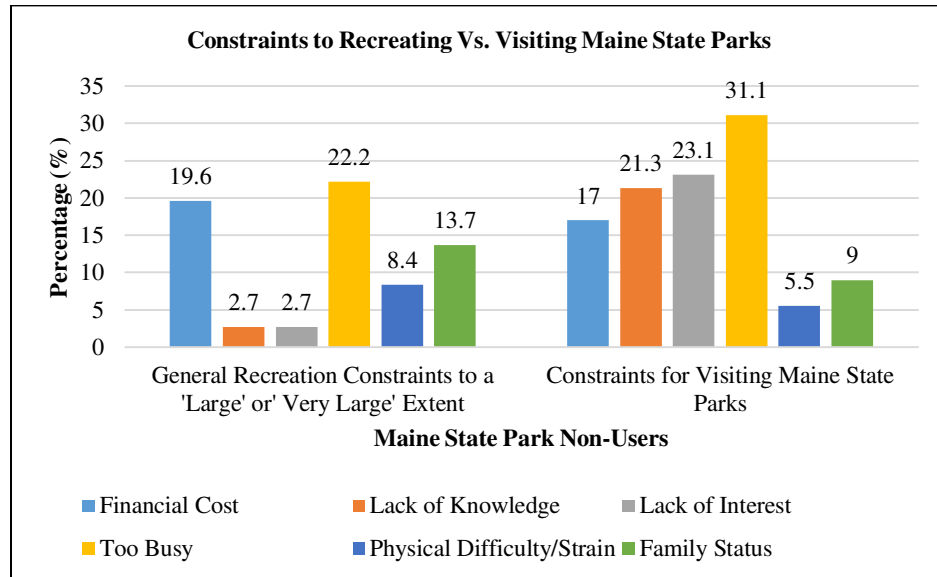


Figure 1. A Relative Comparison between Constraints to Participating in General Outdoor Activities and Visiting Maine State Parks

Table 4. Results of McNemar Chi-Square Analysis Determining if there is a Significant Difference in Constraints for Outdoor Recreation in General and Not Visiting Maine State Parks

Constraint Variable	Number of Respondents	Sig <0.05?	Significant?
Financial Cost	378	0.356	No
Lack of Knowledge	371	<0.001	Yes
Being too busy	383	0.001	Yes
Physical Difficulty	367	0.122	No
Lack of Interest	369	<0.001	Yes
Family Status	373	0.049	Yes

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4.0 Discussion and Conclusions

The results of the McNemar chi square analysis provide valuable insights into the relationships between state park non-users constraints to recreating in general and how these factors may affect/influence their reasons for not visiting Maine State Parks. No statistically significant difference was found in terms of financial cost. Therefore it is not likely that non-users believe the cost of visiting a Maine State Park poses a greater constraint to their potential visitation than their pursuit of general outdoor recreation activities. In terms of non-users potential lack of knowledge, nearly all non-users believe they have the knowledge required to pursue their preferred recreational activities in general, but their lack of knowledge about Maine State Parks is more likely to prevent them from visiting. As far as being limited by being too busy, if a non-user believes that they are too busy to pursue outdoor recreation in general, then they are much more likely to be too busy to visit a Maine State Park. Analysis revealed that if a non-user is prevented from pursuing outdoor recreation due to physical difficulty it is not likely that Maine State Parks pose further limitations to their abilities. This means that the facilities available at Maine State Parks are likely meeting the accommodation needs of most individuals. One significant finding was that while few non-users are not interested in outdoor recreation in general, a greater portion are not interested in Maine State Parks. Since a considerable number of individuals cited that lack of knowledge about Maine State Parks as a constraining factor, perhaps improved awareness could increase interest among those individuals who were not interested. A unique significant difference was found in terms of family status where Maine State Parks are able to offer easier access for individuals with family-related constraints than other general outdoor opportunities in Maine. This shows that Maine State Parks are clearly providing a valuable resource to many families who may otherwise have increased difficulty pursuing outdoor recreation activities.

Overall, this study was successful at developing an understanding of the constraints that limit Maine residents from visiting Maine's State Parks. Given that the vast majority of the residents from this sample had visited a one of these parks before (95.59%), and a large sample size was achieved (n=9043), this study offered a rare opportunity to examine a large number of state park non-users. There were, however, a number of limitations that were associated with this study. A number of constraint factors including not having companions to recreate with, difficulty of accessing favorite places, perceived danger/risk, not having enough time off, and the weather were not asked as both general recreation constraints and state park visitation constraints. Based on the results that were obtained for these factors, it is not likely that there were major differences in constraints for state park non-users since very few individuals indicated that there were "other" reasons that they had not visited a Maine State Park (7.2%). Differences in response scale types may have also limited the ability to accurately compare the different categories of constraints. Nevertheless, the results from this study clearly show trends in the ways that general recreational barriers for state park non-users influence their inability—or their choice—not to visit Maine State Parks.

5.0 References

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