

USING GEOGRAPHIC INFORMATION SYSTEMS WITH TRAVEL COST MODELS: A CASE STUDY.

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Abstract: This study demonstrates the use of the travel cost method combined with geographic information systems (GIS) to estimate the economic value of trips to designated recreation areas in South Carolina. Traditional travel cost methodology relies on the memory of survey respondents or crude simplifications to measure the travel time and distance for recreationists. Using GIS enables more accurate measures of time and distance. In addition, it allows for added visual information and spatial analysis that may be useful in marketing outdoor recreation areas.

Introduction

The Travel Cost Method (TCM) is a commonly applied nonmarket valuation method. The goal of travel cost studies is to estimate an economic value of outdoor recreation that can be used in resource allocation decision-making. Outdoor recreation is a nonmarket good because it is not traded in the market system and therefore does not have a price associated with it. The idea behind travel cost models is to use travel costs as a proxy for the price of a recreation trip to estimate a demand function for trips, and then to use this demand function to estimate economic value.

Using Geographic Information Systems (GIS) with TCM results in more accurate variable estimation, and the elimination of some simplifying assumptions commonly employed in travel cost studies. This study uses six outdoor recreation areas in South Carolina as a case study for the integration of GIS with TCM. First, a discussion of why we would want to use GIS with travel cost models is presented. Then, the methodology for this integration and its effect on economic value estimates is presented. Finally, the use of GIS for the spatial description and analysis of outdoor recreation behavior is presented.

Measurement Issues in TCM

The out-of-pocket price of a recreation trip in a travel cost study is generally defined in either of two ways. These are as a standard vehicle operating cost per mile, or as respondent reported travel expenditures. Following the first procedure requires an estimate of distance traveled. To obtain this, many studies have relied on the memory of survey respondents, which brings up the possibility of recall bias. Even without

this bias, there is the issue of how many respondents can very accurately assess how far they have traveled to a recreation site. Studies that have not relied on respondent memory have used straight line distances, which represents a loss of precision in measurement because of the variability in road networks, or have used manually traced distances on a map.

It is generally recognized that the opportunity cost of time should be included as part of the definition of total travel cost. To obtain an estimate of the cost of time, many studies have used an estimate of mileage and assumed a constant rate of speed to get travel time. They use this travel time and some fraction of the wage rate to estimate the cost of time. So, even studies that have used respondent reported travel expenditures require an estimate of mileage and an assumed constant travel speed to get opportunity cost of time.

Using GIS with a travel cost study eliminates the need to rely on respondent memory to get an estimate of mileage. It enables the researcher to easily and accurately measure mileage with less chance of human error than is associated with manually tracing distance on a map. It also enables the calculation of travel time using any factor associated with roads that may affect speed of travel and that may change along a route (e.g. speed limits, congestion factors, and road quality). Also, it enables the simultaneous calculation of travel distance and time for nonparticipants or for visits to potential substitute sites. This increased accuracy in measurement of the price of recreation could be very important because the economic value estimate provided by travel cost models is a function of the coefficient on the travel cost variable. Thus, anything that affects this variable could seriously impact the economic value results. Finally, when the information from a travel cost survey is present in a GIS, it opens up the possibility for spatial analysis of recreation behavior. The potential for using GIS in this area is very good (see Wing and Shelby 1999).

Methods

An on-site survey was done at six upstate South Carolina parks. These were the Fish Hatchery, Oconee State Park, Stumphouse Tunnel Park, Yellow Branch, South Cove County Park, and High Falls County Park. All six are located in the upper Northwest corner of South Carolina as can be seen in Figure 1. The survey was done at day use picnic areas to maintain consistency across the parks. Information was collected about annual number of visits, demographics, and respondent's home zip codes, and this information was entered into the GIS along with the locations of the parks and data on the road network for Georgia, South Carolina, and North Carolina.

Using the network data model in ARC/Info, the shortest path distance in miles and time was calculated from each park to each zip code in Georgia, South Carolina, or North Carolina from which a visit originated. Time was calculated using the distance measure and information about speed limits along the route.

The travel cost analysis was performed using the mileage and

time estimates calculated in the GIS. We specified a very simple version of a travel cost model with number of trips dependent on travel cost and income. Travel cost was calculated assuming a standard vehicle operating cost of 10 cents per mile plus the opportunity cost of time calculated at one third of the wage rate. The wage rate was derived from household income.

To test the effect that using GIS has on economic value estimates, the model was run using five different travel cost definitions. The simple specification of the travel cost model that was used (i.e., trips as a function of travel cost and income) ignores substitute sites and other factors that may influence recreation decisions, but maintains consistency across the models associated with the different travel cost definitions. The first definition was previously described; it used the GIS estimates of mileage and time and assumed 10 cents per mile and a third of the wage rate. The second definition of the travel cost variable used the respondent's estimate of mileage and assumed 10 cents per mile vehicle operating cost, and estimated time from a travel speed of 45 miles per hour. Then, the opportunity cost of time was estimated at a third of the wage rate. This is a common approach in the travel cost literature. The third definition used the respondent's estimate of the total cost of a trip. In this definition, the respondents could include as part of the travel cost anything that they considered relevant. The specific question on the survey that this information was taken from was, "How much would you estimate it cost to come here?"

Using GIS to increase accuracy of mileage and time measurement brings up the question of whether that is really desirable to do so. This is because it may be visitor perceptions of distance and time that affect recreation behavior (McConnell and Strand 1981). In addition, there are different types of recreationists. There are those who decide where they want to go before they leave home; they go there and then come back. These are referred to in this study as straight-line-travelers. These are the 'pure visitors' defined in Cheshire and Stabler (1976). Another potential decision-making process involves heading in a general direction to look around and see what looks good and stop there. These are referred to as meanderers. The idea is that for straight-line-travelers, increased accuracy in measurement through shortest path estimation of mileage and time using GIS may be appropriate, but for meanderers, who may not have even taken the shortest path, the respondent's own assessment of distance and time may be more appropriate. Therefore, the final two definitions of the travel cost variable distinguish straight-line-travelers and meanderers in the survey and assign the straight-line-travelers the GIS based cost and assign the meanderers their perceptions of cost. The fourth travel cost definition uses the GIS estimates of mileage and time and assumes 10 cents per mile vehicle operating cost and a third of the wage rate for straight-line-travelers. For meanderers this definition uses respondents' assessment of mileage with 10 cents per mile and assumes 45 miles per hour travel speed to get time, and then assumes one third of the wage rate to get the cost of time. The final travel cost definition uses the GIS based mileage and time in the same fashion as previous definitions for the straight-line-travelers,

and uses respondents' assessment of the total cost of the trip for the meanderers. The straight-line-travelers and meanderers were distinguished by a question in the survey which solicited information about the way the respondents decided where to go for their recreation trip. Did they decide where to go before they left home or while in transit.

Results

The modeling results are presented in Table 1, which shows the results of the model with the GIS based travel cost. There are five separate models, one for each of the travel cost definitions. Only the GIS based model is presented here, but the coefficients on the travel cost variable and income was significant in all five models and the signs of these were both significant in all five models. The negative coefficient on the travel cost variable supports an inverse relationship between travel cost and number of trips. The negative coefficient on the income variable may be because of the nature of an afternoon outing to a park being more of a time intensive than money intensive good. It is possible that higher income groups have less leisure time to engage in this kind of activity.

Table 1. Truncated Poisson Recreation Demand Model

Variable	Coefficient	Asymptotic t-ratio	Mean
Constant	1.95	36.926	-
GIS cost	-0.0257	-12.413	25.64
Income	-0.0049	-4.001	45.97

The economic value results for each of the five models are presented in Table 2. The first thing to notice is that using GIS did affect the results. The results from the model where travel cost was defined as respondent's assessment of mileage was much higher than the results from the GIS based cost. The respondent's assessment of mileage result was \$50.95 while the results from the GIS based cost was \$38.97. The standard deviation of the value estimate from the respondent's assessment of mileage was approximately twice that of the standard deviation from the GIS based cost (6.20 and 3.14 respectively). The value estimate from the respondent's assessment of total cost was quite close to the GIS based value estimate, but its standard deviation is even larger than the mileage perception estimate. Using the respondent's assessment of total cost gave a standard deviation of 7.30. Considering the final two travel cost definitions, the a priori hypothesis was that separating the meanderers and straight-line-travelers and assigning them a cost more associated with their decision-making processes would increase precision in the value estimates (i.e., provide the smallest standard deviations). However, the most precise estimates resulted from using the GIS based costs for all respondents, including the meanderers.

Visitation to the South Carolina Fish Hatchery in 1998

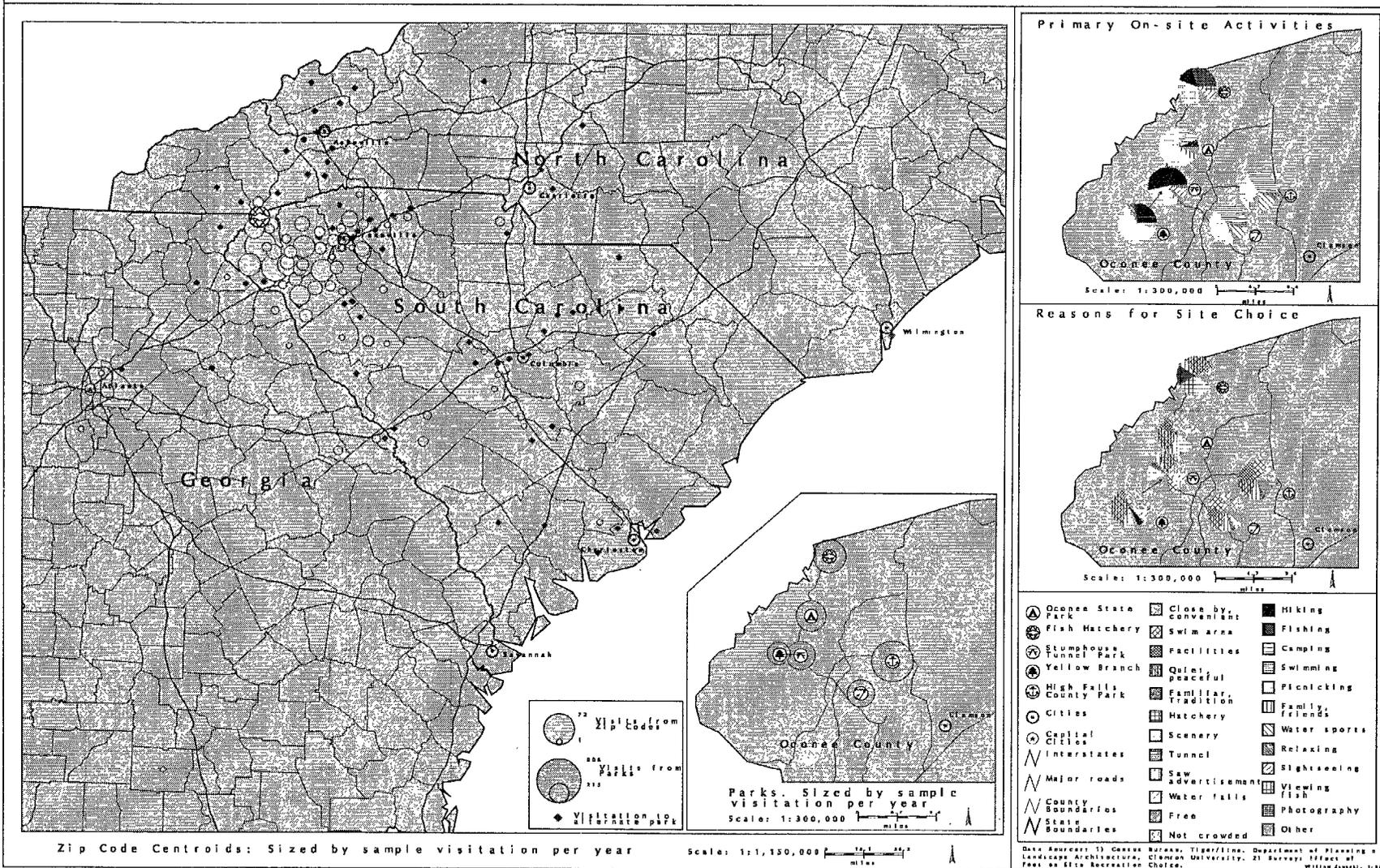
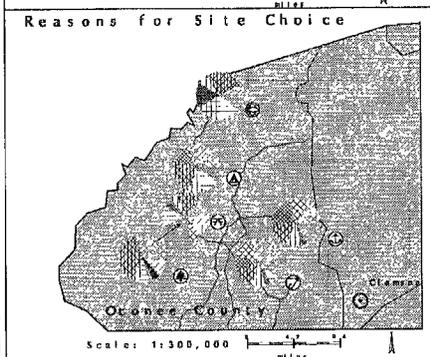
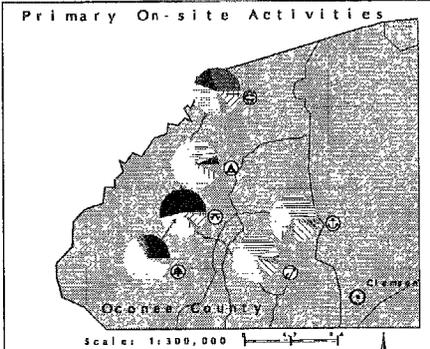
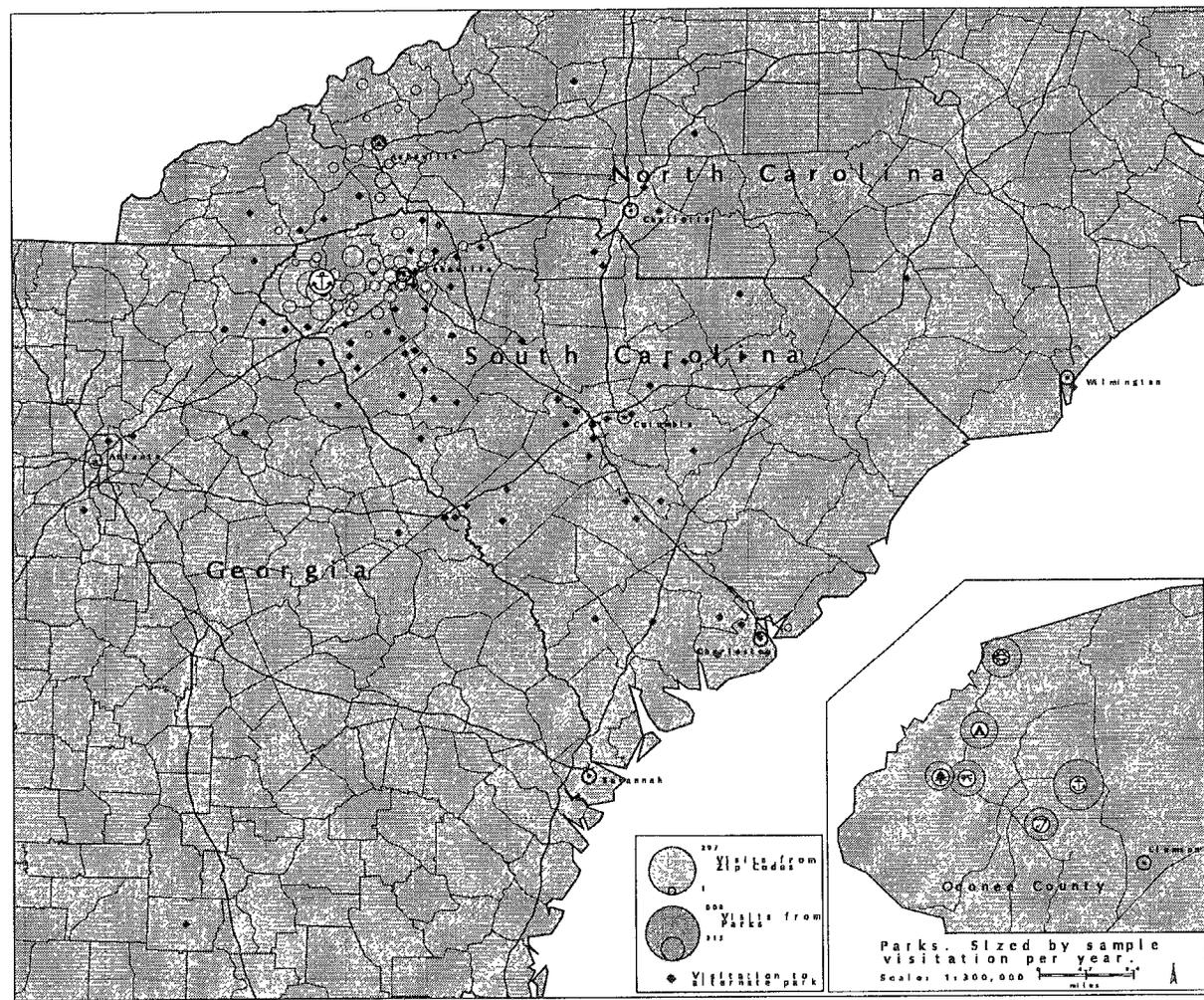


Figure 1

Visitation to High Falls County Park, South Carolina in 1998



- | | | |
|--------------------------|------------------------|-------------------|
| Ⓐ Oconee State Park | ⊗ Close by, convenient | ⊞ Hiking |
| Ⓜ Fish Hatchery | ⊗ Swim area | ⊞ Fishing |
| Ⓜ Slumhouse Tunnel Park | ⊞ Facilities | ⊞ Camping |
| Ⓜ Yellow Branch | ⊞ Quiet, peaceful | ⊞ Swimming |
| Ⓜ High Falls County Park | ⊞ Familiar, Tradition | ⊞ Picnicking |
| Ⓜ Cities | ⊞ Hatchery | ⊞ family, friends |
| Ⓜ Capital Cities | ⊞ Scenery | ⊞ Water sports |
| Ⓜ Interstates | ⊞ Tunnel | ⊞ Relaxing |
| Ⓜ Major roads | ⊞ Saw advertisement | ⊞ Sightseeing |
| Ⓜ County Boundaries | ⊞ Water falls | ⊞ Viewing fish |
| Ⓜ State Boundaries | ⊞ Free | ⊞ Photography |
| | ⊞ Not crowded | ⊞ Other |

Data Sources: 1) Census Bureau, Tiger/line, Department of Planning & Landscape Architecture, Clemson University. 2) Survey; Effect of Fees on Site Recreational Choice.

Figure 2

Visitation to Six South Carolina Parks in 1998

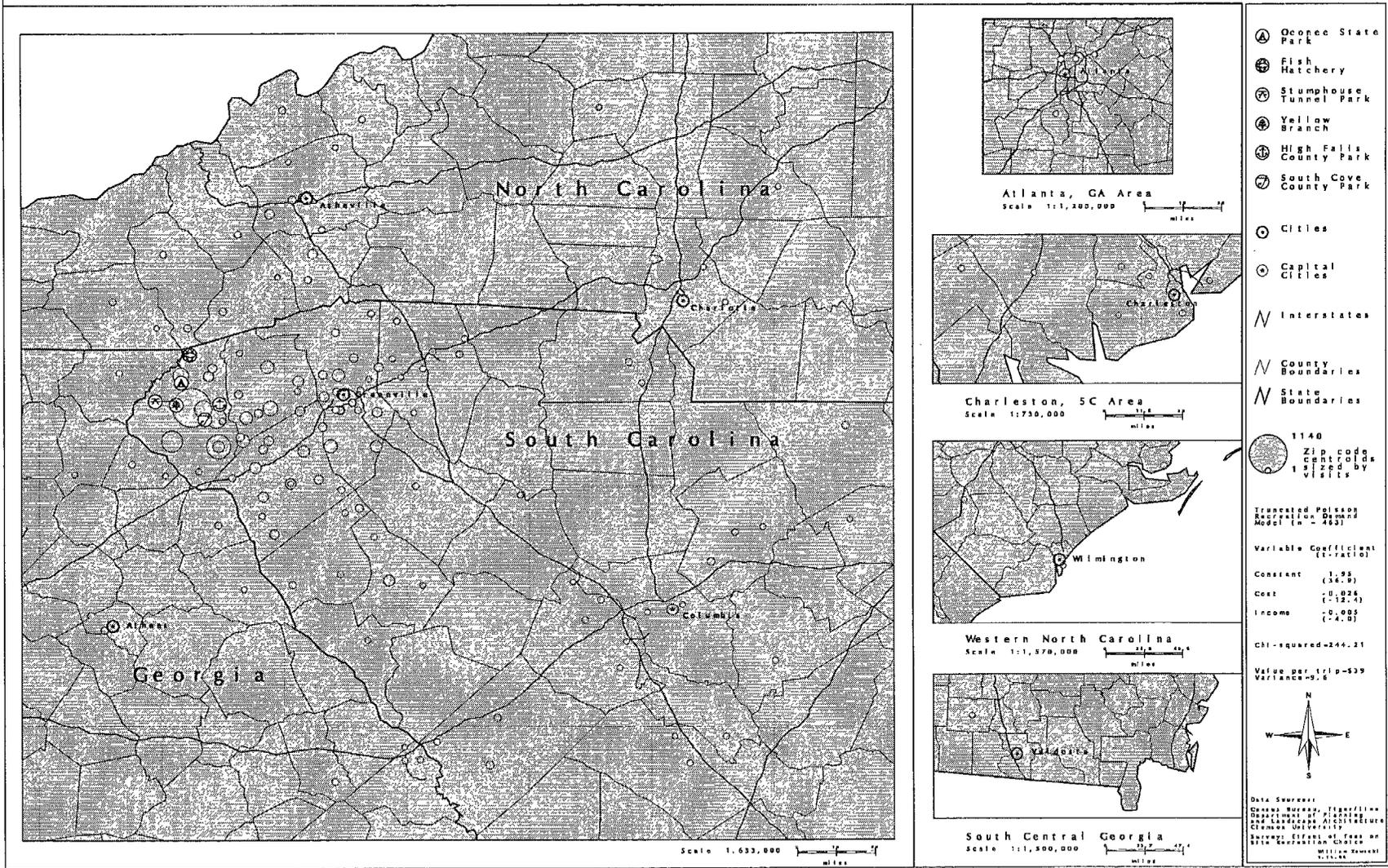


Figure 3

Table 2. Economic Value per Trip (Dollars).

Travel Cost Specification	Point Estimate	Standard Deviation
GIS cost	38.97	3.14
Mileage perception	50.95	6.20
Total cost perception	39.97	7.30
Mileage mixture	47.15	5.01
Total cost mixture	38.05	5.25

The implications of these results are that GIS increased the precision of the value estimates. All else equal, it is important to have precision in economic value estimates. Wide confidence intervals will lessen the power of the results in terms of using them for policy or management decisions. Also, the point estimates differed across the five travel cost definitions. This has implications for studies that have relied on respondent recall and perceptions of mileage and cost. These results are not necessarily generalizable, but they illustrate the importance of considering accuracy of measurement in applications of travel cost models.

Spatial Analysis

A further advantage of using GIS is the potential to use the recreation data to spatially describe and analyze behavior. Figure 1 is a picture of the spatial distribution of visitation to the six parks. The circles are zip code centroids sized by total number of sample visits to any of the six parks as well as two roadside picnic areas per year.

The next two figures (2 and 3) show the spatial distribution of visitation to two of the six parks separately. Again, the circles are zip code centroids sized by sample visitation per year. The diamonds represent a zip code that had a visit occurrence to one of the other parks. The insert shows the parks themselves sized by relative visitation. The pie charts on the right side of the maps show the relative frequencies of primary activities on-site and reasons for site choice. Thus, these maps present a picture of where people are coming from, where they're not coming from in terms of other parks in the area, where they're going to, why they go where they go, and what they do once they get there. The main purposes of these maps in this study is to provide information to the individual park managers, but also to illustrate the potential of using GIS in a human dimension area of recreation management. These are useful to managers for marketing purposes (knowledge of where your customer base is and is not coming from) and in understanding the nature of their visitors in terms of the services and amenities that visitors prefer. Some of this information could be offered in tables, but it may be more interesting to look at in a map format than in frequency tables.

Conclusion

This paper points out measurement issues in travel cost studies, which can impact the accuracy and precision of value results. It also presents a GIS case study for handling these measurement issues. In this study, using GIS with the travel cost model results in more precise value estimates. Maps produced in this study provide information that may be useful for management and marketing of the recreation sites.

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VISITOR EXPERIENCES AND PARTICIPATION

FIVE REASONS TO HAVE RESERVATIONS ABOUT BENEFITS-BASED MANAGEMENT

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Abstract: Benefits-based management has become a dominant framework among recreation managers at the municipal, state, and federal levels. Yet, researchers have expressed growing doubts about the conceptual, methodological, and policy ramifications of this "good news" approach to leisure behavior. Specifically, we are troubled by: (1) the "all-inclusive" conceptualization of the benefit construct, (2) its "rational actor" theoretical foundation, (3) its inherent contextuality that is often ignored by practitioners and researchers, and (4) a methodology that attempts to identify specific benefits with certain activities and/or settings. This paper explores conceptual, theoretical, and methodological limitations of the benefits construct, and suggests potential management alternatives.

Introduction

Benefits-based management (BBM) has been described as "a movement that has caught the country by storm. There is no issue more pervasive within the profession than the concepts, strategies, and procedures of the benefits movement" (Allen et al., 1998, p. 36). And, indeed, recreation managers at the municipal, state, and federal levels have been quick to embrace this experience-based leisure delivery system which documents the benefits of their services within the context of a scientifically grounded management system. But has their endorsement of BBM come too quickly? Recently, researchers have been expressing growing doubts about both BBM's scientific foundations, and about the management and policy conclusions that are drawn from BBM. Kelly (1993), for example, expressed concern that experience-based approaches underestimate the powerful effect of social structure in people's lives, leading managers toward an overly optimistic assessment of the effects of their services. Similarly, Williams, et al. (1992) argued that BBM treats leisure experience as a form of consumption--a problem of consumer behavior in which recreation managers measure success by how well they match leisure products with customer demand. And Lowi (1986) argued that "any

science that accepts the job of identifying benefits has made itself into a priesthood." (p. 133).

Have we been too quick to embrace BBM as a management framework? Certainly BBM appears to have a solid conceptual foundation: Few would deny that leisure provides multiple good things--individual gains or improved conditions--and most would agree that managers should monitor social consensus and strive to provide beneficial outcomes. Yet we, too, find ourselves with growing reservations about both the scientific validity and policy ramifications of BBM. In this paper, after providing an overview of the current state of benefits-based management, we identify five reasons to have reservations about it; we close with a discussion of the value of BBM and potential alternatives to it.

The Conceptual Framework of Benefits-Based Management

The benefits approach to leisure has gone through multiple incarnations since Driver and Tocher (1970) first introduced the concept of a behavioral approach to recreation. Based in earlier motivation research, Knopf (1972) and Knopf et al. (1973) used compensation theory to suggest that people are motivated to recreate by undesirable conditions in the nonrecreational environment. Recreation provides positive and preferred experiences and opportunities for action that are unavailable in the more mundane tasks of everyday life. Driver and associates (e.g., Driver 1977, Driver & Bassett 1975, Schreyer & Roggenbuck 1978) utilized expectancy-value theory to assert that people's behavior is motivated by expected and preferred (valued) outcomes of a recreation experience. Tinsley and associates (e.g., Tinsley et al. 1977, Tinsley & Kass 1979) described behavior as motivated by need satisfaction. They asserted that people recreate to fulfill a physiological or learned need deficit. The work of Hendee (1974) and other human dimensions of wildlife researchers (e.g., Decker et al. 1980) took a "multiple satisfaction" approach to recreation behavior arguing that the recreation experience offers a complex of human satisfactions that lead to physical, social, and psychological benefits.

Today, the benefits approach to leisure (BAL) is the most recent iteration of this goal-directed approach to motivated leisure behavior. Benefits-based management (BBM), as the cornerstone of the benefits approach to leisure (BAL), is a conceptual framework that uses concepts from General Systems Theory to integrate the inputs and physical structure of leisure/recreation service delivery systems with the outputs of those systems (Driver and Bruns 1999). The BAL consists of a policy component and a management component--BBM. The focus is on understanding why a particular leisure service is provided in terms of the benefits (and disbenefits) it produces. The goal, of course, is to maximize the net benefits, or to add as much value as possible.

BBM is focused on the outputs of the recreation service delivery system--the benefits produced. A benefit can consist of an improved condition of an individual or group

(or the physical environment), the prevention of an unwanted condition, or the attainment of a desired condition (Driver 1996). Four categories of benefits have been identified: personal benefits, sociocultural benefits, economic benefits, and environmental benefits (Driver and Bruns 1999). Often these are linked in a "benefit chain of causality" (Driver 1994), where the production of one benefit leads to another. For example, an individual may participate in recreation to see personal benefits such as relief from job stress. This, in turn, leads to improved work performance, resulting in higher salary and increased economic security. This security might lead to increases in product quantity or quality, or reduced product cost, which would increase the firm's competitive advantage, eventually resulting in lower trade deficits (Figure 1).

At the core of this "benefit chain of causality" are the personal benefits that people derive from recreation, and which often motivate participation. For example, people participate in aerobics classes in order to achieve specific physical and psychological benefits such as increased fitness and decreased stress (Laverie 1998). Much of the work identifying specific benefits that motivate recreation participation has been conducted by Driver and his associates and Tinsley and his associates (see review by Driver, Tinsley and Manfredo 1991). Currently, Driver and Bruns (1999) subdivide personal benefits into mental health and health maintenance benefits (e.g., anxiety reduction), personal development benefits (e.g., self-confidence, leadership, nature learning), personal appreciation/satisfaction benefits (e.g., spirituality, stimulation), and psychophysiological benefits (e.g., weight control, arthritis management). Under these general headings, Driver and Bruns (1999) list 61 specific benefits. The list is hardly exhaustive, however, and other researchers offer different, although often related, benefits and categories (cf. Tinsley, In: Driver, Tinsley and Manfredo 1991).

BBM's second major premise of BBM is that the benefits can be linked meaningfully with specific recreation activities and specific environments. Such a linkage is indeed necessary if management is to take an active role in benefit production. The benefits themselves, particularly the psychological benefits, depend on the kinds of outcomes people desire from their recreation engagements. People have preferences for different kinds of experiences within a particular activity and setting. Thus, escaping physical pressure is an important experience preference for trout anglers in both Michigan and Pennsylvania, but is not as important for Pennsylvania picnickers (Driver 1994). As measured by the Recreation Experience Preference Scales (Driver et al. 1991), these preferences are thought to display strong, recurrent patterns within an activity and across many experiences that are most highly valued (Driver 1994, p. 35). It is the benefits that stem from these experiences, along with the other benefit categories, that represent the true output of the recreation service delivery system; these are what recreation managers should strive to produce.

In sum, BBM purports to offer a comprehensive outputs-oriented framework, and an intuitively appealing management goal for recreation resource managers who provide public services. Yet we find ourselves unconvinced of BBM's merits. What could be wrong with such a scheme? Overall, we are troubled by: (1) the overall conceptualization of the benefit construct, (2) its theoretical foundation, (3) its inherent contextuality, and (4) a methodology that attempts to identify benefits with certain activities and/or settings. Specifically, we have the following five reservations.

I: The Benefits are Endless

BBM owes its appeal primarily to two factors. First, it is a broad-based, encompassing general framework that appears to offer a technological, research-based approach to recreation planning and management. Second, by focusing on benefits, it represents the "good news"--it tells us what we want to hear. Each factor contributes to an all-inclusive conceptualization of the benefit construct--a sort of "anything goes" framework.

In reviewing the literature on BBM, we found it to be an elusive concept. Part of the problem is that it has gone through multiple iterations and revisions since first introduced in 1970. This is understandable, of course; it is only natural that ideas develop over time. Generally, however, they coalesce and grow clearer. BBM, by contrast, has grown broader and has become, in our opinion, increasingly vague as it attempts to be all things to all people. In addition to the 61 personal benefits mentioned above, Driver and Bruns (1999) list an additional 43 other benefits in different categories. And BBM is now but one component of the larger BAL. In addition to the benefits themselves, there are also process components, like stages, throughput processes, and the like, as well as factors such as recreation activity opportunities, recreation experience opportunities and other benefit opportunities. The problem with having so many different parameters, components, and processes is that they enable the BBM user to find whatever he or she wants to.

In fact, while Driver (1996) notes that individual managers are the ultimate arbiters of what constitutes a benefit, such a position raises questions about the scientific basis of BBM. Certainly, there have been many studies that analyze benefits. Such studies often have their own problematic assumptions, a fact that is often glossed over in BBM presentations. For example, achievement is typically presented as a need (cf. Atkinson 1964, Tinsley and Tinsley 1986, Driver et al. 1991). If this is the case, then opportunities to achieve might legitimately be considered a benefit. Yet, if achievement is a "need," it surely operates in a very different way than needs for water, air, proper nutrition, and the like. Alternatively, it is possible to conceptualize achievement as a personality trait--a learned predisposition to respond in particular ways in particular situations (cf. Averill and More 1993); not a "need" at all. Moreover, achievement is also a social ideology tied to capital expansion and marketplace competition. If the latter

formulation is correct, is it possible to claim opportunities to achieve as a benefit? Similar problems plague many of the other proposed benefits (see, for example, the discussion of spiritual benefits below).

Without proper scientific grounding of benefit claims, the BBM loses meaning rapidly. Humans have a remarkable ability to look on the bright side of virtually any situation. A hiker who injures her knee on a particular trip might look back on the outing and say "Well, I certainly learned something on that hike!" Under such conditions, the benefits are indeed endless, and so the BBM becomes a construct that can neither be proved nor disproved. So, as the benefits approach infinity, the concept loses meaning, rendering it of very limited use for both management and research. When don't we benefit? What isn't a benefit? These are crucial questions that BBM fails to deal with.

This raises a second point: BBM can be popular because it brings the "good news." Over the past 30 years, few recreation agencies have fared well in the quest for funding (LaPage 1994, Morton 1997). Under such circumstances, managers with programs to justify and staff to keep employed are likely to embrace concepts like BBM wholeheartedly without skepticism or reservation. Such was the case with economic impact studies; dollar figures are a useful way to convince unbelievers. Unfortunately, economic expenditures represent locational transfers--taking from one area or industry and giving to another. The benefit can be either positive or negative depending on your perspective. So, too, with BBM. The good-news framework of the benefits approach tends to ignore the zero-sum game of public provision of goods and services. Consequently, after the initial blush of enthusiasm wears off, we believe BBM is likely to provoke skepticism.

II: Provisional Benefits and the Ambiguity of Action

The all-inclusive conceptualization of benefits may be implicit in its theoretical foundation. The benefits approach to leisure relies on a rational-actor model of human behavior. The BAL is grounded in a experience-based approach to leisure (Driver & Tocher 1970), which assumes that human behavior is goal-directed. Individuals act because they expect their behavior to bring about some expected and preferred outcome (Driver 1976). Everyday life stimulates needs, motives, or preferences for certain desired outcomes that can only be achieved through specific types of behavior. The BAL extends this expectancy-value approach to behavior by designating the desired outcomes of a leisure engagement as the beneficial outcomes achieved through participation. The lathe operator threatened with being laid off goes fishing to relieve stress, and the computer programmer bound to a screen all week goes cross-country skiing to reduce cholesterol and burn off excess physical energy. Logically, it makes intuitive sense that individuals act in their own best interest. Yet, when things go wrong, individuals possess a keen ability to construct benefit out of unexpected circumstances and miserable experiences. So, within a means-ends framework of behavior, beneficial

outcomes can be retrospectively identified in almost any situation.

Many philosophical and theoretical traditions, however, contend that life is not so orderly as these utilitarian models would suggest. The expectancy-value framework emphasizes the rational calculus of individual cognition in explaining behavior. It assumes that behavior is the outcome of how people access relevant information, filter the importance of different pieces of information, weight potential action scenarios, and then act in a way that controls for contingencies and maximizes their benefit. This "rational-actor" assumption is at odds with a growing number of theoretical perspectives in the social sciences. The social cognition (Fiske & Taylor 1984) literature in social psychology suggests that people's use of rational calculus in everyday life may be constrained and somewhat limited. People are not terribly good information processors (Kahneman, Slovic, & Tversky 1982), and frequently use logical heuristics or shortcuts that limit the precision of their evaluations. In everyday interaction, we frequently use scripts (Langer 1989) of dialogue in mundane situations, and we often draw on mental representations (schemata) in a wide variety of life situations to orient us and cue us to the social norms and expectations for appropriate behavior.

This literature suggests that we live in a setting of persistent uncertainty, often wondering what to do or say next in everyday interactions and social settings. The starting point of this theoretical framework is the world's inherent complexity and ambiguity (Weber 1949) as opposed to the desired goal-objects of expectancy-value theory and BAL. The problem of everyday life is negotiating through the uncertainty of daily situations as opposed to acting on means-ends relationships. Granted, in this environment of uncertainty, humans constantly seek ways to filter out the confusion and extraneous noise of everyday perception (Weber 1949, Giddens 1984). Interaction rituals (Goffman 1967), scripts, and cognitive schema structure the world and guide us through uncertain situations. We also characterize our behavior as goal directed and benefit maximizing as a way to make sense and order out of the complexities and uncertainties of everyday life (Giddens 1984). Nevertheless, there is nothing essential in the make-up of humans that predisposes one to act "rationally" or to seek benefits. And there is nothing essential in the benefit outcomes that we reflexively link to our behavior. If social interaction and social behavior are uncertain, benefits become one option for orienting ourselves to the behavioral field, one tool of discourse that orders the social world. Consensus on what is judged beneficial and what is not beneficial becomes contested, and the empirical "substance" of a benefit becomes difficult to isolate.

These theoretical issues suggest an inherent uncertainty about when a situation can be categorized as beneficial and when it can be classified as something else. Sailors chartering a 5-day cruise around Lake Superior's Apostle Islands may bring relaxing images of sunsets, romantic images of deserted sandy beaches, barbecuing on deck in a quiet bay, and being heeled over in a steady wind. But

suppose they find rough water and gusting wind, making them lie awake all night worrying if the anchor will hold against a changing wind direction. What if the fog rolled in on the last day causing them to pay an extra \$500 a day for keeping the boat past the original charter period? Even though the expected experience came nowhere close to the reality, did this group of sailors benefit from the experience? Probably so, but the benefit package was inherently uncertain and perhaps unpredictable from the start, and certainly not amenable to specific management actions targeted toward specific benefit outcomes. Management actions cannot mandate relaxation, romance, or family togetherness. Only participation can play out the scripts and interaction rituals that define for them the meaning of relaxation and family togetherness.

Perhaps all that can be said is that managers of this sailing experience can provide broad behavioral (activity) options while recreationists craft and negotiate their own reflexive set of benefits. But, in providing the setting, should managers also claim the full benefit/disbenefit package? In accepting responsibility for the benefits defined by participation in these activity options, should managers also accept responsibility for the broken bones, sleepless nights, family arguments, and a host of other unpleasant things that may happen during leisure experiences?

III: Monday Morning Always Follows the Weekend

We are also troubled by the inherent context in which benefits are defined, but which tend to go unidentified. BBM's focus on benefits can tend to encourage an overly optimistic, rather unrealistic view of the world, a view that Kelly (1993) has described as an "OK world, viewpoint. Several issues are involved here. First, just how great are the benefits of recreation? Although "disbenefits" receive some passing attention, costs in general do not. We use the term "cost" broadly here. There are certainly financial costs to both participants and providers, and there are opportunity costs as well. Participating in activity x means foregoing the benefits of activity y. Opportunities to achieve also imply opportunities to fail. Intense physical activities certainly provide benefits, but at the cost of

bodily wear and tear. As Elery Hamilton-Smith (pers. comm., Rethink Consulting, Inc., Melbourne, Australia 1999) points out, one of the most significant economic benefits of sports participation is the multimillion dollar industry it sustains in repairing the skeletal and muscular systems of sports participants! Nor are all the benefits entirely pure; competition, for example, can be looked upon as a virtue that encourages achievement, or as a disbenefit that encourages aggressiveness. How is one to decide which is appropriate? BBM suggests that there is broad social agreement about what constitutes a benefit and that, in cases where there is no such agreement, the manager is the ultimate arbiter (Driver 1996). This is undoubtedly appropriate, provided one bears in mind that the social consensus is stronger for some benefits than others, and some benefits like competition/achievement may be linked with both desirable and undesirable consequences.

A second concern has to do with the "benefit chain of causality," in which one benefit, as an output of the recreation service delivery system, can serve as an input to the creation of other subsequent benefits. An illustration (Figure 1) is provided by Driver and Bruns (1999, p. 47).

In this example, engaging in recreation can reduce job stress, eventually leading to an enhanced sense of well-being at the personal level and lower trade deficits at the social level. As before, we believe this encourages an overly optimistic, exaggerated view of the importance of benefits. Consider the following sequence: If you ask a student why she ties her shoes in the morning, she will respond "To go to class." She goes to class because she wants to pass her exam. She wants to pass the exam in order to pass the course, graduate, and go on to medical school to become a physician. In this way, then, the simple act of tying a shoe can be linked to the distant goal of becoming a physician. But, try turning this causal sequence around: Take a student graduating from medical school and ask her why she became a physician. Her response is unlikely to be "Because I tied my shoes." So, too, with recreation activities; if you ask why we have

Figure 1.: The benefits chain of causality (from Driver and Bruns 1999, p. 47)

A recreationalist mentally relaxes on site from job-caused stress	Improved work performance	Higher salary and increased economic security	Increased satisfaction with life	Enhanced sense of well-being
		Increased quality or quantity of product and/or	Increased competitive advantage	Lower trade deficits

lower trade deficits, nobody is likely to trace the cause to the provision of picnic sites. In this way, the benefits chain of causality acts like a multiplier effect to create an exaggerated sense of importance, a sense which can be devastating when brought to nonbelievers.

A third related issue concerns the ability of these benefits to make effective changes in a person's life. People's psychological lives exist within well-defined social and biological structures that are resistant to change. No matter how wonderful a weekend may have been, Monday morning is likely to find us multiple thousands of dollars in debt, with a boss or a spouse whom we do not like, trapped in a dead-end job, etc. There is no doubt that participating in leisure activities does offer benefits to participants, helping them to cope with some of life's woes, but it is important to be realistic about the extent of the effects. BBM, with its "benefits-based chain of causality," does not encourage such realism.

IV: Why Can't We All Just See Things as They Really Are?

This problem of contextuality points to further theoretical difficulties with BBM's actor model. The expectancy-value approach to human behavior assumes that people generally know what they like and know what is good for them. These preferences are used in either genetically encoded physiological needs or learned responses to experiential cause and effect sequences. Benefits then are the empirical outcomes of causal chains of events encountered in the personal, social, and cultural systems of a society (Parsons & Shils 1962). Context becomes an exogenous variable in this rational-actor framework to be statistically controlled or, more often, simply ignored in the modeling process.

Discourse theory (Habermas 1976, Calhoun 1996), however, directly challenges the systems-based approach of expectancy-value theory. The focus on social discourse shifts the focus from causal imperatives built into social structure to communicative processes that dynamically define and refine social meaning, shared beliefs, behavioral standards, and rules of "appropriate" evaluation. Social context becomes the backdrop for social discourse, argumentation, and consensus building. Benefits become contested representations of social experience within a given social context. This framework leaves room for widespread consensus about what is or is not beneficial. At the same time, there is also room for either slow or rapid shifts in the social definition of what is beneficial based on levels of public engagement in a multitude of communicative outlets for argumentation, discussion, and persuasive appeals.

Within the discourse framework, context frames the communicative process. Is an elevated heart rate beneficial? Most would agree that an elevated heart rate during exercise is beneficial, based on arguments made by the medical profession. Research on deer hunters also show significantly elevated heart rates when a deer passes

by (Stedman & Heberlein 1997). This phenomenon is typically associated with excitement, thrill, and other emotions that hunters would label as beneficial. However, the elevated heart rate of an out-of-shape deer hunter hiking to a remote deer stand may be considered stressful and burdensome. Similarly, a heart patient's elevated heart rate that has been induced by amyl nitrate before a sonogram may be considered extremely unpleasant. The point is that different contexts produce different levels of discourse about the phenomenon, and extracting universal benefits is methodologically troublesome.

Even when there is widespread consensus about a certain benefit discourse, it may not be stable across time. Is wilderness good for people? Prior to the mid-nineteenth century, the answer was a clear no. Since the discourse of the romantics and the transcendentalists of the mid- to late 1800's, the idea of wilderness has become well established in western societies. More recently, however, some have questioned the utility and equity of imposing the wilderness idea on developing nations (Guha 1989, Neumann 1998). In sum, the dynamic nature of social interaction guarantees that discourses will change; situations considered beneficial at one time may not be defined as beneficial later.

Finally, different benefit discourses may resonate well among certain groups but not among others. The benefits chain of causality (Driver & Bruns 1999) is a clear example (Figure 1). The stressed lathe operator on an hourly wage at a high-tech assembly plant may indeed find her recreation relaxing, which may in turn improve her work performance, leading to increased wages and higher life satisfaction. But such a discourse about capitalist expansion may not resonate as well with the dairy farmer who struggles to find leisure because his cows must be milked every day, and whose milk price (i.e., profit) is regulated so the opportunities for increased wages are limited. Moreover, the quality and quantity of his product (milk) are constrained within fairly tight boundaries. The benefits chain of causality would make little sense to those uninterested in improving their work performance, or those who are happy with their current condition of life. It clearly would also make little sense to marginalized members of society, and could be viewed as manipulative and oppressive. The bottom line is that capitalist expansion is a narrowly-defined discourse on the benefits of leisure, and certainly a contested discourse about what is good and valuable about leisure.

V: Can't We Just Stay Home and Get the Same Benefits?

Finally, we are troubled by BBM's methodological aspirations. Despite the optimistic claims of BBM enthusiasts, it may prove to be impossible to link specific benefits to specific activities and sites. There are two reasons for this. First, complex recreation activities like camping, hunting, fishing, or hiking are actually constructions that people put together in different ways on different occasions. To illustrate, imagine sailing on the

same lake on five different outings: 1) you are alone; 2) you are with a group of close friends; 3) you are with a group of business associates; 4) you are with relatives; and 5) you are hosting a birthday party for a group of nine-year-olds. Although each of these would count as a sailing occasion, the environmental attributes to which you respond, and the benefits you might obtain might differ substantially. For example, while alone, you might be very much in tune with the aesthetics of the experience, enjoying the feel of the wind in your face and the glint of the sun on the water. But how much opportunity would you have to appreciate these things when hosting the birthday party. Here, you would need to keep a watchful eye on the nine-year-olds, be ready to ward off potential squabbles, etc. The satisfaction comes not from aesthetics, but from the altruistic pleasure of providing a memorable experience for the birthday child in particular.

In theory, BBM could handle all these contingencies, given a sufficiently improved measurement technology and detailed application to multiple sites. In practice, however, we simply lump all these different occasions under one general heading--sailing--and assume the same benefit package applies to all. Surely, this can do nothing but be ultimately misleading.

A second problem is that benefit may be available from multiple activities. For example, autonomy--the chance to be on your own, not answerable to others, and completely responsible for your own decisions--might well be claimed as a benefit of wilderness recreation. Yet autonomy could just as well be achieved in a city park or home alone watching TV, remote control in hand. Under BBM we would be technically justified in claiming autonomy as a benefit of each of these experiences; where we would go astray would be if we tried to claim that any one of them--say wilderness use--was special because it provided autonomy.

A third point is that some of the presumed benefits may not be benefits at all, or may be so tenuously tied to particular activities and sites as to be inherently unpredictable. Spiritual values are an excellent illustration. The U.S. is one of the most religious countries in the world and is becoming more so (More et al. 1998). The recent upsurge in interest in all things spiritual has led to an examination of the role of spirituality in nature (cf. Driver et al. 1996) and to claims that natural environments can provide spiritual benefits. But just what is a spiritual benefit? Consider these two experiences:

1. A good friend had recently lost a loved one and was feeling extremely depressed. It was about 4:00 p.m. on a warm and sunny Autumn day. Being familiar with the Morton Arboretum and with its beauty at this time of the year, I felt that a drive through the Arboretum could be both pleasant and therapeutic. . . . It was almost peak fall color. While riding, we talked freely of our feelings and her present situation. As we approached the Forest area, I chose a road with no other cars or people in sight. We were able to drive

slowly and soon came to the densest part of the forest where the sugar maples had turned brilliant colors of yellow and orange. Mingled in with the maples were tall green spruces; the Virginia creeper with its fall red coloring dappled the other colors. It was as if, suddenly, we were inside a large cathedral with stained-glass windows. The feeling was magnificent and awe-inspiring. Almost automatically my car came to a stop. All conversation came to a stop. The "peak" aesthetic experience occurred as the presence of a Supreme Being seemed to engulf us. The beauty of the environment and the solitude of the forest made us become "one." We were quiet and motionless for several minutes. A few tears rolled down the cheek of my friend. Quietly, she said, "Thank you, I feel better--I can face anything now." It was a profound experience for both of us. (Quoted in Dwyer et al. 1991: 227-278).

2. Suddenly, abruptly without warning, an extremely powerful force catapulted my consciousness into a realm unknown, unfamiliar and light years beyond the present time. Either my body and mind merged, or I was unaware of any separateness. The details of this aspect of the experience are fuzzy, but somehow important. My consciousness was spinning, turning, traveling so fast that another realm was reached quickly yet farther away than many of the planets in our solar system. Without transition, a kind of destination or reality was experienced more than arrived at . . . After a few seconds that spanned the farther reaches of time, I knew, understood, experienced infinity for both a moment and for all time. The ending seemed appropriate to the experience, not abrupt but a logical sequence following from the experience. I was back in present reality, yet the intensity of the experience remained with me for over a day. An aura of light and power surrounded my entire being and gradually, slowly disappeared. . . . Parts of this experience are profound, others almost absurd. . . . [But] never has there been any doubt regarding the reality of this experience. The feeling of certitude remains; there is an existence after death! (Quoted in Averill 1999, p. 107-108).

These two experiences share much in common: suddenness, intensity, unity, catharsis, merger with a supreme being. In fact, the only major difference is that the second experience occurred while the woman involved was cleaning her bathtub! So can we claim that spiritual experiences are benefits of natural areas? Certainly!, provided that we also are willing to admit that they are benefits of bathtubs as well.

What this example suggests is the imperfect understanding we have of many of the supposed benefits and their tenuous linkages to natural environments. Spiritual experiences are relatively common in the U.S. (Greeley 1974). Often, they are underlain by a variety of psychological processes, such as coping with loss as in the first example. After these

processes have had the chance to operate, the immediate, actual experience can be triggered by any number of stimuli in any number of environments. Averill (1999) argues that most common triggers can be divided into four broad categories: (1) religious or meditation practices (e.g., meditation, prayer, attending religious services), (2) aesthetic objects, especially music or the grandeur of nature, (3) personal relationships like sharing intimacies or making love, and (4) creative work. Yet these are often merely the triggers, and do not necessarily reflect the processes that must be completed to render the experience "ready to happen."

So, if the relationship between spirituality and natural environments is so tenuous, why are we so ready to claim it as a benefit? The answer can only be that because we are tied to natural environments either through vocation or avocation, we are positively inclined toward virtually any argument that will enhance their status or relative importance. It is often self-interest that is at work in BBM rather than substantive, critical thought.

Conclusion

In the preceding sections we have taken BBM to task on a number of fronts; we would be remiss if we failed to point out some of its virtues. For all its faults, BBM has had substantial heuristic value; it has stimulated much research into particular kinds of benefits. This is true, in part, because it places proper emphasis on the outputs of the recreation delivery system; BBM correctly recognizes that simple counts of the numbers of users served are insufficient measures of these outputs. And, BBM correctly notes that the process by which these benefits accrue is complex.

Similarly, the fundamental premise of BBM is quite sound: People can express reasons for participating in recreation. They can articulate goals, hopes, and aspirations; and recreation activities serve important functions in their lives. But it is when we convert these goals, aspirations, and functions into benefits that we begin to encounter trouble. It is when we determine the benefits for someone else, when we decide which benefits should be managed for and which should not, that we begin to anoint ourselves as priests (Lowi 1986). It is also when we assume that benefits are the product of causal systems, easily observed by all who will pay attention, that we remove people from the discourse about what is good and beneficial. Benefits, then, become ideal typical constructs that have resonance for some, but which exclude the interest of others.

While we have identified a variety of problems with it, BBM's most crucial flaw may be its focus on bringing us the "good news"--that we in the management community are the ones who are responsible for producing these benefits; that our activities and areas are the ones ultimately responsible for making people's lives rewarding and accomplishing major social goals such as trade deficit reduction. The priesthood's mantle can be alluring, especially when backed by the aura of science. Yet BBM's

optimism may be useful only in bringing the message to the already converted. To those who are skeptical that a day's picnicking can lead to lower trade deficits, BBM's claims may seem exaggerated and easily dismissed. We believe recreation management may be better served by a more realistic, limited view of both benefits and costs than BBM currently provides.

If BBM is flawed, then what alternatives exist for management? Perhaps the primary alternative is simply to return to management for specific activities. In most instances, it should be perfectly sufficient to manage for hiking or developed camping, or swimming, or horseback riding, provided that quality recreation experiences are essential to a well-managed system and that consultation with users is a necessary adjunct of quality. In this way, many of the components and concerns of BBM could be incorporated into management in a much more straightforward way.

A second alternative to BBM could be sense of place management. In any given location, a series of recreation experiences, however fine, will ultimately tend to be average. Consider Christmas as an example: Although we may strive diligently to make each upcoming Christmas the "best ever," ultimately some will be above average and others will be below, but most will simply be average. And so, too, with recreation experiences; that is the simple mathematics of any series. Management has no ability to control for this or for many other aspects of the experience (Kelly 1993). What can be done is to try to differentiate one area from another so that sense of place plays a maximum role in the experience.

Ultimately, it would be nice if BBM could be proven or disproven. Unfortunately, it is simply too vague and contains too many concepts to permit any realistic tests. It is, in effect, science under the lamp post--monitoring the values of a society that happens to be illuminated at a given time, but ignoring the dynamic processes whereby value and benefit are constituted through social discourse. On that basis, we might do better to simply proceed with a careful analysis of both an area and the visitors to it, their characteristics, values, goals, and management preferences, without reference to any overarching framework. Listening carefully to visitors remains the best possible form of recreation management.

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INTENSITY AND EXTENSITY OF RECREATION PARTICIPATION IN LIGHT OF THE MEAN SCORES ON THE LEISURE RESOURCEFULNESS SCALE

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Abstract: Individual participation in recreation activities was assessed on a daily, weekly, monthly, and annual basis. Recreation activity participation reported in this study is very similar in kinds and characteristics of activities participated in across the U. S. in other studies. When compared with the five subscales of the Leisure Resourcefulness Scale no relationship was found to exist, suggesting that other structural properties of recreation participation may serve as linkages with leisure resourcefulness.

Terms Used in This Research

Leisure Repertoire--the number and kind of leisure and recreation activities that satisfy an individual's leisure lifestyle.

Leisure Lifestyle--one's mode or manner of expression in leisure time.

Leisure Resourcefulness--knowing and being able to make a meaningful life for oneself within the realities of one's own existence, and being able to or knowing how to change those realities (Rapoport & Rapoport, 1975).

Leisure Resources--time, space, skill, knowledge of leisure, companions, equipment, money, and attitude toward leisure.

Leisure Socialization--a process by which an individual learns and internalizes leisure knowledge, skills, values, experiences, and motives in a manner that is personally satisfying and socially acceptable.

Leisure Intensity--the frequency of participation in leisure and recreation activities.

Leisure Extensity--the number of leisure and recreation activities in which one participates.

Introduction

This research is an extension of previous research on the Leisure Resourcefulness Scale (Ricciardo, 1996). The LRS was developed with the aim of identifying individuals who exhibit either higher or lower scores for leisure resourcefulness as evident by their scores on the LRS. Presumably those with higher degrees of leisure resourcefulness are better able to identify their own physical, mental, social, and spiritual or aesthetic needs at a given life cycle stage than individuals who are less resourceful in their leisure. The present study is a social-psychological examination of leisure, and it, too, follows the work of Rapoport and Rapoport (1975). These researchers emphasized the study of the individual over the individual's life span within the context of the family to understand leisure phenomena. The present study is an examination of an individual's perception of his/her leisure resourcefulness as measured by attitudes towards the following five subscales of the LRS: leisure time, leisure knowledge, leisure attitude, leisure companions, and leisure equipment. Concurrently, structural properties of recreation participation: intensity and extensity of recreation participation are examined, that is, the frequency and the breadth of participation. The theoretical framework for structural properties of recreation participation follows research by Cheek (1978). In the present study, it is conjectured that more frequent recreation participation and more breadth of participation are associated with higher degrees of leisure resourcefulness. If so, leisure service providers could plan and provide leisure activity and leisure education programs that maintain and/or enhance their client's leisure lifestyles and contribute, over time, to one's leisure socialization. The net result would be higher life satisfaction in leisure, particularly so considering the multiple and complex needs of increasingly diverse user populations.

Method

Over the course of four semesters during the 1997-98 and 1998-99 academic years, student volunteers in both recreation major and nonmajor courses were asked on one occasion to distribute two self-administered questionnaires to persons in their home communities. These individuals must be 18 years of age or older and not known to be students. The data collectors were instructed to wait without comment for the respondents to complete each questionnaire. The survey resulted in 91 completed questionnaires. Background data of the respondents are provided in Table 1. Almost half of the respondents are from 18 to 29 years of age, most of whom are Caucasian. Half of the sample population is male. Nearly half are single and have some college or a college degree. Twenty-five percent are in professional or technical occupations and an almost equal percentage are in sales or service occupations. Twenty-three percent earn from \$25,000 to \$34,999 a year with approximately eight- percent earning over \$65,000.

Table1. Socio-Demographic Data of the Sample Population

Sex:	N	%		Occupation:	N	%
Male	45	49.5		Professional/Technical	23	25.3
Female	46	50.5		Managerial	11	12.1
				Clerical	8	8.8
Total	91	100.0		Sales	10	11.0
				Craftsman	3	3.3
Age:				Service	13	14.3
18-29	43	47.2		Laborer	6	6.6
30-49	33	36.3		Housewife or Househubby	4	4.4
50-70	15	16.5		Student	9	9.9
				MD	4	4.4
Total	91	100.0				
				Total	91	100.0
				Annual Income:		
Ethnicity:				Less than \$5,000	9	9.9
Caucasian	75	82.4		\$5,000 to \$14,999	10	11.0
African-American	8	8.8		\$15,000 to \$24,999	9	9.9
Asian	3	3.3		\$25,000 to \$34,999	21	23.1
Hispanic	1	1.1		\$35,000 to \$44,999	11	12.1
Other	4	4.4		\$45,000 to \$54,999	10	11.0
				\$55,000 to \$64,999	5	5.5
Total	91	100.0		Over \$65,000	7	7.7
Marital Status:				Total	91	100.0
Single	42	46.2				
Married	32	35.2		Living Status:		
Widowed	2	2.2		Live alone	19	20.9
Divorced	11	12.1		Live w/wife/husband	26	28.6
Separated	2	2.2		Live w/friend	17	18.7
MD	2	2.2		Live w/parent	12	13.2
				Live w/family other than parents	1	1.1
Total	91	100.0		Live w/guardian	3	3.3
				Other	6	6.6
Education:				MD	2	2.2
Some high school	7	7.7				
High school grad	19	20.9		Total	91	100.0
Tech/vocational school	5	5.5				
Some college	22	24.2		Years at Present Address:		
College graduate	25	27.5		1 to 2 years	28	30.8
Grad/Professional school	11	12.1		3 to 10 years	26	28.6
MD	2	2.2		11 to 20 years	17	18.7
				21 to 35 years	16	17.6
Total	91	100.0		MD	4	4.4
State of Health:				Total	91	100.0
Excellent	25	27.5				
Good	55	60.4				
Fair	10	11.0				
Poor	0	0.0				
Total	91	100.0				

The data collection instrument was divided into three sections: the first section consists of a variety of recreation activities: active-passive, cultural-noncultural, and outdoor-indoor. The selection of recreation activities was based on the NORC study of 1973 as reported in Cheek and Burch (1976) and Ricciardo (1996). Section II contained the five subscales of the Leisure Resourcefulness Scale, and Section III asked the respondent to provide background information.

The Leisure Resourcefulness Scale (Ricciardo, 1996) was developed as a diagnostic tool to evaluate the relative placement of respondents on a continuum from a hypothetical higher to lower degrees of leisure resourcefulness. It consists of five subscales measuring leisure resources: leisure time, leisure knowledge, leisure attitude, leisure companions, and leisure equipment. Each subscale consists of ten items each item measured on a

five-point scale from strongly agree (1) to strongly disagree (5). Examples of items in the leisure time scale are: I try not to let other things interfere with my free time; I value my free time; and I carefully plan my free time. Items in the leisure knowledge scale are: I usually know what I want to do in leisure; I know where to go for information about leisure; and I know a lot of things to do in leisure. Leisure attitude: I feel refreshed when I am at leisure; I look forward to doing things I like to do; and leisure is a necessary part of my life. Leisure companions: I have friends to do most anything I want to do in leisure; my friends give me great satisfaction in leisure; and my friends are almost always available for leisure. Leisure equipment: I have equipment to do most anything I like to do; my equipment is always available for use; and my equipment is in good condition. Results of the Cronbach's Alpha test for reliability of the LRS are provided in Table 2.

Table 2. Reliability Coefficients for the Leisure Resourcefulness Scale

LRS Sub Scales	Standardized Item Alphas
Leisure Time	.78
Leisure Knowledge	.88
Leisure Attitude	.83
Leisure Companions	.89
Leisure Equipment	.81

Results

Recreation activity participation on a daily, weekly, monthly, and yearly basis are provided in Table 3. Activity participation on a daily basis may be characterized as mostly sedentary, at home, low cost, social, and readily accessible. As activity participation progresses in intensity from daily participation to yearly, activity participation required greater leisure resource commitments of, for example, time, knowledge, and funds. Moreover, there is a greater expenditure of effort to access leisure settings, for example, swimming, picnicking, amusement parks, theaters, museums, and zoos. Recreation spaces changed from home settings on a daily basis to predominately dedicated public recreation spaces on an annual basis.

Recreation activity participation is very similar to the NORC, 1973 findings reported in Cheek and Burch (1976) as representative of adult participation in recreation across the U. S. Indeed, except for two recreation activities of just sitting and relaxing and jogging, all of the remaining recreation activities are the same as those reported in the

NORC, 1973 study. Thus the empirical patterns of recreation participation persist over time and lend itself to further empirical testing of additional structural properties, as temporal patterns, sequencing, rules, likes and dislikes associated with engagement, duration, etc. Kelly (1999) also reported similar kinds of recreation activities in his studies of adult recreation participation in the U. S. Ranked in order of importance to the respondents in his studies were: affection and intimacy, informal conversation, activity as a couple (talking, walking, shopping, etc.), outings and social events, visiting family and friends, playing with children, reading for pleasure, watching TV, outdoor sports, and eating out.

Table 4 provides descriptive statistics for intensity and extensity of recreation participation. The average number of recreation activities adults participated in daily is four, increasing to seven activities annually among a sample population that is equal in numbers for gender, nearly half who are below the age of 30, and approximately half who are single. Sample respondents reported participating in an average of approximately 20 recreation activities annually.

**Table 3. Rank Order of Intensity of Recreation Participation:
Every Day, Every Week, Every Month, and Every Year**

Recreation Activity	Rank Order of Intensity of Recreation Participation			
	Every Day	Every Week	Every Month	Every Year
Watching TV	1			
Listening to music	2			
Just sit and relax	3	10		
Read a newspaper	4	3		
Read for pleasure	5	5	7	
Visit friends and relatives	6	1		
Drive for pleasure	7		5	
Walk for pleasure	8	6	3	
Jogging	9			
Dining out	10	2	4	
Go to church		4		
Cook for pleasure		7	10	
Go to a bar		8	6	
Window shop		9		
Go to movies			1	9
Play table games			2	7
Play softball			8	
Arts and crafts			9	8
Visit Amusement Park				1
Go to theater				2
Go to museum				3
Go to zoo				4
Swimming				5
Picnicking				6
Bicycling				10

Table 4. Descriptive Statistics for Intensity and Extensity of Recreation Participation

Intensity of Participation	Mean*	Std. Deviation
Every Day	3.95	1.92
Every Week	4.93	2.45
Every Month	4.80	2.57
Every Year	6.76	3.33
Extensity**	20.45	4.71

* The average number of recreation activities participated in every day, every week, every month, and every year.

** The average number of recreation activities participated in regardless of intensity of participation.

Viewing the commitment of leisure resources for participation in recreation activities among the sample population, the question remains as to whether or not intensity of recreation participation relates to leisure

resourcefulness as measured by the Leisure Resourcefulness Scale. Table 5 shows correlations of intensity of recreation participation with the five sub scales of the LRS.

Table 5. Intensity of Recreation Participation in Light of Mean Scores on the LRS

LRS Subscales	Every Day	Every Week	Every Month	Every Year
Leisure Time	-.143	-.149	-.010	.087
Leisure Knowledge	-.175	-.131	-.049	-.030
Leisure Attitude	-.260*	-.069	-.012	.114
Leisure Companions	-.067	-.409**	-.169	.087
Leisure Equipment	-.253*	-.084	-.076	.186

*Significant at .05 level.

**Significant at .01 level.

LRS Sub Scales were coded: 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, and 5=strongly disagree. Intensity of Recreation participation was coded: 1=every day, 2=every week, 3=every month, and 4=every year.

No relationship is evident between intensity of recreation participation and the LRS. In other words, intensity and the LRS vary independently suggesting that rather than one's degree of resourcefulness per se, intensity may vary with other structural properties related to participation as time, season, availability of materials, and proximity to

resources. However, correlations do exist between intensity and extensity of recreation participation as shown in Table 6. Significant correlations indicate that as intensity of participation changes from weekly to yearly, the respondent's extensity or breadth of recreation participation also increases.

Table 6. Extensity of Recreation Participation in Light of Mean Scores for Intensity of Recreation Participation

Intensity of Participation	Extensity of Participation
Every Day	.067
Every Week	.440*
Every Month	.597*
Every Year	.588*

* Significant at the .05 level

Conclusions

The research question was to examine the relationship between intensity and extensity of recreation participation in light of the mean scores on the Leisure Resourcefulness Scale. No relationship was found to exist among the sample population. The implication is that recreation participation must be examined in other contextual frameworks, for example, temporal and conditional aspects and resource availability. These additional variables may serve as linkages between intensity and extensity and the degree of one's leisure resourcefulness.

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THE RELATIONSHIP BETWEEN QUILTMAKERS' LEVEL OF DEVELOPMENT AND PARTICIPATION IN OTHER LEISURE ACTIVITIES

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Abstract: This study examined quiltmakers' level of development in relationship to the number of leisure activities in which they participated. Continuance and discontinuance behavior was also examined in light of these variables. Although there was no significant relationship between the mean number of other leisure activities and level of quilting development, mean scores did tend to decline from beginners to experts and increase again for "post-experts." Furthermore, replacers and adders tended to participate in more leisure activities than continuers, while quitters and specializers tended to participate in less. Active vs. inactive behavior also seemed to be related to level of development: replacers and quitters tended to be at the beginning stages of development while continuers, adders, and specializers tended to fall in the middle categories. Finally, level of development was shown to be specific to an activity and not to a person. In other words, an individual could

Introduction

Both theories of specialization (Bryan, 1979) and amateurism (Stebbins, 1979; 1992) focus on the growth, progress, and development of participants in leisure activities. In his theory of specialization, Bryan (1979) proposed that people approach sports or hobbies differently depending on their stages of development. These levels, ranging on a continuum from novice to specialist, are based on a function of participants' time, money, equipment, skill, and psychic commitment to the activity. Focusing particularly on the commitment element, Stebbins (1979, 1992) studied "serious leisure" in art, entertainment, science, and sport. His theory of amateurism characterized the *dabbler* as progressing to *novice*, *amateur participant* or *amateur devotee*, *professional*, and *post-professional* by going through various stages of progression/retrogression: beginning, development, establishment, maintenance, and decline.

By using the word "decline" for his final stage, Stebbins (1992) paints a picture of someone who has deteriorated (i.e., is "over-the-hill" in that activity.) Specifically, he hypothesized that only some aspects of development should decline during this period of retrogression: mainly the physical factors, not appreciation for or knowledge of the activity. However, by referring to the existence of a "post-professional," Stebbins seemed to be suggesting that individuals may, in fact, decline by choice. For instance, an "elite expert" may choose to participate in the activity less frequently, or lose interest in or commitment to it,

perhaps because he or she perceives a lack of challenge and becomes bored. (Michael Jordan, for example, temporarily retired from professional basketball to undertake baseball as his new challenge.) In support of this, Todd (1998) found that measures of equipment owned, knowledge, experience level, perceived skill, participation, and commitment were all related to level of development in a curvilinear fashion. Each of these factors increased significantly from beginner to expert, followed by a decline for "post-expert" quiltmakers.

Secondly, "development" naturally suggests participants age with time as they progress/retrogress through various stages. As Iso-Ahola and others (1984) point out, however, age is not necessarily correlated *across individuals* within an activity; one can begin a new activity at any point in time, not just childhood or youth. Todd (1998) subsequently demonstrated that level of development was not strongly related to age. Although mean age did tend to increase from beginner to post-expert categories of quilting, the ranges of ages and standard deviations were quite large for each level of development.

In the case of the "over-the-hiller," Iso-Ahola (1980) proposed that if an individual repeatedly fails or continues to perform poorly in an activity, resulting feelings of helplessness lead the individual to make dispositional and/or situational attributions of causality. No matter who or what is blamed, however, the resulting behavior is to participate or not participate (i.e., continue or discontinue participation) in the activity again. Studies of continuance/discontinuance in leisure (e.g., Jackson & Dunn, 1988) have classified subjects into one of four categories: *replacers* (those who substituted another activity for the current one), *quitters* (those who stopped participating in the activity and did not start any others), *adders* (those who continued to participate in the activity and also started another), and *continuers* (those who continued participating but did not add other activities). It would seem likely that as level of development increases, the percentage of continuers would increase due to increased importance and commitment given to that activity. Some continuers, in fact, may actually drop other activities as they specialize in that activity. The following two quotes illustrate how this concept applies to quiltmakers:

Since most quilters generate more quilt designs and ideas in one day than they could sew up if they lived to be 100, we usually meet very few "former" quilters. ... Quilters, once hooked on the feeling of fabric and thread, tend to stay hooked for life, usually to the exclusion of all other activities.... (Nehring, 1994, p. 39)

Like many other quilters, I first tried my hand at a multitude of other crafts. I used to flit from macramé to needlepoint to crochet, but none of these has been anything more than a hobby – certainly not anything which inspired me to want to

make art. Then seven years ago I was bitten by the quilting bug, and since then nothing has been the same! ... Why does quilting inspire such a passion in me that I want to make it my life's work? (Behar, 1991, p. 6)

It follows, then, that an individual may be at different levels or stages of development in different activities. For instance, one may simultaneously be a beginning dabbler in one activity and a specialized amateur in another. By definition, however, a specialist (characterized by high levels of commitment and experience in an activity) will likely be participating in fewer activities than a generalist or novice. In other words, as level of development increases, the number of activities participated in should decrease.

Stebbins' (1992) recognition of retrogression, a fifth category labeled "decline," and the existence of a "post-professional" suggests that Bryan's (1979) continuum of specialization does not account for what eventually happens to specialists once their levels of skill and commitment begin to deteriorate. The number of activities participated in may not continue to decline. Particularly in the case of the expert or even "post-expert," the number of activities may decline (*quitter*), but they may also remain the same (*continuer* or *replacer*), or increase (*adder*).

Purpose of the Study

This study examined quiltmakers' level of development in relationship to the number of leisure activities in which they participated. It was hypothesized that as level of development increased from beginner to advanced, the number of current leisure activities would decrease. However, it was expected that there would be no significant relationship between the number of activities participated in during the expert and "post-expert" stages of development; the number could increase, decrease, or stay the same.

Because the dynamics of this number interact directly with behaviors of adding, dropping, or replacing activities, the second hypothesis focused on continuance/discontinuance behavior. It was expected that, when compared to continuers, adders and replacers would tend to participate in more leisure activities while specialists and quitters would tend to participate in fewer activities.

Third, the percentage of continuers was expected to be directly related to level of development. Specifically, beginners and "post-experts" were expected to exhibit a tendency to replace or drop quilting. Intermediates and advanced were hypothesized to continue their current activities or specialize in quilting most often, and experts were expected to add new activities or continue their current ones.

Fourth, in order to demonstrate that development is situation specific, not a general "trait," it was hypothesized that if a quiltmaker participated in another leisure activity,

level of development could be different for the two activities. For instance, he or she could be a beginning quilter but an advanced tennis player.

Like Scott's and Godbey's (1994) study of contract bridge players, this study extended specialization beyond outdoor recreation and amateurism beyond sports. By focusing on the leisure activity of quilting, this study also allowed more in-depth investigation of women and of age groups not generally characterized as progressing, growing, and developing. Due to the uniqueness of the study, partial funding for this research was obtained from a grant awarded by The National Quilting Association, Inc.

Methods

Through the use of a convenience sample, data were gathered from a wide geographic range of quiltmakers representing a cross-section of all levels of development. A 9-page mailback questionnaire was distributed to quiltmakers during a 5-month period (May through September 1996) using one of the following methods: in person (at quilt guild/club meetings or at quilt shops) or by mail. Follow-up reminder postcards were mailed to guild members who had not responded within one month's time. Five primary sources of active quiltmakers (two quilt guilds, four quilt shops, three informal quilting groups/clubs, nationally known quiltmakers, and references from study participants) and three sources of potentially inactive quiltmakers (former guild members, references from study participants, and an internet bulletin board request) were utilized.

On the instrument, respondents were asked to list any recreation/leisure activities or hobbies in which they had participated (in addition to or other than quilting) in the past 12 months. By asking respondents in an open-ended manner instead of prompting them with the use of a check-off list, it was hoped that respondents would naturally tend to list the activities that they participated in most often and/or identified with most.

In order to establish continuance/discontinuance behavior, respondents were asked if they had quilted within the past 12 months. Quiltmakers answering "no" were classified as inactive quiltmakers. By asking respondents a series of three additional questions, types of active and inactive quiltmakers were identified. *Replacers* were distinguished as inactive quiltmakers who indicated "yes" when asked if another activity had replaced quilting in their lives; they were also considered to be replacers if inactive quiltmakers answered "no" to this question but "yes" when asked if they had started at least one brand new activity within the last 12 months. Inactive quiltmakers who were *quitters* answered "no" to both of these questions. Active quiltmakers, on the other hand, could be classified as either *continuers*, *adders*, or *specializers*. While adders had added brand new activities in the past year, continuers had not. Not only had specializers not added any new activities, they also answered "yes" when asked if they had stopped participating in another activity due to quilting; continuers answered "no."

Level of development was self-determined by each participant by selecting one of six categories ranging from beginner to "post-expert" for quilting. As previously mentioned, these categories had been shown to adequately reflect factors of equipment owned, knowledge, experience, perceived skill, participation, and commitment (Todd, 1998). It was then assumed that self-selected level of development would sufficiently represent these factors in any leisure activity, not just quilting. Thus, participants were asked to identify one other leisure activity in which they were currently participating (besides quilting) and indicate the current level of development for that activity. Response categories were the same as those used for quilting: *beginner, advanced beginner, intermediate, advanced, expert – mastering perfection, and "post-expert" – not the expert I once was.* However, previous analysis revealed that the first two stages (beginner and advanced beginner) never differed significantly from each other when comparing equipment owned, knowledge, experience, perceived skill, participation, or commitment for quilters (Todd, 1998). Based on this finding, these first two categories of development were collapsed into one (labeled "beginner") for both quilting and the other leisure activity in all further analyses.

One-way analysis of variance was used to determine if a difference existed among mean number of activities participated in during the last twelve months by level of development. To compare the differences between mean number of activities for each pair of developmental levels, Scheffé's test was used as a post hoc test if the F-value was significant ($p < .05$). One-way analysis of variance followed by Scheffé's post hoc test were also applied when comparing mean number of leisure activities by continuance/discontinuance category. Chi-square analysis was then used to compare the frequency of continuance or discontinuance behavior (continuer, specializer, adder, replacer, dropper) by each level of development. Finally, chi-square analysis was used to compare frequencies of developmental levels in quilting and another leisure activity.

Results

A total of 459 out of 615 quilters returned completed questionnaires, resulting in a 75 percent response rate. Approximately 78 percent of all potentially active quilters (417 out of 538) returned surveys compared to 55 percent of potentially inactive quilters (42 out of 77). This lower response rate is not unusual, especially when the respondent is asked to participate in a study focused on an activity which is potentially no longer of interest. A total of 27 different states and 4 foreign countries were represented, with respondents' ages ranging from 23 to 93 (mean = 53). Not unexpectedly, 97 percent of the respondents were female.

As a whole, respondents participated in an average of 4.4 leisure activities in addition to (or other than) quilting in the past 12 months. Ten respondents noted that quilting was the only leisure activity they had done. Answers therefore ranged from 0 to 14 activities, with the median falling at 4 and the mode at 5 (85 respondents or 18.5 percent). A total of 20 respondents had missing data.

In order to get an indication of the types of leisure activities respondents engaged in, the first five activities listed by each respondent were recorded, resulting in a total of 1659 responses. As a whole, respondents had participated in 83 different leisure activities in the past 12 months. As shown in Table 1, the activities listed most often included other needlecraft (215 responses, 50 percent of all cases or 13 percent of total responses), reading (40 percent of all cases), gardening (32 percent), sewing (28 percent), and walking/hiking (24 percent).

Table 1. Participation in Other Leisure Activities: Five Most Popular Answers

Activity	# of responses	% of all cases (n=429)	% of total responses (n=1659)
Other needlecraft	215	50	13
Reading	170	40	10
Gardening	136	32	8
Sewing	119	28	7
Walking/hiking	103	24	6

While a vast majority of respondents (430 or 94 percent) were classified as active quilters, only 24 respondents had not quilted within the past 12 months and were thus identified as inactive quilters. Respondents were further subdivided into two types of inactive and three types of active quilters. (Due to missing data, 30 respondents could not be classified, but the remaining 429 respondents were placed into one of the five categories.) A total of 23 inactive quilters were identified as either replacers (8 respondents) or quitters (15) while the remaining 406 active quilters were categorized as either continuers (286), specializers (62), or adders (58) (see Figure 1).

As shown in Figure 2, nearly one-half (214) of the respondents described themselves as intermediate quilters. Another quarter (128) labeled themselves as advanced and 18 percent (80 respondents) categorized themselves as beginners. Just 4 percent (17) of the respondents considered themselves to be experts and 2 percent (8) were "post-experts."

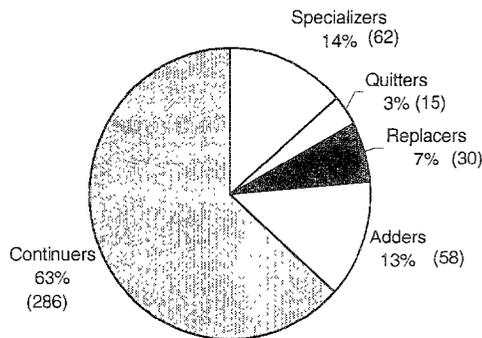


Figure 1. Continuance/Discontinuance Behavior

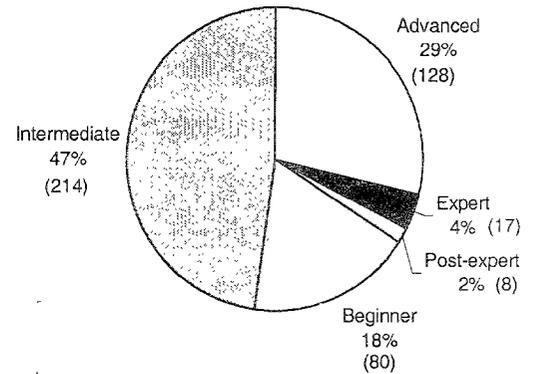


Figure 2. Level of Quiltmaking Development

When testing the first hypothesis, one-way analysis of variance yielded no significant relationship between the mean number of other leisure activities and level of quiltmaking development ($F = .23, p = .92$). However, as shown in Figure 3, although mean scores did tend to hover around 4.4 for the first three developmental levels of quiltmakers, the average number then declined to 3.9 for experts and increased again to 4.8 for "post-experts." Thus, although this first hypothesis was not statistically supported, the pattern of means was in the expected direction.

When comparing mean number of other leisure activities by continuance/discontinuance category, the F-value calculated by one-way analysis of variance did approach significance ($F = 2.02, p = .09$). As proposed in the second hypothesis, replacers and adders tended to participate in a greater number of other leisure activities (5.9 and 4.8, respectively) than continuers (4.3 activities), and quitters and specializers tended to participate in less (4.2 and 4.0, respectively). (See Figure 4.)

The third hypothesis predicted that the percentage of continuers would be directly related to level of

development from beginners to "post-experts." However, expected cell frequencies were too low (52 percent of the cells had expected frequencies of less than 5) to use chi-square analysis with any confidence. Despite small cell sizes, the cross tabulation of level of quiltmaking development by subcategory of continuance/discontinuance behavior displayed support for the hypothesis (Table 2). As predicted, intermediates tended to continue quiltmaking or specialize in quiltmaking by dropping other activities. Advanced quiltmakers also followed this pattern, but they tended to take on additional leisure activities as well. Partially supporting the hypothesis, beginners and "post-experts" tended to continue quiltmaking or quit, but beginners also tended to add other leisure activities. Experts tended to be continuers, with a few specializers and adders. Notably, no experts were categorized as replacers or quitters. Looking at it from a different angle, replacers and quitters tended to be at the beginning stages of development while continuers, adders, and specializers tended to fall in the middle categories of development. Again, small cell sizes limit any conclusive discussion, particularly when considering numbers of replacers.

Figure 3. Number of Other Leisure Activities by Level of Quiltmaking Development

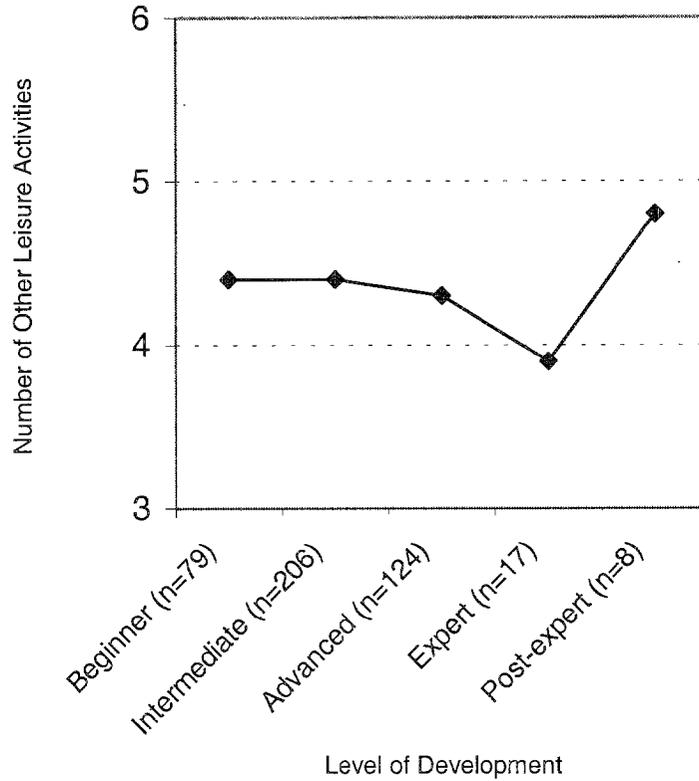


Figure 4. Number of Other Leisure Activities by Continuance/Discontinuance Behavior

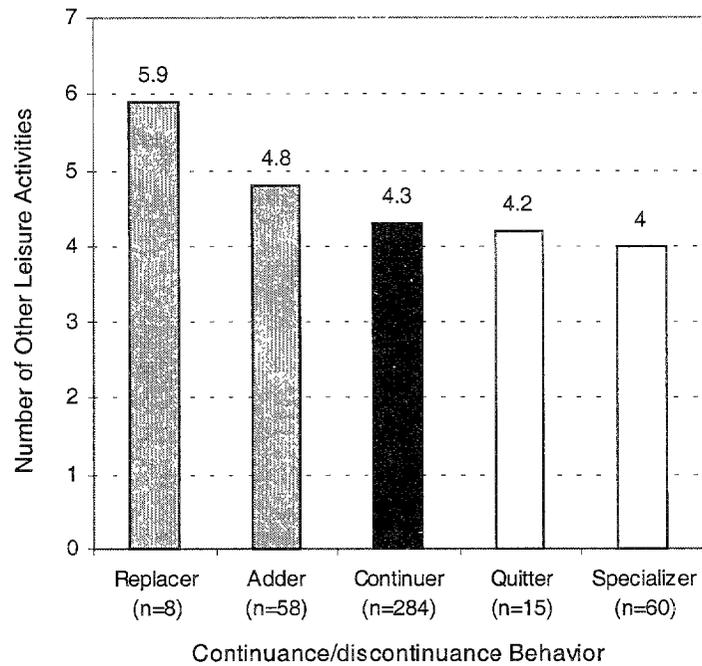


Table 2. Level of Quiltmaking Development by Continuance/Discontinuance Behavior

	Count Row % Col. %	Quilting Level					Row Total
		<i>Beginner</i>	<i>Intermed.</i>	<i>Advanced</i>	<i>Expert</i>	<i>Post-expert</i>	
<i>Replacer</i>	3	3	1	0	1	8	
	37.5 3.8	37.5 1.5	12.5 0.8		12.5 12.5	1.9	
<i>Quitter</i>	9	1	2	0	2	14	
	64.3 11.4	7.1 0.5	14.3 1.6		14.3 25.0	3.3	
Cont./ Discont. Behavior <i>Continuer</i>	47	140	82	12	4	285	
	16.5 59.5	49.1 70.7	28.8 66.7	4.2 70.6	1.4 50.0	67.1	
<i>Adder</i>	14	22	19	2	0	57	
	24.6 17.7	38.6 11.1	33.3 15.4	3.5 11.8		13.4	
<i>Specializer</i>	6	32	19	3	1	61	
	9.8 7.6	52.5 16.2	31.1 15.4	4.9 17.6	1.6 12.5	14.4	
Column Total	79 18.6	198 46.6	123 28.9	17 4.0	8 1.9	425 100.0	

Number of missing observations: 34

The fourth hypothesis postulated that level of development could be different for the same quiltmaker in a second activity. Chi-square analysis was used to compare developmental levels in quiltmaking and another leisure activity. However, when five stages were used to characterize levels of development for both activities in the analysis, the number of cells with an expected frequency of less than 5 was unacceptable. Nonetheless, examination of the cross-tabulation of the two levels of development did show that individuals could be at different stages of development at the same time. While approximately one-third of the respondents (130 of the 398 valid responses) did select the same level of development for quiltmaking

and another leisure activity of their choice, the remaining 268 respondents responded that they were at either a higher or lower level of development in the other activity. Therefore, the stages of development for the other leisure activity were recoded into two categories: level of development in the other activity was either *equal to* or *not equal to* level of quiltmaking development. When the categories for the other leisure activity were collapsed in this fashion (see Table 3), cell frequencies were of sufficient size to use chi-square analysis without violating assumptions of the test. The resulting chi-square value of 25.29 was significant ($p < .01$). This hypothesis was therefore statistically supported.

Table 3. Level of Quiltmaking Development by Level of Development in Another Leisure Activity

	Count Col. %	Quilting Level					Row Total
		<i>Beginner</i>	<i>Intermed.</i>	<i>Advanced</i>	<i>Expert</i>	<i>Post-expert</i>	
Other Activity Level <i>Equal to Quilting Level</i>	11	68	49	1	1	130	
	14.5	35.6	45.0	7.1	12.5	32.7	
<i>Not Equal to Quilting Level</i>	65	123	60	13	7	268	
	85.5	64.4	55.0	92.9	87.5	67.3	
Column Total	76 19.1	191 48.0	109 27.4	14 3.5	8 2.0	398 100.0	

Chi-square = 25.29 ($p < .01$)

Number of missing observations: 61

Conclusions and Implications

First, based upon the findings and within the limitations of this study, no strong relationship exists between level of development and number of other leisure activities in which one participates. Although no significant relationship was found, the means did tend to follow a pattern. Specifically, the number of activities declined only slightly from beginner to advanced, dropped for expert, and increased again for "post-experts." Experts thus seem to be most likely to specialize in quilting by committing more of their time and energy to this activity and less to other leisure activities. In the "post-expert" stage, however, the number of other leisure activities in which quiltmakers participate tends to increase, and quilting no longer seems to monopolize their time and attention.

The cause for this relationship is unclear. Perhaps a decline in level of quilting development (e.g., due to arthritis or loss of eyesight) causes the individual to seek stimulation and/or challenge in other leisure activities. On the other hand, perhaps quiltmakers start to participate in more leisure activities at the end of the expert stage due to boredom or because quilting has become "work," losing its intrinsic appeal for participants. By participating in more leisure activities, time and energy may be taken away from quilting, causing their level of development in this activity to decline. Another possible explanation may be that, for some, the "post-expert" stage coincides with other changes in life stages (e.g., retirement), creating freedom to pursue additional activities.

A second finding showed that participation in additional leisure activities is more strongly related to continuance/discontinuance behavior. Although this finding was not significant to an extremely high degree, the data helped logically operationalize a variety of continuance behaviors. By definition, *continuers* steadily participate in the same leisure activities over a 12-month period. In comparison, *replacers* and *adders* tend to participate in higher numbers of activities (which is logical if, by definition, they are undertaking new endeavors), while quitters and specializers participate in less (due, of course, to voluntary or involuntary attrition). Thus, this study reinforced conceptual definitions of continuance/discontinuance behavior by focusing on participation in other leisure activities.

Third, this study suggested that active versus inactive behavior seems to be related to level of development: quitters and replacers tend to be at the beginning and "post-expert" stages of development, while continuers, adders, and specializers tend to be at middle levels of development. Intuitively, it seems that beginners and "post-experts" should be the most likely to drop out of an activity. Since they have the lowest levels of knowledge, skill, experience, participation, commitment, and equipment relative to that activity, beginners may naturally have the most difficulty overcoming any initial constraints. Likewise, "post-experts," who are aware that they have deteriorated in all these categories, may prefer to leave while they are "at the top of their game."

In this study, many respondents started and stopped quilting over the years depending on their life circumstances. The following comments reflect these changes in priorities and commitments:

I found the comparisons with other activities difficult because I have never done only one thing. Nothing has "replaced" quilting for me. It's just that through the years the balance shifts. The reasons vary – other commitments, availability of opportunities or materials, my current enthusiasm, etc.

I began quilting in 1993 and completed 2 quilts, started a third, and gathered fabric and designed 2 more. I stopped quilting for about 1½ years while I got a second master's degree on the weekends, although I still thought about quilts, designed them, and attended Houston's International Quilt Show each year. I continued to buy books and some fabric. Last fall I began to quilt projects – pillows and a jewelry holder – as presents. I finished school this summer and have started on my unfinished projects again. I expect I'll pick up and put down quilting fairly steadily for many years!

I stopped quilting for nearly 10 years, after the birth of my third child, went back to college, got my degree, while working. Then began to work at a series of new jobs until I settled into my current position. I am now on family medical leave to care for my son who has cancer.... I have begun quilting once more to "put the pieces of my life back together" and keep my hands and mind busy.

The above comments echo Roach's (1986) findings that quilting often follows life rhythms, ebbing and flowing with one's stage in the life cycle. The role that constraints play in this process often determines whether discontinuing the activity is temporary or permanent. In this study, the farthest year back a respondent had stopped quilting was 1985; 15 of the 24 had stopped within the last two years. Of these 24 inactive quiltmakers, 22 indicated that they did plan to quilt again someday, with 14 hoping to start within the next year. Although a primary reason for respondents in this study to permanently cease participation in quilting tended to be a physical one (loss of eyesight), several respondents reported that they knew someone who permanently quit because of family tragedies or demands, or simply because of "lack of interest." One quiltmaker commented,

I'm delighted you are doing this. I believe it's an idea whose time has come. Several of us began to quilt at about the same time. I alone have continued. While I like it more and more, their interest waned, [and]

they no longer quilt. Some of them still enjoy coming to the Quilt Shows, even to meetings with me but do not quilt. It's a puzzle to me. Perhaps your work will explain it to me.

While this study did shed light on behaviors of continuance or discontinuance, small sample sizes limited the number and strength of conclusions concerning former quiltmakers. This in itself is an important finding. Less than 20 percent of the respondents marked that they even knew of a friend, relative, or acquaintance who had stopped quilting. It seems that quilting is an activity that many do not give up.

As a fourth finding, this study illustrated that level of development is specific to an activity and not to a person: an individual can be at one stage in quilting and at another stage in a different leisure activity. Interestingly, the results of this study specifically showed that for expert, "post-expert," and beginning quiltmakers, the developmental level for another leisure activity was highly unlikely to be equal to their level of quilting development. This seems to make intuitive sense. By definition, an expert has special skill or knowledge in one particular field and would not be expected to be an expert elsewhere. If "post-experts" are bored or disgruntled in that activity, they would tend to be beginners as they try new activities (and vice versa for beginners who are entering quilting as a result of being a "post-expert" in something else).

In addition to documenting that levels of development can vary from activity to activity, this study also supplied evidence that an individual may fluctuate or regress through the stages at various points in time. This is best illustrated by the following comment:

I taught myself to quilt over 25 years ago and developed a high degree of skill using hand techniques. Then I went through a period when I did little or no quilting. Now I am becoming active again – but using the new techniques – rotary cutting, quick piecing, flip 'n' sew, piecing by machine. I am learning and practicing new techniques, so my skills began at minimal again and are increasing.

This study has important implications for various socializing agents. If instructors, shop owners, managers, leisure counselors, and authors are aware of participants' developmental levels, perhaps they will be better able to facilitate participants' experiences, progress, and growth. Particularly in the beginning and "post-expert" stages of development, when they are most vulnerable to dropping out of an activity, participants can be shown possible strategies and solutions to help them overcome various structural, interpersonal, and intrapersonal constraints. Leisure counselors may be able to help "post-experts" discover new activities, or assist them in adapting in some way to continue participating in their current activity (e.g.,

by readjusting expectations). In all cases, it is critical that participants are able to seek and find satisfaction with their leisure, whether they specialize in one activity or dabble in many.

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SELF-EFFICACY PERCEPTIONS AMONG MID-LEVEL RECREATION PROGRAM MANAGERS

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Abstract: Self-efficacy is a term first proposed by Bandura (1977) which refers to "beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood & Bandura, 1989, p. 408). Self-efficacy has frequently been examined from an outdoor participant perspective (McGowan, 1986; Wright, 1983), but infrequently in a nonprofit management setting. The purpose of this study was to assess the influence that years of supervisory experience and the number of employees supervised have on YMCA Program Directors' general and task specific self-efficacy. A 3x3 ANOVA was used to determine the association between the self-efficacy of YMCA Program Directors and their years of experience and number of employees they supervised. Significance was found in 2 of the anticipated 4 areas of the study. The findings are similar to those suggested by Corder (1985) and McCall, Lombardo, and Morris (1988) in that a Program Director may have developed a feeling of an "earned" span of control where he or she is an actual survivor within the organization and has earned or inherited his or her employees. In addition, the reward of having a large number of employees may mean that the Program Director has shown the capacity of handling more responsibility through training employees, and has been rewarded with additional subordinates to supervise. Rejection of years of experience as an influence upon general and task specific self-efficacy was not expected. Findings have implications for organizational design and span of control issues within recreation organizations.

Introduction

Self-efficacy is a term first proposed by Bandura (1977) which refers to "beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood & Bandura, 1989, p. 408). More specifically, self-efficacy premises that individuals are constantly learning and through that learning gaining feelings about their perceived ability or inability to accomplish specific tasks.

Gist (1992) explains that "self-efficacy is a construct derived from social-cognitive theory - a theory positing a triadic reciprocal causation model in which behavior, cognitions and environment all influence each other in a dynamic fashion" (p. 184).

An important aspect of self-efficacy is the differentiation between efficacy expectations and response-outcome expectations. Efficacy expectation is the belief that one can successfully execute a given behavior required to achieve an outcome. Outcome expectancy, by contrast, is the assessment of an individual that a specific behavior will result in an expected outcome (Bandura, 1977). "The former is a belief about one's competence, the latter is a belief about one's environment. The importance of this distinction is that feelings of futility may result either from (a) low self-efficacy or (b) perceptions of a social system unresponsive to one's actions" (Gecas, 1989; p. 294). Even though one feels confident that he/she is enough in control of the environment to be assured that a specific behavior will lead to a desired outcome, feelings of empowerment may be frustrated because that same individual does not have confidence in her/his ability to produce the required behavior. Conversely, confidence in one's ability to produce behavior can be equally frustrated by the inability to control the outcome that behavior produces.

Self-efficacy has frequently been looked at from an outdoor participant perspective (McGowan, 1986; Wright, 1982), but infrequently in a nonprofit setting. The Young Mens Christian Association (YMCA) provides a unique opportunity to measure self-efficacy among a group of program directors in selected mid-western states. The Program Director position was selected because it is as close to a common mid-career programmer as exists in the YMCA structure. The required skills and responsibilities are often varied in nature, constantly changing, and difficult to describe in formal job descriptions (Summers, 1986). These individuals are often referred to as innovative idea people who are identifying ways of turning their ideas into new programs and services. Program Directors have varied responsibilities, but the classification of those responsibilities is identifiable.

The purpose of this study was to assess the influence that years of supervisory experience and the number of employees supervised have on YMCA Program Directors' general and task specific self-efficacy, as proposed by Bandura (1977). Self-efficacy was originally defined as a specific type of expectancy concerned with one's beliefs in one's ability to perform a specific behavior or set of behaviors required to produce an outcome (Bandura, 1977). The self-efficacy definition has been expanded to refer to "people's beliefs about their capabilities to exercise control over events that affect their lives" (Bandura, 1989, p.1175) and their "beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over task demands" (Bandura, 1990, p.316). Thus, self-efficacy judgments are concerned "not with the skills one has but with judgments of what one can do with whatever skills one possesses" (Bandura, 1986, p.391). In the example "I am good at completing program

reports" it is a level of confidence that enables people to perform at their fullest potential. Research on self-efficacy has generally supported a correlation between self-efficacy and performance. Individuals who have experienced a mastery of skills in new situations may feel efficacious when faced with other new situations.

The study was delimited to 200 full time Program Directors employed by the YMCA in the states of Indiana, Iowa, Illinois, and Nebraska. Each of the Program Directors was responsible for supervising full-time or part-time employees. The use of a self-reporting, 5 point Likert-type self-efficacy scale with answers ranging from strongly disagree to strongly agree was used to determine the presence of efficacy in YMCA Program Directors.

Methods

A self-efficacy questionnaire was distributed to Program Directors at YMCAs in four states. The questionnaire included a four-step mailing process (Salant and Dillman, 1994). The selection of the YMCAs for participation was based on three criteria: (1) presence of program directors in the organization; (2) program director responsibilities to include supervision of part-time and full-time staff; and (3) geographic location within the states of Illinois, Iowa, Indiana, or Nebraska.

Data collection was made during the summer of 1996. The instrument selected to measure the self-efficacy of YMCA Program Directors followed Saks (1994) process for the development of a task specific efficacy scale and additionally included a general self-efficacy scale developed and validated by Sherer, et. al. (1982). The survey was divided into two sections. The first section consisted of items designed to assess general self-efficacy and management task specific self-efficacy. The second section consisted of demographic information. A total of 26 task specific self-efficacy statements were determined as a result of the instrument development and pilot process. These statements covered issues of supervision, assessment, program development, implementation, evaluation, administration and marketing. The second section consisted of demographic information, including gender, age, education, length of full-time employment, span of control, budget accountability, and job responsibilities. The survey asked respondents to indicate agreement or disagreement with each item using a five point Likert-type scale.

Data analysis was completed through the use of the Statistical Package for the Social Sciences (SPSS). The responses were tallied for each of the two scales (task specific and general). Two primary forms of analysis were used. First, descriptive statistics were used to analyze the background and demographic data. Second, an analysis of variance procedure was used to analyze the significance of two dependent variables. The dependent variables of the analysis were general and task specific self-efficacy. The independent variables consisted of years of supervisory experience and number of employees supervised. Standard deviation and means were calculated for years of

experience as follows: 0-2 years, 3-6 years, and 7 or more years. Standard deviations and mean responses were calculated for groups indicating number of employees that the respondent supervises as follows: 1-10 employees, 11-25 employees, and 26 or more employees. A 3x3 ANOVA was used to determine the association between the self-efficacy of YMCA Program Directors and their years of experience and number of employees they supervised.

Results

Significance was found in 2 of the anticipated 4 areas of the study. The number of employees supervised does have an effect on specific and general task self-efficacy as measured in this study. Years of experience were reported as non-significant and did not appear to have an impact upon general and task specific self-efficacy. There was a significant difference in the number of employees supervised and general self-efficacy ($F=4.01$, $p=.020$). There was no significant difference in number of years YMCA supervisor experience and general self-efficacy ($F=2.45$, $p=.090$). There was no significant difference in the number of years of YMCA supervisory experience and task specific self-efficacy ($F=0.88$, $p=.419$). There was a significant difference in the number of employees supervised and task specific self-efficacy of YMCA Program Directors ($F=7.81$, $p=.001$).

Discussion

YMCA Program Directors, as reported in this study, who supervise large numbers of employees have greater reported self-efficacy than those who supervise a small number of employees. The findings in this study are similar to those suggested by Corder (1985) and McCall, Lombardo, & Morris (1988) in that a Program Director may have developed a feeling of an "earned" span of control where he or she is an actual survivor within the organization and has earned or inherited his or her employees. In addition, the reward of having a large number of employees may mean that the Program Director has shown the capacity of handling more responsibility through training employees, and has been rewarded with additional subordinates to supervise.

Another reason for high self-efficacy can be what organizational design researchers have been suggesting (Corder, 1985; Robbins & Coulter, 1996), that managers who supervise a large number of employees do not have the ability to micro-manage their staff so they must give responsibility to their workers. The workers will in turn feel rewarded by the additional responsibility and therefore feel more dedicated to their job and work to achieve the goals of the organization (McCall, Lombardo, & Morrison). If the goals of the organization are met, this makes the Program Director feel more supported which will in turn make them feel more successful and efficacious. The most effective organizations in the 1990's are relatively flat organizations whose managers have wider spans of control. In having a wide span of control the manager must supervise a larger number of employees thus giving the employees more decision making responsibilities. The

traditional, rigid, hierarchical organizations, whose resources are settled at the top, with not enough expertise close to the customer, have been replaced with flexible organizations where spans of control of 50 to 70 are not uncommon (Gomez-Mejia, et. al., 1995).

A flat organization has only a few levels of managers and emphasizes a decentralized approach to management (Gomez-Mejia, et. al., 1995). These organizations encourage the delegation of decision making to lower levels of management. The purpose of this structure is to create a rapid response to the customer's needs and to bring the decision making authority closer to the employee rather than the manager. The flat organization structure eliminates some of the boundaries that separate employees from each other in bureaucratic organizations "Boundaries that separate employees from managers and supervisors also break down in flat organizations, where there is a need for fewer managers because employees are empowered to make more decisions" (Gomez-Mejia, et. al., 1995).

The YMCA along with other recreation agencies offers a variety of diverse programs and services. As diversity of services increases, so does the ability for an organization to become flat and decentralized (Robbins & Coulter, 1996). Recreation facilities and programs are often geographically dispersed, decision making is flexible due to the nature of the job, and decisions related to the day to day operations are relatively minor. The findings support the notion that flat structures are most successful in organizations that foster a high level of employee involvement, involve managers supervising a large number of employees, and the nature of the job is customer focused (Robbins & Coulter, 1996).

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PLACE ATTACHMENT

DIFFERENCES IN PLACE ATTACHMENT AMONG ALLEGHENY NATIONAL FOREST USERS

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Abstract: This paper is based on a study of National Forest users and compares the level of place attachment among various users of the Hickory Creek Wilderness, the Hearts Content Scenic Area, the Hearts Content Recreation Area and surrounding landowners in the Allegheny National Forest. Specifically, visitors were asked about their level of attachment to the area using a 10-item place attachment index. The 10-item index was factor analyzed and revealed two distinct sub-dimensions, place dependence and place identity, and a single item, place indifference, that did not fit with either factor. The place attachment index and both sub-dimensions had very high reliabilities ranging from $\alpha=0.89-0.80$. Additionally, respondents were asked to answer a series of items measuring activity and frequency of participation. Finally, the relationships between the variables were examined. The results of this study showed a number of significant relationships between place attachment, trip purpose and support or opposition to wilderness management policies. There were significant differences in place attachment across user groups. For example, participants in more resource dependent activities tended to indicate higher levels of place attachment. Managers should consider giving particular attention to the most resource dependent users. Also, they should be aware certain user groups tend to be more attached and may warrant special consideration during planning processes.

Introduction

The concept of place attachment has been defined as the extent to which an individual values or identifies with a particular area or environment (Williams, Patterson, & Roggenbuck, 1994). The importance of understanding visitors' sense of place has been articulated by Genereux,

Ward, and Russell (1983). They indicated that the knowledge of how people internally represent the physical setting in which they carry out their lives may help us to understand things such as choices about where they go and what they do there. Special places, according to Low and Altman (1992), are places that have been given meaning through personal, group, or cultural processes, and vary in several ways, including scale, size or scope. To measure the concept of place attachment, researchers have typically asked visitors how they feel about a particular place. Some have found a positive relationship between number of visits to an area and place attachment (Havitz & Dimanche, 1990; Moore & Graefe, 1994).

Studies that have focused on sense of place have utilized a place attachment scale (Moore & Graefe, 1994; Williams, Anderson, McDonald, & Patterson, 1995) that accounts for two dimensions of attachment, place dependence and place identity. Place dependence refers to the functionality of a natural resource or outdoor recreation setting (Hammit & Stewart, 1996; Moore & Graefe, 1994; Stokols & Shumaker, 1981), whereas place identity is thought of as a "potpourri of memories, conceptions, interpretations, ideas, and related feelings about physical settings as well as types of settings" (Proshansky, Fabian, & Kaminoff, 1983). Identifying the subdimensions of place attachment enables better prediction of the importance of different place attributes than the more holistic concept of place attachment (Kaltenborn, 1997).

Purpose

This paper examines level of place attachment of four different types of users of the Allegheny National Forest (Wilderness users, developed campground users, day-use visitors, and horse users) as well as surrounding landowners who may or may not use the study area. The study examines the relationships between type of user, experience/frequency of use, activity and place attachment and its sub-dimensions. The data from this study came from a larger effort to understand and refine the effectiveness of USDA Forest Service communications and provide guidance for the development of a site-specific education plan.

The study site was a section of the Allegheny National Forest, located in northwestern Pennsylvania. Established in 1923 under the authority of the 1911 Weeks Act, the Allegheny is one of the earliest National Forests established in the east. The study site included the Hearts Content National Scenic Area (HCSA), primarily a day use area; the Hearts Content Recreation Area (HCRA), including the Hearts Content developed campground; and the Hickory Creek Wilderness Area (HCWA).

Outdoor recreation opportunities on the ALNF are provided and managed under the terms of the Multiple Use-Sustained Yield Act of 1960. Other uses on the forest include production of wood products; oil, gas and mineral extraction; watershed protection; habitat for wildlife and fisheries, and wilderness. The forest lies within a day's drive of one-third of the Nation's population. According to recent forest estimates recreation use continues to increase,

with dispersed activities becoming increasingly popular. The estimated recreation use for 1998 was 3.9 million Recreation Visitor Days (RVDs). This use includes activities such as mechanized travel and viewing scenery (46%); camping, picnicking and swimming (26%); hunting and fishing (10%); and other forms of recreation including hiking, horseback riding, water travel, winter sports, organized camping, nature study, wilderness use, gathering forest products, attending talks and viewing interpretive exhibits (18%). The HCWA is one of only two congressionally designated units of the National Wilderness Preservation System (NWPS) in Pennsylvania, Delaware, and Maryland. Because National Forest lands, in general, and federally designated Wilderness areas specifically are fairly uncommon in the East, it was hypothesized that these resources would be special to people.

Methodology

A combination of survey methods was used to collect the necessary data. The Hearts Content Campground, Hearts Content Scenic Area and Hickory Creek Wilderness Area users were contacted on-site during the 1997 summer season using a two-page personal interview methodology with a follow-up mail survey. The on-site personal interview survey response rate approached 99% ($n=269$); while the follow-up mail survey response rate was 61% ($n=155$). Adjacent landowners, equestrian, and other stakeholders that might have been missed in the on-site survey were sampled with a mail survey methodology. These additional groups were identified as follows:

1. Adjacent landowners were selected from tax roles acquired from the assessor's office in the two counties, Warren and Forest, adjacent to the study area.
2. Equestrian users were identified from a list of attendees to an equestrian management meeting held by the Forest the previous year.
3. Additional Wilderness users and stakeholders were identified through a trail register at the entrance to the Hickory Creek Wilderness.

Both mail surveys utilized a modified-Dillman approach including three first-class mailings. The initial contact included a letter describing the study, an 8-page survey and a self-addressed, stamped return envelope. For visitors contacted on-site this initial mailing was sent approximately one week after the on-site interview. The second contact, a thank you postcard/reminder was sent approximately two weeks after the initial contact. A third and final contact composed of a complete survey package (letter, survey & return envelope) was sent about two weeks after the postcard reminder to those individuals who had not responded to the first two contacts.

Results

The respondents in the sample were classified into one of five different groups based on their main reason for visiting or the means by which they were sampled (for the horse users and surrounding land owners) (Table 1). Onsite visitors were asked to select one of three responses that best described their purpose for visiting on the day they were interviewed. Slightly more than one quarter of respondents (29%) indicated they were visiting the Hickory Creek Wilderness and about one-fifth (17%) were camping in the developed campground. Day visitors to the Hearts Content Scenic Area made up 10% of the sample and horse users 16%. The remaining 28% were surrounding landowners. Although respondents could have reported more than one of these purposes for their visits, forcing them to choose the primary purpose provided the mutually exclusive segmenting of visitors that was needed to compare these user groups' attitudes and experience

Table 1. User group type

User Group	n	%
Wilderness	183	29%
Scenic Area	62	10%
Campground	108	17%
Horse User	99	16%
Landowner	178	28%
Total	630	

The typical respondent to the survey was a married, male Caucasian in his mid-forties, with one child. He is likely to have completed at least some college, is employed full time outside the home, earning \$35,000 to \$50,000 and having 3.5 weeks of vacation (Table 2). Males comprised about three-quarters of each user group except for horse users, where males and females were almost equally represented. The various user groups also tended to be different ages, with Wilderness users the youngest at almost 38 years old on average and surrounding land owners the oldest at 52 years old. Although almost three-quarters of the respondents were married, Wilderness users and campground users were least likely to be married (63% and 66% respectively). Although all users reported fairly high levels of education, Wilderness, campground and scenic area users tended to be more educated than horse users and landowners. However, income levels of the user groups did not differ significantly.

Table 2: Demographic Profiles for respondents and each user group.

Demographic Variable	All Users	Wilderness Users	Scenic Area Users	Campground Users	Horse Users	Land Owners	Level of Significance
Gender							
Male	74%	79%	68%	76%	51%	84%	0.000
Female	26%	21%	32%	24%	49%	17%	
Age	45.1	38.6	43.8	41.4	49.1	52.3	0.000
<20	1%	4%	0%	0%	0%	0%	0.000
21-30	14%	24%	15%	23%	0%	5%	
31-40	25%	31%	37%	29%	22%	13%	
41-50	28%	26%	23%	27%	34%	28%	
51-60	20%	13%	18%	13%	32%	26%	
61-70	10%	2%	7%	7%	9%	21%	
70+	3%	1%	2%	1%	3%	7%	
Race							
Caucasian	97%	96%	94%	95%	99%	99%	ns
Other	3%	4%	6%	5%	1%	1%	
Marital Status							
Married	73%	63%	81%	66%	77%	79%	0.000
Single	16%	29%	13%	21%	7%	10%	
Divorced	9%	7%	6%	10%	12%	8%	
Widowed	3%	1%	0%	3%	4%	4%	
Children	0.75	0.81	0.72	0.52	0.78	0.75	ns
0	62%	61%	66%	71%	55%	63%	ns
1	14%	14%	9%	10%	19%	13%	
2	15%	14%	13%	14%	20%	15%	
3	6%	7%	13%	5%	4%	6%	
4+	2%	4%	0%	0%	1%	3%	
Education	3.9	4.6	4.8	4.2	3.5	3.3	0.000
< High School	3%	1%	0%	2%	8%	5%	0.000
High school diploma	25%	15%	13%	25%	33%	33%	
Attended business/ technical school	13%	8%	9%	8%	15%	19%	
Some college or 2 year degree	23%	20%	22%	20%	25%	25%	
Completed 4 year college degree	17%	28%	19%	23%	8%	11%	
Some graduate work	7%	9%	19%	8%	8%	3%	
Completed graduate or advanced degree	11%	20%	19%	13%	6%	4%	
Income	4.9	4.9	5.5	4.7	4.6	4.9	ns
< \$5,000	2%	3%	0%	4%	1%	1%	ns
\$ 5,000 to \$14,999	5%	4%	0%	11%	8%	3%	
\$15,000 to \$24,999	16%	15%	10%	11%	20%	18%	
\$25,000 to \$34,999	13%	10%	13%	15%	14%	14%	
\$35,000 to \$49,999	27%	31%	27%	26%	23%	28%	
\$50,000 to \$74,999	25%	22%	27%	22%	30%	25%	
\$75,000 to \$100,000	6%	6%	13%	9%	2%	5%	
> \$100,000	6%	8%	10%	4%	2%	7%	

To determine experience levels and frequency of use, often identified as important factors in individuals' sense of place, respondents were asked a series of questions to develop an experience use profile. Since some of the respondents were contacted only by mail survey, we first had to determine if they knew of the area and if they had ever visited it. Although almost respondents had heard of the Allegheny National Forest, only 85% had heard of the Hickory Creek Wilderness Area (Table 3). Eighty-nine percent of those surveyed reported that they had visited either the Hickory Creek Wilderness Area or Hearts

Content Recreation Area. Of those respondents contacted on-site, 41% indicated this was their first visit to the area. The average number of visits to the area during the previous year was almost one and one-half visits. Of all the visitors, about one-fifth had visited the study area only once last year, about 15% twice, 11% three times, and 10% four or more times. Users tended to have a very long association with the area, with respondents reporting almost 15 years of experience at the area. Across the various user groups, horse users tended to have the least experience in the area. Only 66% had heard of HRWA and less than half

(47%) reported having visited the study area. However, those that had visited tended to have a long association with

the area, with the average being just over 18 years.

Table 3: Average experience for each user group

Experience Variable	n	All Users	Wilderness Users	Scenic Area Users	Campground Users	Horse Users	Land Owners	Level of Significance
Have you heard of Hickory Creek Wilderness Area?	510	85%	97%	75%	81%	66%	88%	0.000
Have you ever visited the HCWA/HCRA?	624	89%	99%	100%	100%	47%	91%	0.000
Is this your first visit?	268	41%	39%	50%	38%	--	--	ns
How many trips here last year?	257	1.4	1.4	1.1	1.7	--	--	ns
How long ago was your first visit?	530	14.9	8.3	9.9	9.9	18.1	27.9	0.000

Respondents were asked to indicate what activities they participated in while visiting the area. Overall the most popular activity participated in by users was viewing scenery. Almost four-fifths of users reported taking part in viewing scenery (Table 4). Other popular activities included hiking/walking (75% participated), camping (60% participated) and backpacking (35% participated). Respondents were also asked to rank order their three most

important activities. Based on the average importance rating, hiking/walking was the most important activity (mean importance = 1.90), followed by camping (1.67), viewing scenery (1.58) and backpacking (1.02). The least important activities were trail jogging/running (0.05), driving off-road-vehicles (0.06), orienteering (0.13) and mountain biking (0.14).

Table 4: Participation rates and importance of recreation activities

Activity	Most Important (4)	Second Important (3)	Third Important (2)	Participate/Unranked (1)	Did Not Participate (0)	Mean Importance
Hike/Walk	21%	19%	14%	21%	25%	1.90
Backpack	18%	4%	3%	10%	65%	1.02
Camp	18%	24%	6%	12%	41%	1.67
Hunt	10%	4%	4%	10%	72%	0.70
View Scenery	7%	17%	24%	32%	21%	1.58
Ride Horses	6%	1%	1%	2%	90%	0.32
Other	3%	1%	1%	5%	90%	0.22
Fish	1%	6%	3%	15%	75%	0.43
Picnic	1%	3%	6%	24%	66%	0.50
Nature Study	1%	3%	7%	19%	70%	0.47
Mountain Bike	1%	1%	1%	5%	92%	0.14
Photography	1%	3%	9%	31%	57%	0.60
Drive ORVs	0%	1%	1%	3%	96%	0.06
Orienteering	0%	0%	1%	10%	89%	0.13
Jog/Run	0%	0%	0%	3%	96%	0.05

To measure place attachment respondents were asked to respond to ten items designed to gauge their feelings for this area. The items were based on studies by Williams & Roggenbuck (1989), Moore & Graefe (1994) and Williams, Patterson, Roggenbuck and & Watson (1992) and are designed to tap into the multi-dimensional nature of the place attachment concept. The ten statements used in this

study (see Table 5) are a reduced set of the fifteen original items. The original item pool was condensed to reduce the survey burden on respondents. The particular items were chosen to represent two dimensions of place attachment: place dependency and place identity. Additionally, one negatively worded item was included that was originally found to part of a third dimension, "place indifference".

Table 5: Place attachment statements used.

Statement
This area means a lot to me.
I enjoy doing the types of things I do in this area more than in any other area.
I am very attached to this area.
I get more satisfaction out of visiting this area than from visiting anywhere else.
I feel no commitment to this area.
The things I do here I would enjoy just as much at another site.
I find that a lot of my life is organized around this area.
No other place can compare to this area
One of the major reasons I now live where I do is because of this area.
This area is the best place for the kind of recreation I like to do.

Overall, visitors tended to report fairly high levels of attachment to the study area (Table 6). As was expected visitors most often agreed with the statement "This area means a lot to me," with 86% agreeing or strongly agreeing with the statement. Other items demonstrating high levels of place attachment among visitors were "I enjoy doing the types of things I do in this area more than in any other area"

(55% agreed), "I am very attached to this area" (67% agreed), and "This area is the best place for the kind of recreation I like to do" (46% agreed). Item five, "I feel no commitment to this area," although it is negatively worded also indicated a high level of attachment, with 74% of respondents disagreeing or strongly disagreeing with the statement.

Table 6: Respondents' level of agreement with the place attachment items

Attachment Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
This area means a lot to me.	4%	1%	10%	30%	56%	4.33
I enjoy doing the types of things I do in this area more than in any other area.	2%	7%	37%	33%	22%	3.65
I am very attached to this area.	3%	4%	27%	35%	32%	3.88
I get more satisfaction out of visiting this area than from visiting anywhere else.	3%	15%	47%	22%	14%	3.29
I feel no commitment to this area.	31%	43%	17%	7%	3%	2.08
The things I do here I would enjoy just as much at another site.	10%	30%	32%	24%	4%	2.84
I find that a lot of my life is organized around this area.	10%	31%	33%	16%	10%	2.84
No other place can compare to this area	10%	25%	35%	18%	12%	2.96
One of the major reasons I now live where I do is because of this area.	21%	34%	29%	7%	9%	2.48
This area is the best place for the kind of recreation I like to do.	6%	11%	37%	30%	16%	3.40

To affirm the multi-dimensional nature of the attachment scale, the ten items were factor analyzed using a principle-components procedure with varimax rotation. This analysis revealed a two-factor solution accounting for 63.4% of the

variance in the original ten items (Table 7). The two-factor solution, for the most part, concurs with past research results. An average index was developed for each of two sub-dimensions, place dependence and place identity.

Table 7: Factor analysis statistics for attachment items

Attachment Item	Factor 1	Factor 2
<i>Factor 1 - Place Dependence</i>		
One of the major reasons I now live where I do is because of this area.	0.830	
I find that a lot of my life is organized around this area.	0.828	
No other place can compare to this area	0.787	
This area is the best place for the kind of recreation I like to do.	0.648	0.490
I get more satisfaction out of visiting this area than from visiting anywhere else.	0.610	0.545
<i>Factor 2 - Place Identity</i>		
I am very attached to this area.		0.786
This area means a lot to me.		0.767
I feel no commitment to this area.		0.747
I enjoy doing the types of things I do in this area more than in any other area.	0.511	0.657
<i>Place Indifference</i>		
The things I do here I would enjoy just as much at another site.		

Summary Statistics

Factor	Eigenvalue	% of Variance	Cumulative %
1	5.07664	50.8%	50.8%
2	1.25848	12.6%	63.4%

The place attachment indices were then analyzed to determine the reliability of each sub-dimension and the overall place attachment scale (Tables 8 through 11). Cronbach's α (alpha) was calculated as a measure of reliability and internal consistency, based on the average inter-item correlation among the items. All attachment

indices had fairly high reliability. The full place attachment index had a reliability of $\alpha = 0.89$, while place dependence had a reliability of $\alpha = 0.86$ and place identity had a reliability of $\alpha = 0.80$.

Table 8: Place attachment index reliability statistics

Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
This area means a lot to me.	0.561	0.495	0.878
I enjoy doing the types of things I do in this area more than in any other area.	0.736	0.639	0.866
I am very attached to this area.	0.720	0.671	0.867
I get more satisfaction out of visiting this area than from visiting anywhere else.	0.739	0.606	0.865
I feel no commitment to this area*.	0.396	0.334	0.889
The things I do here I would enjoy just as much at another site*.	0.423	0.298	0.887
I find that a lot of my life is organized around this area.	0.680	0.580	0.869
No other place can compare to this area	0.707	0.572	0.867
One of the major reasons I now live where I do is because of this area.	0.504	0.445	0.883
This area is the best place for the kind of recreation I like to do.	0.739	0.559	0.865

Reliability Coefficients: 10 items

Alpha = 0.89

**variable reverse coded prior to analysis*

Table 9: Place dependence index reliability statistics

Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
I get more satisfaction out of visiting this area than from visiting anywhere else.	0.669	0.512	0.840
I find that a lot of my life is organized around this area.	0.735	0.555	0.822
No other place can compare to this area	0.737	0.551	0.821
One of the major reasons I now live where I do is because of this area.	0.599	0.432	0.858
This area is the best place for the kind of recreation I like to do.	0.688	0.506	0.834

Reliability Coefficients: 5 items

Alpha = 0.86

Table 10: Place identity index reliability statistics

Place identity statement	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
This area means a lot to me.	0.670	0.486	0.727
I enjoy doing the types of things I do in this area more than in any other area.	0.641	0.517	0.741
I am very attached to this area.	0.770	0.633	0.673
I feel no commitment to this area*.	0.410	0.191	0.805

Reliability Coefficients: 4 items

Alpha = 0.80

**variable reverse coded prior to analysis*

Table 11: Summary of attachment indices, mean scores and index reliability

Attachment Index	# of Items	Mean Score	Alpha
Place Attachment	10	3.4	0.89
<i>Sub-Dimensions</i>			
Place Dependence	5	4.0	0.87
Place Identity	4	3.0	0.80

In order to ascertain if there were significant differences between the types of users, experience indicators, frequency of use and place attachment indices, a series of comparative analyses were performed. First we examined the relationships between level of attachment and type of

user group. Surrounding landowners reported the highest levels of attachment on all levels. Horse users also reported fairly high levels of attachment, followed by wilderness users, campground users and lastly scenic area users (Table 12).

Table 12: Relationship between mean level of attachment and user group type

Attachment Index	All Users	Wilderness Users	Scenic Area Users	Campground Users	Horse Users	Land Owners	Sig.
Place Attachment	3.4	3.2	2.9	3.0	3.4	3.8	0.000
Place Identity	4.0	3.9	3.6	3.5	4.0	4.3	0.000
Place Dependence	3.0	2.8	2.4	2.7	3.0	3.6	0.000

Respondents that had heard of the HCWA were significantly more attached, as measured on all dimensions, to the study area than those that had not (Table 13). Additionally, visitors on their first trip to the study area

were significantly less attached than those that had visited before. This relationship was not as pronounced, nor was it evident on either of the sub-dimensions.

Table 13: Relationship between mean level of attachment and experience indicators

Attachment Index	Heard of Area			First Visit		
	Yes	No	Sig.	Yes	No	Sig.
Place Attachment	3.45	2.93	0.000	2.01	3.09	0.040
Place Identity	4.01	3.38	0.000	3.40	3.64	ns
Place Dependence	3.05	2.60	0.010	2.47	2.64	ns

To test the relationships between activity importance, experience indicators and the various attachment indices, a series of zero-order correlations were performed. Six activities and two experience indicators were significantly related to the attachment indices (Table 14). However, the activity expected to be most strongly related to place dependence, backpacking, actually showed a negative relationship. As importance of backpacking increased, all of the attachment scales decreased, indicating lower levels

of place attachment, place dependence, and place identity. Camping and viewing scenery followed a similar pattern. Hunting and fishing were related to the attachment scales in the expected direction. As the importance of hunting and fishing increased, the place attachment indices all increased. The correlations between the measures of attachment and the number of years and trips to the area were significant and positive, as expected.

Table 14: Correlation between attachment indices and experience indicators and activity importance

Activity/ Experience	Place Attachment	Place Dependence	Place Identity
<i>Backpacking</i>	-0.218**	-0.249**	-0.126**
<i>Camping</i>	-0.225**	-0.235**	-0.210**
<i>Viewing Scenery</i>	-0.103*	-0.114*	-0.047
<i>Hunting</i>	0.295**	0.293**	0.266**
<i>Fishing</i>	0.200**	0.189**	0.208**
<i>Other Activities</i>	0.098*	0.092	0.074
<i>Years here</i>	0.330**	0.325**	0.288**
<i>Trips</i>	0.192**	0.168*	0.159

* $p=0.05$, ** $p=0.01$

Discussion and Conclusions

The results of this study add to the growing pool of information on sense of place and place attachment. For the most part the results support previous research findings. The factor analysis found two underlying dimensions, even with a reduced set of items. This result supports the previous researchers' (Williams, et al, 1992; Moore & Graefe, 1994) conclusions that place attachment is a multi-dimensional construct. These sub-dimensions and the original scale all had very high internal reliability, suggesting that the survey items are tapping into a specific idea.

The differences across user groups also presented few surprises. Surrounding landowners have much more invested in the area and are the most attached. Scenic area users tended to be day users with less contact with the area and therefore reported lower levels of attachment. It was expected that Wilderness users would be more dependent on the resource due to the scarcity of designated Wilderness in the region. The relatively high place attachment reported by the campers suggests a high loyalty among this particular user group to the Hickory Creek campground.

Increases in experience and frequency of use tended to be associated with higher levels of place attachment, dependence and identity. This finding agrees with previous research findings and seems to make sense. The longer an individual is associated with a place, the more attached he or she is likely to be.

The most surprising finding was the negative relationship between some activities and the attachment indices. As a resource dependent activity such as backpacking becomes more important, one would expect that place attachment, or at least place dependence, should become stronger. In this case we found the reverse. This finding might suggest that Hickory Creek backpackers use many different areas and thus have no particular attachment to the Hickory Creek area. The negative relationship might also be partly explained by the interaction between user group and activity. Landowners, horse users and campground users were all relatively strongly attached to the study area and tended to rate backpacking lower in importance. Since together they made up a large proportion of the sample, their ratings of backpacking may have reversed the direction of the expected relationship.

Management Implications

There were significant differences in place attachment across Forest user groups. For example, participants in resource dependent activities like hunting and fishing tended to indicate higher levels of place attachment. Developing ways of measuring place meanings and attachment may illuminate the prospects for managing recreation resources as meaningful places. Managers should consider giving particular attention to the most resource-dependent users. They should also be aware that certain user groups tend to be more attached and may warrant special consideration during planning processes.

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