

## **THE EFFECTS OF INSTRUMENTAL AND EXPRESSIVE FACTORS ON OVERALL SATISFACTION IN A PARK ENVIRONMENT**

**CLAUDIA JUROWSKI**

*Black Hills State University*

**MELINDA W. CUMBOW**

**MUZAFFER UYSAL**

*Virginia Polytechnic Institute & State University*

**FRANCIS P. NOE**

*U.S. Department of the Interior*

### **ABSTRACT**

The problem of how to measure site satisfaction for a natural area was approached by applying a theoretical model that has been used in marketing. The concepts of instrumental and expressive attributes were used to portray an individual's evaluation of an environmental situation. Expressive indicators of satisfaction involve core experiences representing the major intent of an act, in this case seeking an outdoor recreational experience in a natural-historic setting, while instrumental factors serve to act as facilitators or means to that desired end. Both expressive and instrumental factors must be taken into account in explaining overall satisfaction. A LISREL model was used to test the direction and relative influence of the measured and latent variables. The model that evolved reflected a more complex explanation of the factors that underlie satisfaction.

### **INTRODUCTION**

Managers of park, forest, and wilderness recreation areas have increased their demand for site specific information about users, and at the same time have changed the emphasis on information sought from descriptive to explanatory. Instead of just seeking information on trip destinations, user demographics, and

levels of public use, today's managers are looking for factors that can explain reactions to management practices.

Public statements by managers reflect this shift in thinking and encourage others to adopt similar approaches. Gary Everhardt, a former Director of the National Park Service, explains this change:

We need to be more sensitive to the needs of the public and how we can better accommodate them without destroying the very thing they came to experience—the nature of the park. If national parks are here to serve the public, we ought to know how the public thinks, feels and acts toward what we plan and develop for them [1, p. 19].

Taking such an active stance toward park visitors entails a reliance on greater public input in shaping programs, identifying needed facilities, and deciding what site services to offer. The techniques, methods and data reported in this article are designed to obtain evaluations of national park environments from the public. We report on an application of our approach at the Gulf Island National Seashore in Mississippi.

## LITERATURE REVIEW

Since National Park managers are charged with the often competing missions of protecting natural resources and providing recreational opportunities, they are extremely sensitive to decisions that would alter a site's character. The difficult challenges confronting leisure resource managers in balancing preservation and development have been discussed in several studies [2-5]. Knowing what factors are most satisfying to users of national parks and recreation areas is critical in this regard. The public also provides benefits to parks but are far too often simply characterized as a negative influence.

Facilities, services, and programs in natural areas are generally under direct management control. Because there is some degree of control over how these services are delivered and what is offered, they can be changed or even withheld from the public. Many sites in natural areas have been planned without the benefit of direct marketing or survey research. This practice is not without merit, although more direct and quantitative research strategies may be more appealing in principle, since by definition, public lands should be managed to reflect the public's interests.

The survey design discussed below embodies several assumptions. First, the survey attempts to focus on program processes, in addition to program effects or outcomes. This approach allows for greater examination of variables outside the stated goals of a program, encourages the examination of perspectives other than those of administrators, and forces researchers to gather more precise data. The

evaluation of social programs is clearly dependent on the "quality of the collected data" [6].

Furthermore, the practical usefulness of the findings is greater when data pertain to specific program components, rather than complex global programs or general issues [7]. In fact, Mandell [8] argues that understanding different settings is critical for assessing how programs and policies vary in effectiveness. Knowledge about intended or actual users also helps define more clearly what is or should be evaluated [9]. According to the "final approach" of Rossi et al. [10], program elements can be evaluated from the participants' perspective regarding their actual participation, knowledge, or satisfaction [10].

Crompton and MacKay stress the basic difference between satisfaction and service quality: "Satisfaction is a psychological outcome emerging from an experience, whereas service quality is concerned with the attributes of the service itself" [11, p. 368]. They note that variables outside a manager's control, such as weather and intangible social circumstances, can influence user satisfaction.

It also has been argued that "satisfaction represents little more than a shared convention for evaluation. Although it has some utility as such, we doubt that its analysis will lead to a more profound understanding of the recreation experience" [12, p. 256]. The researchers reason that the concept of happiness would be a better replacement for the attitude of satisfaction save for those aspects associated with valuative judgments. Still, [11] and [12] do not take into account the fact that they treat satisfaction as more "global" than specific [13]. As a result, the issue of program evaluation is espoused in the former and ignored in the latter.

Recreational satisfaction also may be linked to commodities or services that facilitate or frustrate intended activities. For example, Leiss [14] reflects the perspective of Krieger [15], who sees opportunities to experience nature becoming more scarce because of increasing dependence upon the acquisition of commodities which are supposedly essential for "enjoying" nature, and of Linder [16], who sees the enjoyment of activities as associated with ever-larger sets of commodities and as impossible without those commodities. Feelings of satisfaction or dissatisfaction with the experience of nature may be interwoven with the facilities, services, and programs that accompany the activity.

Marketing research has studied consumer satisfaction as either an outcome or a process [17]. Studies that have measured leisure outcomes describe satisfaction; those that measure the process of leisure explain satisfaction. Iso-Ahola contends that social analysis will show which leisure activities can replace each other with minimal loss in satisfaction, so aiding leaders in difficult resource allocation and site alteration decisions [18]. The planning of sound, substantial recreational programs depends on an understanding of the evaluative process of satisfaction, which is largely a function of expectations, preferences and attitudes of users [19] and of so-called maintenance factors and satisfiers [20, 21]. The present research offers a model of satisfaction that considers the impact of past experience,

perceived disconfirmation of expectations, and instrumental and expressive satisfiers on overall satisfaction with a recreational experience.

## **SATISFACTION MODEL**

Our current working model refines earlier research by Noe, who examined the theoretical distinction between instrumental and expressive indicators of satisfaction [22]. As explained below, the model describes overall satisfaction as a function of perceived disconfirmation, past experience, trip characteristics, and instrumental and expressive preferences. The complete list of model variables is given in Table 1.

Trip characteristics and past experience are entered into the model as exogenous variables that affect perceived disconfirmation or expectations. Preliminary investigations indicated that there was little or no direct relation between overall satisfaction and past experience or trip characteristics. It is hypothesized that these factors directly influence only expectations and that is it through expectations that these factors can then indirectly affect satisfaction. Consumers have expectations about various aspects of their recreational experience. We differentiate the impacts of varying types of expectations on instrumental, expressive, and overall satisfiers. Finally, the model will seek to explain the consequences of instrumental and expressive satisfiers on overall satisfaction.

### **Past Experience**

The frequency of experiences at a site may influence and modify expectations. Consequently, past experience, defined as the number of times the respondent visited the Gulf Island National Seashore in the past five years, was included in the model to examine the role expectations formed in previous visits to the same site may have played in the determination of overall satisfaction.

### **Trip Characteristics**

The expectations of park users may also be affected by the amount of commitment they have made to the trip. Those who spend more money, come from farther distances, and spend the most time in the area are likely to have less defined expectations than local users. Accordingly, a variable intended to measure the "extensiveness" of the trip was incorporated into the model. Three items comprise the latent variable entitled "trip": miles traveled to the destination, days spent at the destination, and total dollars spent.

### **Perceived Disconfirmation**

Perceived disconfirmation, treated in the marketing literature as "contrast theory," refers to the discrepancy between execution and expectations as

perceived by the user. It is measured with a question that asks how close the product or service comes to what the respondent expected. Perceived discontinuation has been examined by many researchers [23-29]. In this study, it was measured by a set of items which asked respondents to indicate whether the service or product was as expected or not expected. A high score on the expectation variable indicates perceived confirmation of expectations while a low score is an indication of perceived disconfirmation. Perceived disconfirmation should, in theory, lead to dissatisfaction.

### **Satisfiers: Instrumental and Expressive**

Instrumental and expressive satisfiers define a recreational or leisure act as either satisfying or dissatisfying. Instrumental satisfiers have been defined as referring to the means to an end, or the evaluation of the physical product, expressive satisfiers as referring to the end in itself, or the psychological understanding and interpretation of a product [21]. Satisfaction is more likely to result from expressive activities—elements which “truly motivate and contribute to satisfaction” have been considered to be expressive, whereas instrumental elements are considered to be maintenance factors which, if absent, lead to dissatisfaction [20].

Research findings concerning the existence of expressive and instrumental factors have been mixed. It has been argued that the instrumental performance of a product is a necessary but not a sufficient condition of satisfaction, and that expressive attributes lead to increased satisfaction [21]. This contention was supported in other research which suggested that instrumental attributes of the leisure experience do not contribute significantly to the satisfaction of the participant and that expressive attributes explained a significant portion of the variance [22]. However, a later study found only mixed support for these claims [17].

Our model, depicted in Figure 1, hypothesizes that past experience affects satisfaction only indirectly through expectations. Four types of expectations are included in the model: instrumental expectations, which includes items such as more shade and restrooms; expressive expectations, which include items such as interpretive guided tours; spatial expectations, which include items such as crowding; service expectations, which refer to food and beach services. These expectations are expected to influence a respondent's level of satisfaction. The four types of expectations and the types of satisfiers are in turn expected to modify overall satisfaction.

### **EXPLANATION OF THE MODEL**

A LISREL model is a kind of path analytic model. As in path analysis, the model describes the logical flow of factors which affect overall satisfaction. The arrow at the end of a line depicts a sequential, causal linkage between variables. In

Table 1. Latent Variables, Corresponding Measured Variables and Items Used in the Models

Latent Variable	Measured Variable	Items Used and Their Coding
Trip (TRIP)	Miles (MILES)	Number of miles traveled to the destination
	Days (DAYS)	Number of days spent at the destination
	Money (MONEY)	Total dollars spent on auto services, campsite fees, groceries, snacks and beverages, admission fees, hotel-motel lodging, restaurants and fast foods, souvenirs, clothing and miscellaneous, and parking.
Past Experience (PASTEXP)	Past Experience (PASTEXP)	Number of times visited the Gulf Island National Seashore in the past five years.
Instrumental Expectations (INSTEEXP)	Personal Instrumental Expectations (PERSFAC)	More shade, more restrooms, more conveniences such as drinking fountains
	Nonpersonal Instrumental Expectations (NOPERFAC)	More lifeguards, more trash containers
Expressive Expectations (EXPEREXP)	Interpretive Expressive Expectations (INTERPT)	More park service people to assist and inform; more interpretive services and guided tours, more exhibits
	Informative Expressive Expectations (INFORM)	More information and brochures describing the area; more information and direction signs
Spatial Expectations (SPACE)	Crowding (PEOPLE)	Fewer people
	Property management (AREA)	More visitor protection warning signs, more grooming of landscaped areas, more designated recreation areas
Service Expectations (SERVICE)	Beach Service (BEACH)	More beach rentals
	Food Service (FOOD)	More food service

Table 1. (Cont'd.)

Latent Variable	Measured Variable	Items Used and Their Coding
		The expectation items are scores respondents gave to the following question: "This section contains a series of questions regarding what you might have anticipated seeing and experiencing before visiting the Gulf Islands National Seashore. Please check the appropriate box" (p. 8). The respondents had a choice of selecting "expected" = 3, "neither expected nor not expected" = 2, or "not expected" = 1. Exploratory factor analysis was used to group the seventeen expectation items.
Instrumental Satisfiers (INSTRSAT)	Satisfaction with Beach Area (BEACHSAT)	Clean beach, swimming areas, quality of water for swimming, pier area
	Satisfaction with facilities (FACSAT)	Shade shelter, restrooms, drinking water
Expressive Satisfiers (EXPERTSAT)	Satisfaction with tour (TOURSAT)	Guided Fort tour; guardroom exhibits; sales items
	Satisfaction with activity (DOSAT)	Fishing; beach rental service; boat mooring service; walk around the island
Overall Satisfaction (OVERSAT)	Overall satisfaction (OVERSAT)	Overall judgment of Fort Massachusetts  For all of the satisfaction items, respondents were asked to indicate how they felt about the site and the services it offers. Choices included excellent (5); good (4); no opinion (3); fair (2); poor (1).

our model, past experience and trip characteristics are exogenous variables which are expected to affect instrumental and expressive expectations.

Two-headed curved arrows denote a correlation between two variables or between unique and error variances of specific pairs of measured variables. In this model, the latent variables trip and past experiences are hypothesized to be correlated. Also correlated, for example, are the error terms between personal instrumental expectations (PERSFAC) and satisfaction with facilities (FACSAT), error terms between interpretive expressive expectations (INTERPT) and satisfaction with tour services (TOURSAT).

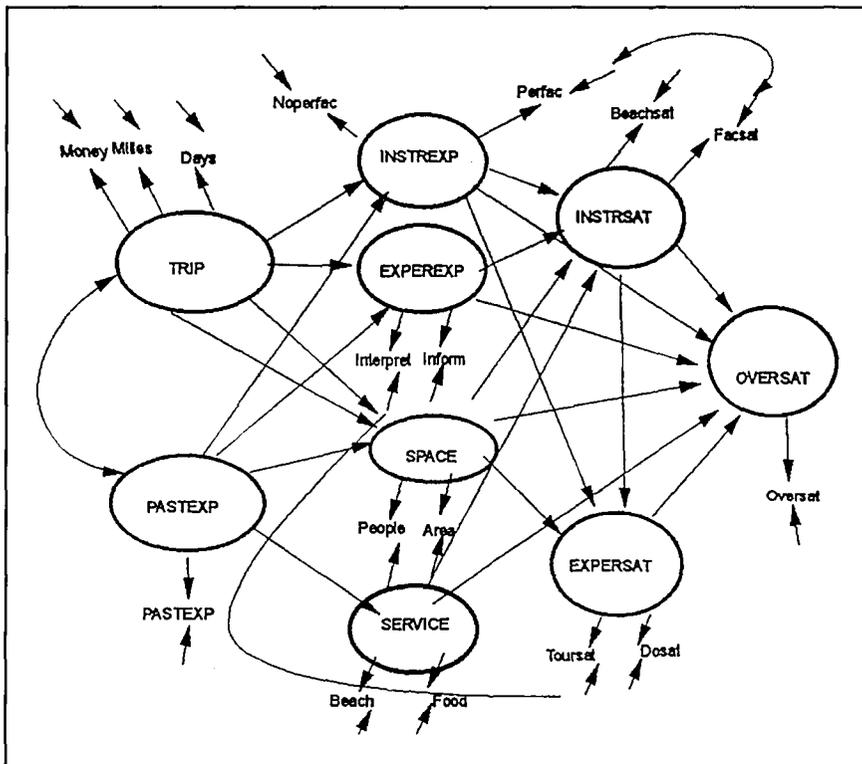


Figure 1. Initial model.

**Note 1:** Fit Statistics: Goodness of fit = .933, adjusted goodness of fit = .948, root mean square = .045, chi-square = 125.48, degrees of freedom = 90.

**Note 2:** Key to Symbols (see Table 1 for more detailed explanations).

The LISREL model simultaneously tests the effects of latent variables on one another. The latent variables, enclosed in ovals, result from a factor analysis of the measured variables, pictured in the model at the end of the arrow leading from the latent variable. The arrows leading from the latent to the measured variables defines the measurement portion of the model, which reflects the results of the factor analysis. The measurement error and unique variance of the measured variables are depicted through the use of short arrows which lead from the latent variable to the measured item. The latent constructs with the error terms removed are closer approximations of the construct which is the ultimate focus of the research [30]. The results should provide an unbiased estimate of the true effects of expectations and instrumental and expressive satisfaction on overall satisfaction.

Again, the two-headed arrow between trip and past experience denotes a correlation between these two latent exogenous variables, and the curved arrows between unique and error variances of specific pairs of measured variables conote correlations. The correlation of error terms is built into this model to explain suspected correlation between measured variables not included in the latent variable. For example, it is reasonable to assume that expectations concerning personal instrumental expectations would have something in common with instrumental satisfactions other than the influence of the latent variable instrumental expectations on the latent variable instrumental satisfaction, because both composite variables contain a measurement concerning similar items.

## SURVEY METHODS

The survey was taken on the Mississippi side of Gulf Islands National Seashore. The park is comprised of barrier island sites and land-based nodes on bays, bayous, or the sound moving from Petit Bois Island in the east to Ship Island off Gulfport at the west end. This study focused on visitors to Fort Massachusetts on Ship Island. The site offers the best opportunities for primitive camping, fishing, boating, swimming, picnicking, and hiking, and an historic fort and ruins to visit. Fort Massachusetts is mainly reached by private individual and excursion boat tours from Gulfport and Biloxi. Fort Massachusetts was selected to test the model because of the site's range of tourist qualities.

A seasonally adjusted survey was conducted during the summer, fall, and winter/spring seasons. Cluster sampling and intercept strategies were used to randomly contact park users during the AM and PM hours to ascertain their willingness to participate in the study. A single week was randomly selected for each season. However, times were excluded that overlapped national or local holidays and festivals, or tourist promotions by the local communities, such as fishing tournaments. Efforts were made to sample the general park user, as opposed to the specialized interest-driven recreationist. Site intercepts were made by interviewers trained by the School of Human Performance and Recreation, University of Southern Mississippi, at various entrances and areas of congregation, such as parking lots, boat docks, beach areas, and visitor centers. The intercepts were used to obtain mailing addresses of visitors who volunteered to be sent a mail questionnaire. A modified Dillman [31] approach was used to distribute the mail questionnaire and follow-ups designed to increase return rates. Three contacts with each potential respondent were made. The return rate was 75 percent ( $N = 366$ ).

The questionnaire had three sections. In the first, respondents were asked to rate the facilities, services, and programs that were provided. Next, respondents for each location were asked to evaluate a list of attributes using an analogous Likert scale for perceived service performance. The final question in each location asked respondents to rate their overall impression of the site. Respondents were asked to

evaluate each item as either excellent, good, no opinion, fair, or poor, with excellent counted as five and poor as one.

Perceived disconfirmation was measured by first developing a generic list of service attributes that conceivably could be enhanced, increased or reduced for all locations. As with the Tse and Wilton [29] approach, seventeen scale items attempted to determine the degree to which a service was or was not expected. Respondents were asked whether they expected more or less of a service, and whether they did expect that particular service, or neither expected nor did not expect it. Disconfirmation was measured by determining when the park respondents believed more (less) services were expected than were actually being provided or offered. "Expected" was assigned a value of three, "Unexpected"—i.e., neither expected nor not expected—a value of two, and "Not Expected" a value of one.

## ANALYSIS

The SPSS computer program [32] was used for preliminary analysis, creation of composites, generation of the descriptive statistics, and derivation of correlation matrix and standard deviations. Latent variable structural equations which produced the estimates of parameters implied by the model shown in Figure 1 were calculated using the computer program LISREL 7 [33].

The analysis begins with the development of a model that plausibly explains the data according to qualitative and quantitative criteria [31]. A researcher devises a model that will serve as a starting point, realizing that the initial model will probably be refined later [34]. In this particular case, the original model was modified; then adjustments were made to the subsequent model. By comparing one model to another, the richest and most parsimonious model could be chosen to explain the satisfaction process.

Seventeen variables were selected from the questionnaire survey items for incorporation in a path model, as explained below and summarized in Table 1.

### Test Variables Measured

#### 1. Miles

The number of miles the respondents traveled to get to the Gulf Island National Seashore. Visitors who travel from farther away are expected to have less explicit expectations concerning the site they are about to visit. Furthermore, those that come from farther distance have more at stake than those who have spent less time and money traveling to a destination [35]. Those coming from shorter distances have less invested because they are more likely to have visited the site or at least to have heard about it from acquaintances.

## 2. *Days*

The number of days the respondents spent near the Gulf Islands. This factor should affect a visitor's expectations because of the increased time commitment required. Those who come for shorter time periods are expected to have fewer expectations [35].

## 3. *Money*

A composite of responses to questions concerning how much money the respondents had spent on auto services, campsite fees, groceries, snacks and beverages, admission fees, hotel-motel lodging, restaurants and fast foods, souvenirs, clothing and miscellaneous, and parking. As noted, money is the third component of a factor that measures the strength on one's effort to have a pleasant experience [35].

## 4. *Visits*

The number of times a respondent visited the Gulf Island National Seashore in the past five years. A larger number of past experiences would reduce the unexpected. Those who visited the most often are considered likely to have much stronger expectations [36].

## 5. *Personal Instrumental Expectations (PERSFAC)*

A composite score of the respondents' expectations concerning shade, rest-rooms, and conveniences such as drinking fountains. These are essential facilities expected in most public places. While these factors are not considered satisfiers, their absence is generally a factor which causes dissatisfaction [11].

## 6. *Nonpersonal Instrumental Expectations (NOPERFAC)*

A composite score of the respondents' expectations concerning infrastructure support for a recreational activity such as life guards, trash containers, etc. Such items are essential to the functioning of the recreational area. Failure to meet the public's expectations in this area would result in dissatisfaction [11].

## 7. *Interpretive Expressive Expectations (INTERPT)*

A composite score of the respondents' expectations concerning park service assistance and information interpretive services and guided tours, and exhibits. The wide diversity of activities and services provided in National Parks suggest that the greatest discrepancies in expectations could occur in interpretive services where communication is seen as lacking. These services will probably be used more extensively by recreationalists who visit the site less frequently [37].

### 8. *Informative Expressive Expectations (INFORM)*

A composite score of the respondents' expectations concerning use of information sources. As with expectations concerning interpretive services, those pertaining to information and direction will be stronger for the less frequently visiting tourist [38].

### 9. *Crowding (PEOPLE)*

The respondents' ratings of their expectations concerning the number of people present. Gramann's analysis of crowding in recreational settings [39] found no conclusive impact of crowding on satisfaction, but reports that others have noted such responses.

### 10. *Property Management (AREA)*

A composite score of the respondents' expectations concerning more visitor protection, more warning signs, more grooming of landscaped areas, and more designated recreation areas. Variables ten through twelve measure different types of service levels expected. Again, respondents who have traveled furthest and have spent the most time and money are expected to have higher service level expectations [11].

### 11. *Beach Service (BEACH)*

Respondents' scores on the desirability of more beach rentals.

### 12. *Food Service (FOOD)*

Respondents' scores on the desirability of providing more food service items.

### 13. *Satisfaction with the Beach Area (BEACHSAT)*

A composite score of the respondents' ratings of swimming areas, beach cleanliness, quality of water for swimming and in the pier areas. This synthesized variable describes satisfaction with natural sites that are attached to or centered around beach or water activities.

### 14. *Satisfaction with Facilities (FACSAT)*

A composite score of the respondents ratings of shade shelter, restrooms, and drinking water. These items may be non-beach related facilities used by a variety of visitors including swimmers, tourists, campers, boaters, and others.

### 15. *Satisfaction with Tourist Site (TOURSAT)*

A composite score of the respondents ratings of the guided fort tour, guardroom exhibits, sales items, and outdoor exhibits. This compound element rates tourist rather than recreational experiences. These count as expressive rather than instrumental factors.

### 16. Satisfaction with Site Activities (DOSAT)

A composite score of the respondents' ratings of fishing, beach rental service, boat moorings and walking trails around the island. While these components are also expressive, they reflect activities of an outdoor recreational rather than a passive tourist character.

### 17. Overall Satisfaction with Fort Massachusetts Site (OVERSAT)

The response given on the item overall judgment of Fort Massachusetts island and beach site. This single item variable was designed to solicit the general impression respondents remembered about this site. While responses to specific questionnaire items demonstrated considerable differentiation, 89.4 percent of the respondents rated this item good or excellent. In essence, this model is designed to test how expectations, instrumental or expressive factors influence this rating.

## Latent Variables

These variables are derived from measured variables [30]. Simultaneous factor and path analyses used in testing reduces the effects of unreliability in the measured variables. The variables enclosed in ovals in Figure 1 are constructs derived from the measured variables described below.

*Past Experience (PASTEXP)* is an underlying construct measured by the number of past visits.

*Trip Characteristics (TRIP)* is created through the correlation of variables measured by miles, days, or money spent.

*Instrumental Expectations (INSTEXP)* developed from personal instrumental expectations (PERSFAC) and nonpersonal instrumental expectations (NOPERFAC). The measured variables were selected based on their ability to fit the definition of expectations that concern factors that facilitate an experience rather than factors that are more directly involved with an experience.

*Expressive Expectations (EXPEREXP)* is derived from measurements of factors that are directly related to experiences. The variables interpretive expressive expectations (INTERPT) and informative expressive expectations (INFORM) were selected as elements that directly affect cognitive judgments and understanding.

## RESULTS

### Model 1

Variable means, standard deviations and intercorrelations among the variables in the model are delineated in Table 2. The analysis of the initial model (Model 1) suggested that the model did not provide a good explanation for the data. The statistical fit illustrated in Table 3 which compare the residual differences between

the fitted covariance matrix (the matrix implied by the model) and the sample covariance matrix (the matrix used to analyze the model) indicate a relatively weak correspondence. The chi-square statistic = 125.48,  $p = .008$ ) was significant indicating a poor fit. While the root mean square residual correlation ( $r = .045$ ) was acceptably low, the adjusted goodness of fit index (.886) below .95 confirms the weaknesses in the model.

## Model 2

Adjustments were made to the model. Examination of the correlation matrix indicated that the latent variable spatial expectations (SPACE) was highly correlated with two other expectation latent variables, (instrumental-INTEXP,  $r = .994$ , and expressive-EXPEREXP,  $r = .841$ , expectations) causing a problem of multicollinearity. These results were surprising because the initial exploratory factor analysis suggested that four constructs underlay the expectation variables. As a result, the latent construct spatial expectations was deleted from the model. In addition, the measured variables of property management (AREA) and crowding (CROWDING), and the latent variable (SERVICE) were deleted from the model because of these confounding measurement problems.

The modified model exhibited in Figure 2 demonstrates the changes that resulted from the exclusion of the variables. Two of the statistics suggest a reasonable fit to the data (root mean square residual correlation = .048; adjusted goodness of fit = .907). However the Chi square statistic remains significant and the goodness of fit statistic was weak. Modification of the indices implied that the addition of a correlation between the error terms of personal instrumental expectations (PERSFAC) and interpretive expressive expectations (INFORM) with the error term of satisfaction with an activity would improve the model. This implies that there are variables which were not measured in the items used to calculate personal instrumental expectation, interpretive expressive expectations and satisfaction.

## Model 3

Figure 3 shows the third model, which includes a correlation between the error terms of the measured variables. The statistical change suggests a significant improvement in the model. All statistics were improved by the correlation of the error terms, and the difference between the Chi squares was significant ( $p = .149$ ), indicating that Model 3 provided a significantly better fit to the data than did the model without the correlations (Chi square = 59.28,  $p = .149$ ).

Although all statistics indicated that the model was adequate, the adjusted goodness of fit index (.921) demonstrated that the model needed still further refinement. Further modifications suggested by the program did not make theoretical sense. However, an examination of the  $t$ -values revealed that the paths from trip characteristics to the two latent expectation variables, from past

Table 2. Intercorrelations, Means and Standard Deviations for the Measured Variables

Correlations	Miles	Days	Money	Pastexp1	Pastexp2	Persfac	Noperfac	Interpt	Inform	People
Miles	1.000									
Days	.529	1.000								
Money	.396	.485	1.000							
Pastexp1	-.086	-.056	-.145	1.000						
Pastexp2	-.182	-.086	-.194	.796	1.000					
Persfac	-.022	.003	-.046	.004	-.085	1.000				
Noperfac	-.082	-.036	-.043	.087	-.082	.734	1.000			
Interpt	-.069	-.040	.010	.021	-.090	.461	.491	1.000		
Inform	-.096	-.028	.006	-.026	-.118	.524	.609	.715	1.000	
People	-.041	.089	-.060	.071	.188	.188	.182	.218	.187	1.000
Area	-.023	.017	.032	.004	-.062	.673	.622	.506	.582	.266
Beach	-.099	.020	.011	.027	-.109	.274	.306	.242	.281	.070
Food	-.037	-.071	.019	-.075	-.125	.412	.362	.383	.263	.059
Beachsat	-.057	-.056	-.127	-.035	.017	-.111	-.021	-.093	-.005	-.001
Facsat	.047	-.015	-.006	-.004	-.035	-.301	-.156	-.164	-.134	-.074
Toursat	.032	.148	.160	.044	.084	-.033	-.064	-.027	-.115	-.035
Dosat	-.089	.016	.030	.150	.062	-.221	-.088	-.061	-.180	-.077
Oversat	.089	.009	-.017	-.054	-.075	-.190	-.173	-.140	-.183	-.004
Means	443.50	4.37	40.21	3.53	9.93	5.92	3.75	5.99	3.89	1.69
SD	617.90	5.36	40.33	7.70	20.78	1.81	1.23	1.70	1.26	.66
	Area	Beach	Food	Beachsat	Facsat	Toursat	Dosat	Oversat		
Area	1.000									
Beach	.292	1.000								
Food	.355	.417	1.000							
Beachsat	-.082	.071	-.043	1.000						
Facsat	-.226	.007	-.044	.521	1.000					
Toursat	-.099	.027	.020	.184	.314	1.000				
Dosat	-.227	.062	-.108	.269	.319	.335	1.000			
Oversat	-.217	-.048	-.079	.383	.362	.235	.214	1.000		
Means	5.46	1.85	2.04	16.03	11.32	11.07	11.94	4.24		
SD	1.63	.68	.78	3.59	2.70	4.50	3.94	.97		

Table 3. Fit Statistics for Each Model and the Change among Models

Model	GFI	AGFI	RMSR	$\chi^2$ (df)	<i>p</i>	Change	
						$\chi^2$ (df)	<i>p</i>
Model 1	.933	.886	.045	125.48 (90)	.008	$\chi^2$ (df)	
Model 2	.948	.907	.048	74.55 (51)	.017	50.93 (39)	.096
Model 3	.958	.921	.045	59.28 (58)	.149	15.27 (2)	.000
Model 4	.953	.925	.056	69.51 (58)	.143	10.23 (9)	.332

**Note:** GFI = Goodness of fit, ADGFI = adjusted goodness of fit, RMSR = root mean square,  $\chi^2$  = chi-square statistics, df = degrees of freedom, *p* = probability (significance of chi-square), Change = change in chi-square (degrees of freedom) as adjustments were made to the model.

experience (PASEXP) to instrumental expectations (INSTEXP), from expressive expectations (EXPEREXP) to instrumental (INSTRSAT) and overall satisfaction (OVERSAT), as well as the paths from instrumental expectation to instrumental and overall satisfaction, were insignificant. In an effort to improve the fit of the model, these paths were set to zero. Figure 4 depicts the model with the insignificant paths removed.

#### Model 4

While two of the fit statistics (AGFI and RMSR) suggest that the new model provided a better fit for the data than Model 3, the change was not statistically significant (*p* = .33). Consequently, Model 3 was chosen for interpretation.

#### Interpretation of Model 3

Once an "adequate" fit has been achieved, the next step is to interpret the structural equations. Model 3 suggests that the largest impact on overall satisfaction for this tourist site comes from satisfaction with instrumental factors (INSTREXP, INSTRSAT). However, closer examination provides information on the evaluative processes leading to instrumental satisfaction.

The strongest direct influence on overall satisfaction was instrumental satisfaction (INSTRSAT—path or Beta = .51). It was surprising that expressive

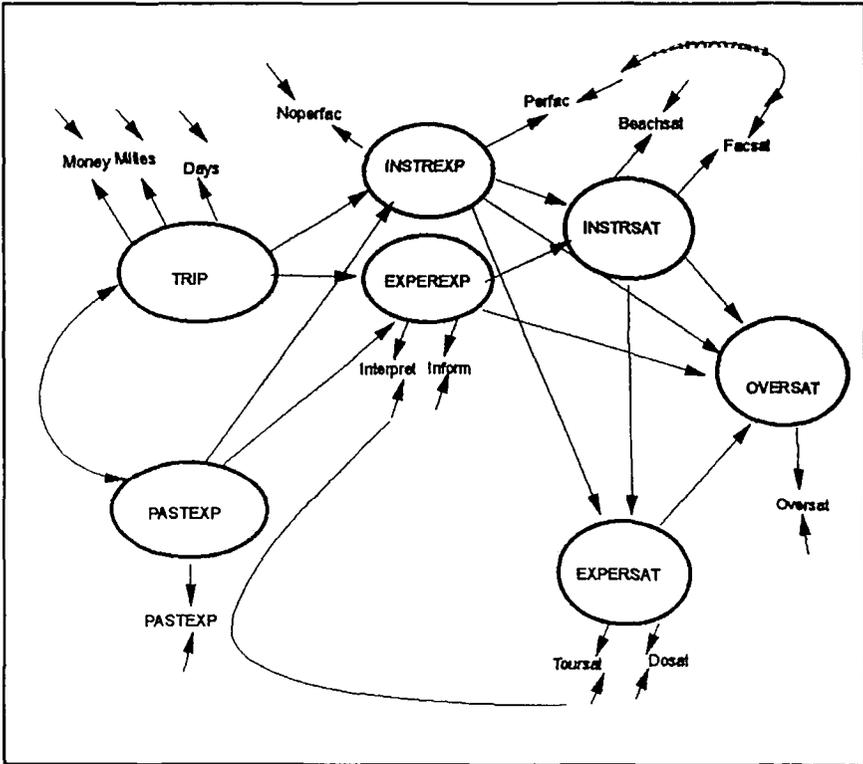


Figure 2. Modified model with space and service removed.

**Note 1:** Fit Statistics: Goodness of fit = .948, adjusted goodness of fit = .907, root mean square = .048, chi-square = 74.55, degrees of freedom = 51.

**Note 2:** Key to Symbols (see Table 1 for more detailed explanations).

satisfaction (EXPERSAT) had an insignificant direct impact on overall satisfaction. Most of the expressive satisfaction was directed through instrumental satisfaction to overall satisfaction (indirect effects = .36).

The paths from the two expectation latent variables offer insight into the evaluative process. While paths leading from instrumental expectations (INSTREXP) to all three satisfaction latent variables are insignificant, the path leading from expressive expectations (EXPEREXP) to expressive satisfaction (EXPERSAT) is meaningful (Beta = -0.39). This is the only significant path leading from expectations to any of the satisfiers. This would suggest that overall satisfaction is influenced by expressive expectations first through expressive satisfaction and finally through instrumental satisfaction. The relatively large size of the negative beta weight and the strong indirect effects of expressive

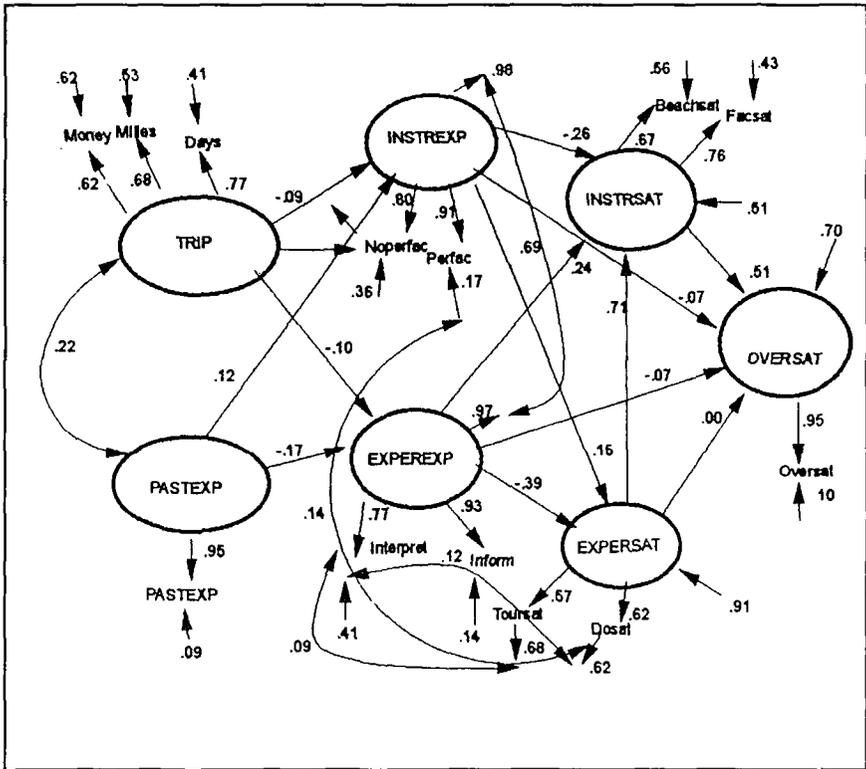


Figure 3. Measured second modified model with the correlations between error terms added and space and service removed.

**Note 1:** Fit Statistics: Goodness of fit = .958, adjusted goodness of fit = .921, root mean square = .045, chi-square = 59.28, degrees of freedom = 49.

**Note 2:** Key to Symbols (see Table 1 for more detailed explanations).

satisfaction on overall satisfaction imply that expressive satisfiers are much more important than is suggested by direct effect measures. The negative direction of the beta indicates that higher expectations will lead to lower satisfaction levels. In other words, unsurprisingly enough, the more visitors expect the less they will be pleased, and the same facilities will be evaluated differently based on expectations. The path from expressive satisfactions (EXPERSAT) to instrumental satisfactions (INSTRSAT) is extremely strong (Beta = .71). This implies that positive experiences will lead to positive evaluations of instrumental factors.

The expectations that have influenced the satisfier latent variables were presumed to have been influenced by past experience and trip commitment variables. However, the model suggests that the only significant impact is on expressive expectations (EXPEREXP) from past experience (PASTEXP). The moderate

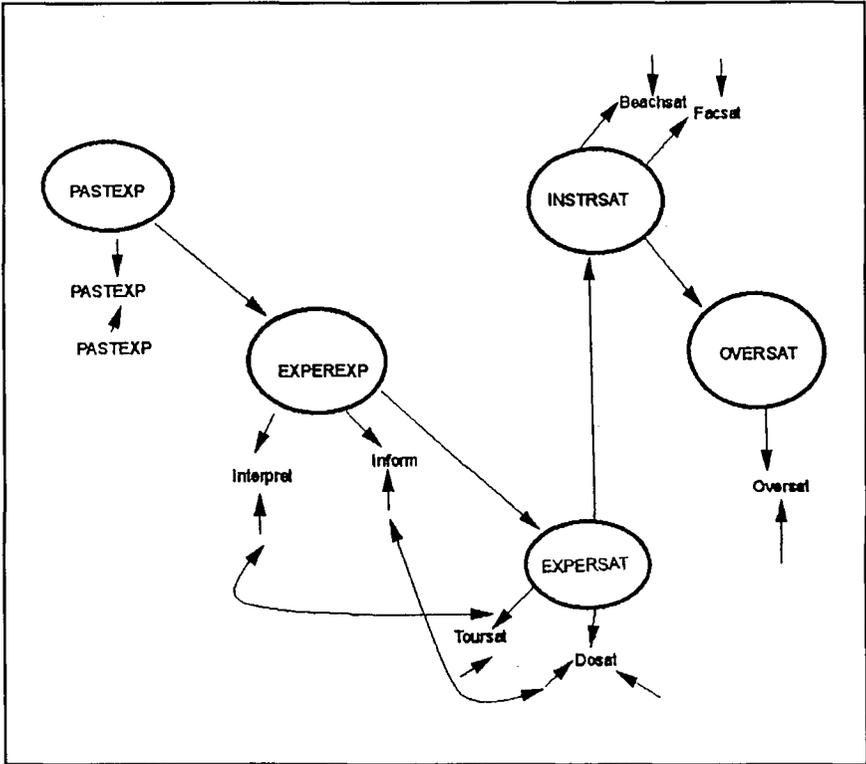


Figure 4. Model with insignificant paths removed.

**Note 1:** Fit Statistics: Goodness of fit = .953, adjusted goodness of fit = .925, root mean square = .056, chi-square = 69.51, degrees of freedom = 58.

**Note 2:** Key to Symbols (see Table 1 for more detailed explanations).

negative (Beta = -0.166) suggests that more frequent visitors have lower expressive expectations.

### IMPLICATIONS

The results of this research imply that instrumental and expressive satisfiers work together to produce overall satisfaction. Marketing strategists must recognize that expressive expectations play an important role in the assessment of satisfaction while instrumental expectations alone are not nearly as important. However, overall satisfaction depends upon instrumental facilitators. Likewise, park managers concerned with the allocation of resources must be careful not to focus on either instrumental or expressive factors exclusively, in light of the

interplay of these variables in influencing how park users evaluate their site experiences.

## REFERENCES

1. G. Everhardt, *Address to Participants of Social Science Short Course*, Virginia TECH, Blacksburg, 1992.
2. T. Egan, National Parks: An Endangered Species, *NY Times*, Monday, pp. 1 and 7, May 27, 1991.
3. M. Healy, Visitors Bring a Pack of Problems to National Parks, *Miami Herald*, Sunday, p. 1, May 15, 1994.
4. M. Healy, U.S. Parks: Not So Great Outdoors, *NY Times*, Tuesday, pp. 1 and 114, May 10, 1994.
5. Editors, Overuse Plagues, Parks Curb Development, *USA Today*, Thursday, p. 14A, May 26, 1994.
6. L. Burnstein, H. E. Freeman, K. A. Sirontic, G. Delanshere, and M. Hollis, Data Collection: The Achilles Heel of Evaluative Research, *Sociological Methods and Research*, 14:1, pp. 65-80, 1985.
7. L. Rutman, *Evaluation Research Methods: A Basic Guide*, Sage Publications, Beverly Hills, 1977.
8. M. Mandell, Estimating the Mediating Effect of Intervening Variables in Pooled Cross-sectional and Time Series Designs: Model Specification and Estimation Procedures, *Evaluation Review*, 13:2, pp. 174-200, 1989.
9. J. Wholey, Evaluability Assessment, in *Evaluation Research Methods: A Basic Guide*, L. Rutman (ed.), Sage Publications, Beverly Hills, 1977.
10. P. Rossi, H. Freeman, and S. Wright, *Evaluation*, Sage Publications, Beverly Hills, 1979.
11. J. Crompton and K. MacKay, Users' Perceptions of the Relative Importance of Service Quality Dimensions in Selected Public Recreation Programs, *Leisure Sciences*, 11, pp. 367-375, 1988.
12. T. More and J. Averill, Satisfaction, Happiness, and Emotion in the Recreation Experience are We Asking the Right Questions?, *The Fourth North American Symposium on Society and Resource Management*, May 17-20, 1992.
13. L. Moln, Affect and Social Exchange: Satisfaction in Power-dependence Relations, *American Sociological Review*, 56, pp. 475-493, August 1991.
14. W. Leiss, *The Limits to Satisfaction*, University of Toronto Press, Toronto, 1979.
15. M. Krieger, What's Wrong with Plastic Trees?, *Science*, 179:4, pp. 46-55, February 1973.
16. S. Linder, *The Harried Leisure Class*, University Press, New York, 1970.
17. Y. Yi, A Critical Review of Consumer Satisfaction, in *Review of Marketing Research 1990*, V. Zeithaml (ed.), American Marketing Association, USA, 1990.
18. S. Iso-Ahola, *The Social Psychology of Leisure and Recreation*, William C. Brown, Dubuque, 1980.
19. M. Uysal, F. P. Noe, and C. D. McDonald, Environmental Attitude by Trip and Visitor Characteristics: US Virgin Islands National Park, *International Journal of Tourism*, 1994.

20. J. A. Czepiel and L. J. Rosenberg, The Study of Consumer Satisfaction, *AMA Educators Proceedings*, American Marketing Association, Chicago, pp. 119-123, 1974.
21. J. Swan and L. Combs, Product Performance and Consumer Satisfaction, *Journal of Marketing Research*, 40, pp. 25-33, April 1976.
22. F. P. Noe, Measurement Specification and Leisure Satisfaction, *Leisure Sciences*, 9, pp. 163-172, 1987.
23. W. Bearden and J. E. Teel, Selected Determinants of Consumer Satisfaction and Complain Reports, *Journal of Consumer Affairs*, 19, pp. 222-240, Winter 1983.
24. R. L. Oliver and G. L. Oliver, Effects of Satisfaction and Its Antecedents on Consumer Preference and Intention, *Advances in Consumer Research*, K. B. Monroe (ed.), Association for Consumer Research, Ann Arbor, Michigan, pp. 88-93, 1981.
25. J. Swan and I. F. Trawick, Automobile Buyer Satisfaction with the Salesperson Related to Equity and Disconfirmation, in *Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, H. K. Hunt and R. L. Day (eds.), Indiana University Press, Bloomington, Indiana, 1981.
26. R. A. Westbrook, Interpersonal Affective Influences on Consumer Satisfaction with Products, *Journal of Consumer Research*, 7, pp. 49-54, June 1980.
27. R. A. Westbrook and R. L. Oliver, Developing Better Measures of Consumer Satisfaction: Some Preliminary Results, in *Advances in Consumer Research*, K. B. Monroe (ed.), Association for Consumer Research, Ann Arbor, pp. 94-99, 1981.
28. R. A. Westbrook and M. D. Reilly, Value Percept Disparity: An Alternative to the Disconfirmation of Expectations Theory of Consumer Satisfaction, in *Advances in Consumer Research*, R. P. Bagozzi and A. M. Tybout (eds.), Association for Consumer Research, Ann Arbor, Michigan, pp. 256-261, 1983.
29. D. Tse and P. Wilton, Models of Consumer Satisfaction Formation: An Extension, *Journal of Marketing Research*, 25, pp. 204-212, May 1988.
30. T. Z. Keith, P. B. Keith, G. C. Troutman, P. G. Bickley, P. S. Trivete, and K. Singh, *Does Parental Involvement Affect Eighth Grade Student Achievement: Structural Analysis of National Data*, presented at the National Association of School Psychologists and the American Educational Research Association, 1992.
31. D. Dillman, *Mail and Telephone Surveys: The Total Design Method*, Wiley, New York, 1978.
32. SPSS, Inc., *SPSS Reference Guide*, McGraw-Hill, Chicago, 1990.
33. K. G. Joreskog and D. Sorbom, *LISREL 7: A Guide to the Program and Applications*, Joreskog and Sorbom/SPSS Inc., Chicago, 1988.
34. O. D. Duncan, D. L. Featherman, and B. Duncan, *Socioeconomic Background and Achievement*, Seminar, New York, 1972.
35. T. Buchanan, Commitment and Leisure Behavior: A Theoretical Perspective, *Leisure Sciences*, 7, pp. 401-420, 1985.
36. W. E. Hammitt, L. R. Knauf, and F. P. Noe, A Comparison of User vs Researcher Determined Level of Past Experience on Recreation Preference, *Journal of Leisure Research*, 21, pp. 202-213, 1989.
37. A. Geva and A. Goldman, Satisfaction Measurement in Guided Tours, *Annals of Tourism Research*, 18, pp. 177-185, 1991.

38. W. F. Van Raaij, Expectations, Actual Experience and Satisfaction, *Annals of Tourism Research*, 14, pp. 141-142, 1986.
39. J. H. Gramann, Toward a Behavioral Theory of Crowding in Outdoor Recreation: An Evaluation and Synthesis of Research, *Leisure Sciences*, 5, pp. 109-126, 1982.

Direct reprint requests to:

Dr. Francis P. Noe  
Research Sociologist  
National Park Service  
Southeast Region  
75 Spring St., S.W.  
Atlanta, GA 30303