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CHI-CHUAN LUE, JOHN L. CROMPTON, AND WILLIAM P. STEWART

Most destination demand models in the tourism and outdoor recreation literature are predicated on the assumption that when travelers leave home, they go to a single destination. This assumption is often fallacious, since many pleasure trips involve visits to multiple destinations. This study provides evidence of multiple destinations offering cumulative attractions within a single trip. Multidestination travel is conceptualized as a constrained choice process in which individuals evaluate travel alternatives as bundles of attributes. Using a multistage sampling technique, each subject was given a unique set of six treatment scenarios composed of three pairs of multidestination trips and asked to rate the likelihood of going on each trip. Three destination attributes, each with two different levels, were used to characterize the destinations: tourism services and facilities, settings for relaxation and sport, and distance between the primary and secondary destinations. Conjoint analysis techniques indicated that preference for a destination was enhanced by inclusion of a combination of destinations.

Existing models of recreational trip decisions generally focus on individuals' formation of a preference ordering for a single destination. However, the assumption that individuals invariably choose a single destination when they go on a recreational trip is unrealistic (Crompton 1990; Hanson 1980; Leiper 1989; Mings and McHugh 1992; O'Kelly 1982; Wall 1978).

The relatively small number of studies that have attempted to investigate multidestination travel may be classified into two categories. One line of research (Cheshire and Stabler 1976; Clough and Meister 1991; Haspel and Johnson 1982; Mendelsohn et al. 1992) has focused on investigations of consumer surplus at a recreational destination. These researchers realized that it was not reasonable to assume a single destination itinerary and a disutility function for the time factor. Those involved with this line of research are interested in modifying the estimation methods to adjust travel cost to account for multidestination trips. Application of the traditional travel cost approach is likely to overstate the estimated consumer surplus for a particular destination when travel costs are shared inseparably between more than one destination (Haspel and Johnson 1982; Clough and Meister 1991).

The other line of research, which is consistent with the study reported here, has focused on the spatial patterns of recreational travel or the relationships between probable destinations on a trip. This group of researchers (Baxter and Ewing 1981; Cooper 1981; Ewing and Baxter 1981; Mings and McHugh 1992; Pearce and Elliott 1983; Rugg 1973; Smith and Smith 1978; Wall 1978) have examined the behavioral construct of multidestination trips in the context of recreation. These authors have recognized that multidestination trips should be modeled separately from single destination trips because of their differing characteristics and prevalence in recreational travel.

Chi-Chuan Lue is an Associate Professor in the Department of Forest Resources Management and Technology at the National Ping-Tung Polytechnic Institute in Taiwan. John L. Crompton is a Professor and William P. Stewart is an Associate Professor in the Department of Recreation, Park and Tourism Sciences at Texas A&M University in College Station.

As suggested by Nelson (1958), the cumulative attraction of a multidestination trip is likely to be greater than would be the attraction of each of the destinations when they are visited as single trips. In a development context, this indicates that a set of recreational destinations may do more business when they are located in proximity to each other than when they are widely scattered. Four reasons contribute to explaining this phenomenon. First, an individual may seek an array of benefits from a trip that cannot be met by a single destination (Buchanan 1983). The greater the number of benefits sought, the more likely it is that a variety of destinations will be incorporated into the trip. Second, people traveling together, whether in a small family unit or in a larger tour group, are likely to seek different benefits from a trip and these may be best met by a variety of destinations in the same area (Fesenmaier and Lieber 1988). Third, the presence of a number of secondary destinations in an area may be perceived by individuals to reduce their uncertainty and level of risk. If the primary or one of the secondary destinations fails to deliver the expected benefits, then other alternatives are available. Fourth, incorporating several destinations into a single trip may be perceived as being cost-efficient.

A few empirical studies in outdoor recreation have responded to the challenging task of modeling multidestination trips (Baxter and Ewing 1981; Leiper 1989; Pearce and Elliott 1983; Wall 1978). Wall (1978) reported that the majority of visits to a national park were likely to be part of multidestination trips. He suggested that in these circumstances, other nearby destinations might be compatible with one another and act as stepping stones rather than competitors (Mendelsohn et al. 1992).

A modified trip distribution model based on visiting multiple destinations on recreational day-trips was incorporated into Baxter and Ewing's (1981) study to correct problems of misspecification arising from many of their respondents' trip itineraries having several stops and being circuitous. They reported that the multistop model improved estimates of zone attractiveness and reduced the systematic misrepresentation of destination attraction prevalent in the more usual origin-destination model. They noted that patterns of trip taking were very much dependent on the types of destinations available, their accessibility from different origins, and the type of area in which the origin was located.

These studies suggest that it is not possible to meaningfully understand multidestination travel behavior without recognizing that there is likely to be a cumulative attraction across probable destinations. As Wall (1978) pointed out, "Recreation sites do not exist in isolation. . . .patronage of any particular recreation site and the activities undertaken there only partially reflect the intrinsic characteristics of that site. Patrons are also influenced by opportunities available at other sites" (p. 35).

Five distinctive spatial configurations of destinations and origin have been identified by Lue, Crompton, and Fesenmaier (1993): (1) single destination; (2) en route, whereby stops are made on the way to or from a single primary destination; (3) base camp, in which tourists stay at one primary destination and make visits from it to other places in the area; (4) regional tour, which involves traveling directly to a region, sequentially visiting a number of destinations in the area, then returning directly to the origin; and (5) trip-chaining, which involves visiting multiple destinations and going from one to another, rather than having a single focal destination or area. In four of the multidestination patterns included in this taxonomy, recognition should be given to the relative location of a destination with respect to other destinations in the spatial framework (Fotheringham 1983, 1984). "Intuitively it seems reasonable to expect destination choice to be affected by the spatial relationship between destinations" (Fotheringham 1985, p. 214).

The experiment reported here was derived from the base camp spatial configuration, which is characterized by a distinctive primary destination that has a variety of secondary destinations in reasonable proximity. In this context, variation of the combination of attributes associated with secondary destinations is expected to influence the likelihood of making multidestination trips (Kitamura 1984; Fotheringham 1985; Kim and Fesenmaier 1990).

SPECIFICATION OF THE MODEL

Previous research has demonstrated that tourism destinations possess multiple attributes that induce a variety of benefits. The multiattribute approach to modeling visitor destination preferences has received considerable attention in the literature. The modeling process generally involves estimation of visitor preference structures (e.g., assessing importance weights of travel-related factors and destination attributes) and specification of representational models reflecting visitor evaluation of a single destination (Goodrich 1978; Scott, Schewe, and Frederick 1978; Peterson, Dwyer, and Darragh 1983; Stynes and Peterson 1984; Perdue 1986; Woodside and Lysonski 1989). This study extends the traditional approach by modeling multidestination choice.

Destination choice is modeled in this article as a function of destination attributes and their perceived importance. The destination rated highest in total scores across attributes was viewed as possessing the highest preference among alternatives as tested by selected decision rules. Some have suggested that destinations are evaluated not according to linear combination rules, but by noncompensatory choice processes (Foerster 1981). Other researchers, however, have reported that simple linear models have sufficient ability to predict actual decisions and evaluations (Huber 1974; Klahr 1969; Reker and Schuler 1981). In this study, a compensatory approach was assumed because it is prevalent in the literature to use an additive preference function in multiattribute preference analysis (Louviere and Timmermans 1990) and in discrete choice analysis (Ben-Akiva and Lerman 1985).

The structure of this model is derived from Lancaster's demand theory (Lancaster 1966). Individual choice behavior in a multidestination context is considered to be conditional on a set of objective attributes of spatial alternatives and a set of constraint scenarios by which individuals evaluate the alternatives and integrate the spatial alternatives in their choice set.

The model rests on three important assumptions. First, it is assumed that there are a finite set of travel destinations in the study area. Each travel destination is characterized by a set of attributes, of which people consider only a subset when making their decisions. Second, it is assumed that individual choice behavior is founded on subjective evaluations of the attribute levels of the choice destinations. This evaluation typically involves a subjective filtering based on imperfect information. A complete understanding of destination choice requires identification of the perceived level of a destination's attributes and an individual's ability to differentiate among different perceived levels. Thus, subjective evaluation of attributes is functionally related to the objective values of these attributes. The final major assumption concerns the way in which individuals combine their subjective evaluations of attributes with an evoked set of destinations. It is assumed that an individual attains an overall preference judgment by cognitively integrating the separate subjective evaluations of destination attributes.

METHODS

Research Design

The number of attributes and levels of each attribute in a research design are constrained by the number of treatment combinations that can be accommodated within the time and financial parameters available for the research. In this study, these constraints led to a decision to construct treatment combinations that used three attributes, each with one of two possible levels. The three attributes were derived empirically in the process of instrument development.

The literature identified attractiveness as being influential in the decision making of pleasure travelers, so attributes were generated relating to attractiveness of destinations. Since the number of destination attributes associated with attractiveness was large, a factor analysis was employed to reduce this number and to identify attributes that could be perceived as being related to one another. The experiment was designed based on the two major factors that emerged from the factor analysis. These were used as two of the destination attributes, while the third attribute in the experiment referred to distance between the primary destination and secondary destinations. Two levels for each of these three attributes were specified for the treatments. Thus, eight (2^3) uniquely specified treatments were constructed in the complete factorial design (Table 1).

TABLE 1

LEVEL OF TOURISM SERVICES AND FACILITIES

	Low		High	
	Level of Relaxation and Sport		Level of Relaxation and Sport	
	Low	High	Low	High
Distance between primary and secondary destinations: Less than 100 miles	O	X	X	X
Distance between primary and secondary destinations: More than 100 miles	X	X	O	O

O = Omitted from experiment.
X = Treatments.

Note: This figure indicates that scenarios with one secondary destination had 5 different alternatives, and scenarios with two secondary destinations had 10 different alternatives. Since each subject received one pair of scenarios with one secondary destination and two pairs with two secondary destinations, 450 [$5 \times 10 \times (10-1)$] possible unique sets of scenarios were generated. In addition, each pair of scenarios contained two levels of expenditure/time constraints, resulting in 900 (450×2) possible sets of six scenarios.

Although this is a $2 \times 2 \times 2$ factorial design, the study was simplified by eliminating the investigation of the effect, and any interaction effects, of three of the eight possible treatments (Table 1). The extreme treatments (i.e., the two treatments involving either all high or all low levels of each attribute) and a treatment that closely resembled the primary destination were eliminated from empirical investigation. Using a combination of only extreme levels of the attributes (i.e., the lowest level of each attribute and the highest level of each attribute) was considered likely to provide limited insights into trade-offs in the choice process. Extreme levels of factors often receive a consensus response of extreme valuations, and in such cases variance of these levels of the attributes is limited. In addition, if an inclusive factorial design had been used, the magnitude of the experiment would have demanded many more subjects, leading to both logistical and financial problems. The third treatment was omitted as a result of pretest findings that suggested that one of the hypothetical destinations included in the complete factorial design was similar to the primary destination.

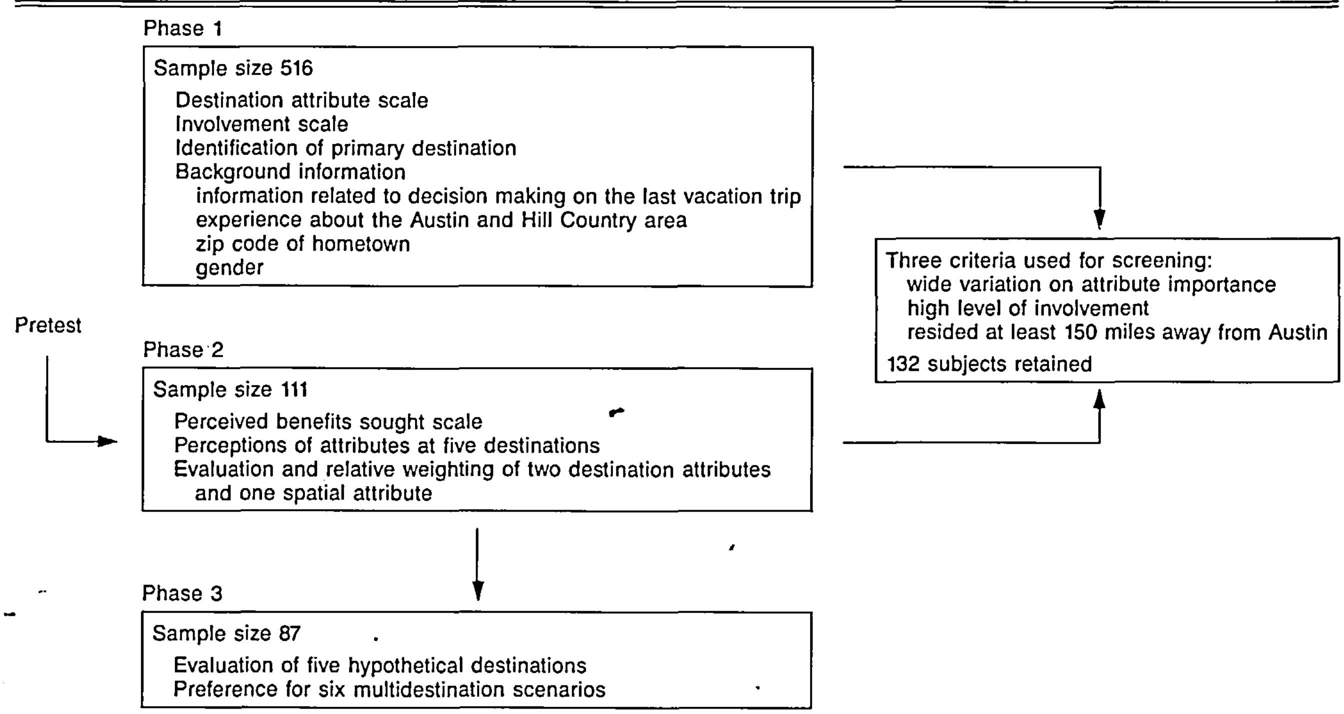
Sample Selection and Data Collection

A student sample from Texas A&M University was used for the study; the city of Austin, Texas, and its Hill Country area (located approximately 100 miles from the university) was selected as the destination area since it was well-known to the students. An available student sample was considered appropriate based on the reasoning that empirical testing of conceptual relationships should attempt to reduce the amount of variance in a sample contributed by variables, such as sociodemographics, that are not experimental variables of interest (McGreth and Brinberg 1983).

Data collection was undertaken in three chronological phases. (This sequencing is shown in Figure 1.) The purpose

FIGURE 1

FLOW CHART OF DATA COLLECTION PROCEDURES



of the first two phases was to select the sample and develop the instrument for the experiment that constituted the final phase in this sequence. First, 516 students completed a self-administered questionnaire. Phase 1 incorporated an importance scale associated with a set of destination attributes that the literature suggested were important when individuals selected a destination; a scale measuring level of involvement in their previous travel decision-making processes, an open-ended question designed to identify the most popular primary destination in the Austin/Hill Country area, and background information.

Three of the background questions were used to screen for appropriate subjects. Those who (1) reported a relatively high level of involvement in decision making, (2) were resident in a home town located at least 150 miles from Austin, and (3) offered a relatively wide variation in responses to the importance of various destination attributes were retained for Phase 2 of the study.

To identify subjects associated with a high level of involvement, an eight-item involvement scale was used, which was originally developed by Zaichkowsky (1985) and subsequently adapted for use in a recreation context by Dimanche, Havitz, and Howard (1991). The involvement scale incorporated three dimensions: risk associated with choosing a vacation destination, importance of vacation travel, and extent of information search. The existence of these three dimensions in this sample was confirmed by a principal components factor analysis with varimax rotation. Each individual's score on the eight items was summed and a cut-off point was established representing the minimum level of involvement score acceptable for remaining in the sample.

The second criterion was adopted in response to the suggestion by Kim and Fesenmaier (1990) that the cumulative attraction of destinations located in relatively close proximity will be maximized in situations where visitors' origins are at least 150 miles from the destination area. Since this study focused on understanding such relationships, initial screening of subjects was intended to identify those who were most likely to perceive a cumulative attraction of destinations.

The third screening criterion assured wide variation in the importance that respondents attached to the attraction attributes. Wide variation on these experimental variables was necessary to examine evidence for cumulative attraction.

As a result of the screening procedures in Phase 1, 132 subjects were identified as qualified to participate in Phase 2 of the study. Usable responses in Phase 2 were collected from 111 of the qualified subjects. For the first part of the Phase 2 survey (Figure 1), subjects were requested to respond to a series of scale items that measured benefits likely to be sought on a summer pleasure trip to the Texas Hill Country area. Then they were asked to evaluate five popular destinations in the Texas Hill Country and assign desirability and importance to the two levels of the specified destination attributes associated with each destination that had been empirically derived from the first phase of data collection.

The Phase 3 instrument constituted the experimental treatments. Data were collected from 87 of the 111 subjects still eligible, but three of these were discarded because they were not completed appropriately. The data collected in Phases 1 and 2 were used to develop the scenarios that comprised the treatments in the Phase 3 instrument. These scenarios involved using Austin (which the study sample had reported in Phase 1 was the destination in the Hill Country area they would most consider visiting) as a primary destination, and one or two secondary hypothetical destinations that the scenarios described as being located near Austin (see the example of a study scenario in the Appendix).

As part of Phase 3, each subject was presented with a set of 12 scenarios, composed of different descriptions of a multi-destination trip. The first three scenarios were used for subjects to learn how to do the task (Meyer 1977), since making judgments on these scenarios requires considerable mental effort. A second set of three scenarios were used or "held out" for validation purposes. These two sets of three scenarios were assigned to every subject and accompanied by one of the two levels of the duration/cost constraint that were randomly assigned. The remaining six scenarios were used to test the choice decision using conjoint measurement.

Identification of Destination Attributes

In the literature on the attraction of tourism destinations, there appears to be general agreement regarding the destination attributes considered attractive (Gearing, Swart, and Var 1974; Lew 1987; Mill and Morrison 1985; Pearce 1982; Ritchie and Zins 1978). A review of these sources suggested that five types of general destination characteristics have been identified: (1) natural resources; (2) cultural and social characteristics; (3) sport, recreation, and educational opportunities; (4) shopping opportunities and commercial facilities; and (5) accommodation and infrastructure facilities. A list of 12 attributes characterizing potential recreational travel destinations and derived from this review of the literature, was used to operationalize these five types of destination characteristics.

The Phase 1 sample of 516 reported the degree of importance they attached to each attribute when evaluating possible destinations for a pleasure trip. Principal components factor analysis with varimax rotation was conducted on responses to the importance of the 12 attributes. The three factors that emerged were "tourism services and facilities" (i.e., shopping opportunities and facilities, availability of suitable accommodation, availability of nighttime entertainment, and cuisine); "historical and cultural attractions" (i.e., historical attractions and cultural opportunities); and "settings for relaxation and sport" (i.e., scenery, opportunities for rest and relaxation, climate, and sporting opportunities). Available resources made it possible to include two of these three factors representing attributes into the experiment. Results of modeling the evaluation process in a pretest suggested that historical and cultural attractions did not contribute to the variance of destination evaluation as much as the other two attributes. Thus, tourism services and facilities and settings for relaxation and sport were selected as the two destination attributes used as treatments, together with an a priori-developed spatial attribute that referred to the distance between the primary and secondary destinations.

Development of Experimental Treatments

The two destination attributes were operationalized at two levels: relatively few and a very large number. The spatial attribute was operationalized at two levels: less than 100 miles and more than 100 miles between primary and secondary destinations to enhance the reality of the treatment scenarios. Two levels of duration and cost of trip were incorporated as constraints into the scenarios: three days/$150 and five days/$250. All subjects received scenarios that showed a common destination, the city of Austin, as their primary destination.

The secondary destinations appearing in the scenarios were composites compiled to meet the researchers' specifications.

In Phase 3, each subject was given a set of six treatment scenarios that were composed of three pairs (i.e., three pairs of two scenarios equals six treatments). One pair consisted of two destinations (the primary destination and one secondary destination) and two pairs of scenarios contained three destinations (the primary destination and two secondary destinations). The two scenarios of each pair were identical except for different levels of the expenditure/time constraint.

Preference for any given trip was operationalized as the reported likelihood of traveling on a trip described by the study's scenarios. A unique set of six scenarios was assigned to each subject. The set for each subject was randomly drawn from a pool of 900 possible sets of six scenarios that was developed from the research design (see Table 1). A random digit table was used to select the scenarios used in the experiment. Subjects indicated the likelihood of their engaging in each of the six scenarios on an 11-point likelihood-of-engaging scale (Fishbein and Ajzen 1975), where 0 = "I will definitely not go on this trip" and 10 = "I will definitely go on this trip."

RESULTS

The first step in the analysis was to conduct a check to ensure that respondent preferences were significantly related to attribute level. Support for this relationship is important to the investigation of the cumulative attraction of multi-destination trips. If a significant relationship were not found, the interpretation would be that although subjects report preferences for various multidestination trips, the variation on the levels of an attribute do not affect the outcome of decisions. It could be that some subjects were sensitive to whether the attribute was present, rather than whether the attribute was present in low or high amounts. Since the latter condition represents the manipulations of interest in this study, establishing the significance of the relationships between preferences and level of attributes was considered an essential initial step.

Conjoint analysis was used to estimate parameters in the decision-making process involving variation on the destination attributes. Conjoint measurement is concerned with simultaneously measuring the combined effect of two or more independent variables on the rank ordering or rating of a dependent variable. It provides a means of estimating the part-worth preferences for various attributes of multiattribute destinations. Responses to the multidestination scenarios were used to classify subjects into relatively homogeneous groups in terms of their preference rating patterns by using Ward's hierarchical clustering technique. Three clusters were obtained based on a cubic cluster criterion and changes in the r^2 value. Since each subject may have a different range of scores on the 0–10 rating scales, the variation in ratings across subjects tends to affect the variation in ratings across scenarios. To improve reliability of estimation, the accepted practice of developing cluster variables was incorporated into the analysis (Cattin 1981; Hagerty 1985).

The analysis showed a substantial relationship between preference and levels of each attribute. In the single secondary destination scenarios, tourism services and facilities and settings for relaxation and sport were statistically significant at the .05 level, but distance between the secondary destination and Austin was not significant (Table 2).

TABLE 2

A CONJOINT MODEL FOR THE SINGLE SECONDARY DESTINATION SCENARIOS WITH A CLUSTER VARIABLE

Dependent variable: Likelihood to go on the trip

Source	*df*	Sum of Squares	Mean Square	*F*-Value	Prob.
Model	6	729.05	121.51	39.53	.0001
Error	161	494.85	3.07		
Corrected total	167	1223.91			

R^2 = .5957

Variables	*df*	Parameter Estimates	Standard Estimate	*T*-test	Prob.	Type II SS
Intercept	1	1.50	0	2.86	.0049	25.06
M1	1	1.05	0.19	3.87	.0002	46.10
M2	1	0.96	0.18	2.41	.0173	17.79
M3	1	0.34	0.06	0.85	.3958	2.23
M4	1	1.40	0.26	4.25	.0001	55.46
U	1	3.53	0.64	9.97	.0001	305.21
V	1	0.20	0.03	0.46	.6447	0.66

Key:
M1 = expenditure/time constraint.
M2 = tourism services and facilities.
M3 = distance between a secondary destination and Austin.
M4 = settings for relaxation and sport.
U and V = dummy codings for the cluster variable.

In the scenarios with two secondary destinations, the results shown in Table 3 indicate that all variables were statistically significant at the .05 level except tourism services and facilities and distance between the secondary destination and Austin for the second secondary destination (i.e., B) in the scenarios. The spatial attribute distance between the secondary destination and Austin was operationalized inversely, in that more than 100 miles was coded 0 and less than 100 miles was coded 1. The parameter estimate for the spatial attribute of the first secondary destination had a significant positive value, and the parameter estimate for the spatial attribute of the second destination was not significant.

> Hypothesis: In a situation in which there are two secondary destinations associated with a primary destination, there will be a significant interaction effect between perceived attributes of the two secondary destinations.

Support for this hypothesis was essential for indicating that destinations provide a cumulative attraction with one another. Significant coefficients of the secondary destination attribute dummy variable, along with a significant interaction term, would suggest that subjects respond to the combination of levels of attributes across the two secondary destinations. It is expected that the likelihood of traveling on the trip would increase due to the combination of attributes, all else being equal. Preference for the combined level of attributes of both secondary destinations would be greater than the sum of preferences for the level of attributes of each secondary destination.

To examine the extent to which there was such a relationship, interaction terms of the two attributes (i.e., tourism services and facilities and settings for relaxation and sport) associated with the two secondary destinations were included in the model. It was not possible to test for an interaction

TABLE 3

A CONJOINT MODEL FOR THE TWO SECONDARY DESTINATION SCENARIOS WITH A CLUSTER VARIABLE

Dependent variable: Likelihood to go on the trip

Source	*df*	Sum of Squares	Mean Square	*F*-Value	Prob.
Model	9	802.58	89.16	27.75	.0001
Error	326	1047.61	3.21		
Corrected total	335	1850.19			

R^2 = .4338

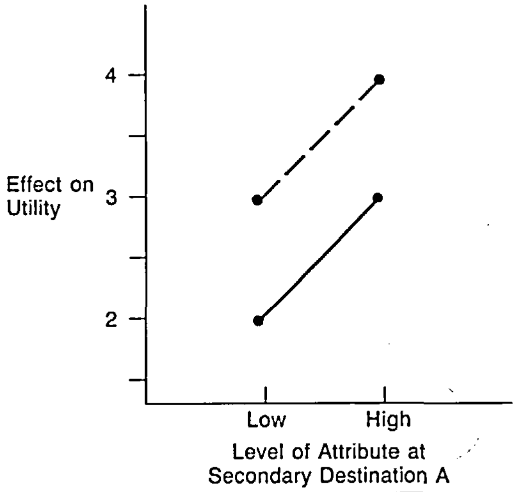
Variables	*df*	Parameter Estimates	Standard Estimate	*T*-test	Prob.	Type II SS
Intercept	1	0.71	0	1.30	.1934	5.46
N1	1	1.73	0.37	8.86	.0001	252.03
N2	1	1.00	0.21	3.26	.0013	34.05
N3	1	0.86	0.18	2.72	.0018	23.77
N4	1	1.05	0.22	4.66	.0001	69.64
N5	1	0.27	0.05	0.89	.9210	2.54
N6	1	−0.16	−0.03	−0.53	.3528	0.90
N7	1	0.74	0.15	3.21	.0436	33.19
U	1	2.77	0.58	10.92	.0001	382.97
V	1	2.86	0.49	9.11	.0001	266.48

Key:
N1 = expenditure/time constraint.
N2 = tourism services and facilities for secondary destination A.
N3 = distance between a secondary destination and Austin for secondary destination A.
N4 = settings for relaxation and sport for secondary destination A.
N5 = tourism services and facilities for secondary destination B.
N6 = distance between a secondary destination and Austin for secondary destination B.
N7 = settings for relaxation and sport for secondary destination B.
U and V = dummy codings for the cluster variable.

FIGURE 2

THE NULL HYPOTHESIS ILLUSTRATED: NO EFFECT OF CUMULATIVE ATTRACTION

	Hypothetical Attribute	
	Secondary Destinations	
Effect on Utility	A	B
2.0	low	low
3.0	high	low
3.0	low	high
4.0	high	high



Note: Level of attribute at secondary destination B denoted by —— low, — — — high.

relationship involving distance between a secondary destination and Austin because of the limitations of the experimental design. *Thus, only responses from scenarios with two secondary destinations were retained for analysis.* Results shown in Table 4 indicate that the interaction term of tourism services and facilities between the two secondary destinations was significant at the .05 level, while the interaction term of settings for relaxation and sport between the two secondary destinations was marginally significant (p = .06).

The negative interaction coefficients imply that cumulative attraction is not at its highest point when *both* secondary destinations are associated with a high level of the attributes. Since dummy coding was used to represent level of attribute (0 = low, 1 = high), the interaction term enters the equation only in the case of both destinations being associated with the high level of attribute. In other words, cumulative attraction is greatest when the secondary destinations are distinguished from each other by level of attribute (as indicated by a combination of low and high levels of attribute) rather than being similar to one another on level of attribute.

Figure 2 illustrates the null hypothesis that cumulative attraction does not exist. That is, the null hypothesis indicates that the effect of the combination of attributes on preference is the sum of their individual effects. Thus, when the level of the attribute for both secondary destinations is low/low, preference is lowest; when the level is high/high, preference is highest; and for both levels low/high and high/low, utility is halfway between. However, the findings from Table 4 indicate a rejection of this null hypothesis; the results are illustrated in Figure 3 and Figure 4. Figure 3 indicates the most dramatic cumulative attraction effect regarding the attribute tourism services and facilities and its combination of levels between secondary destinations A and B. (Note that the greatest effect on preference is with the combination high/low, respectively, which is significantly greater than the combination of high/high). Thus, for this attribute and its combinations between secondary destinations, subjects' preferences were higher than would be indicated by the simple sum of preferences across destinations. Although not as substantial, Figure 4 also indicates a nonadditive effect regarding the attribute settings for relaxation and sport.

Validation Tests and Limitations

To assess the efficacy of the preference function derived from modeling the choice process, the parameters of the function estimated from the six scenarios were used to predict responses on the three common scenarios (included in the Phase 3 instrument for validation purposes). These three common scenarios were given to all 88 subjects in the final experiment. The extent of agreement between each of these predicted ratings (i.e., those that were derived from the modeling process) and the actual ratings of the three validation scenarios was calculated using product moment correlations. The correlations between the observed and estimated values of the three scenarios (.18, .44, and .48) provided indexes of the model's goodness of fit. The mean product moment correlation of .37 for the three holdout scenarios, when compared to the predicted evaluations for calibrating the model, was considered acceptable. It is comparable to correlations accepted for validation purposes that have been reported in the marketing literature. For example, Akaah and Korgaonkar

(1983) reported correlations varying from .25 to .37 that were considered to be acceptable, as was Green, Goldberg, and Montemayor's (1981) correlation of .43, which they used to support their argument for an internally valid model.

Two other tests offered evidence of consistency and contributed to validating the models. First, signs of the estimated parameters were consistent with a priori expectations (see Tables 2 and 3). Second, importance weights of the three attributes derived from the conjoint models (Tables 2 and 3) were consistent with the importance weights obtained through a constant-sum scale procedure that was included in the Phase 2 instrument. This required subjects to distribute 100 points across three attributes: tourism services and facilities, settings for relaxation and sport, and distance between a secondary destination and a primary destination, to reflect their relative importance when selecting a destination for a pleasure trip.

Although the validation tests support the model as developed from the data set, the data set does have some limitations. Destination attributes, as presented to the subjects, were actually bundles of implied attributes rather than singular specific attributes (see the Appendix). As such, the reliability of the measures of the perception of attributes may be weakened, and the meaning of the attribute constructs may be less definitive, to the extent of intersubject differences in attribute interpretation. In addition, the data set was developed from student responses to hypothetical scenarios rather than from the responses of actual travelers to real destination choices. Thus, the generalizability of this study may be weakened to the extent that the hypothetical and real destination choices differed from each other. Finally, multistage sampling involving the same subjects may be problematic (Shimp, Hyatt, and Snyder 1991), because the study results may be artifacts of the design rather than of subject characteristics (i.e., some subjects may have discerned the hypotheses).

DISCUSSION

A major finding of this study was that differences in levels of attributes used to characterize destinations had significant effects on the decision to travel. Although previous studies have reported that individuals distinguish between attributes of tourist destinations, whether individuals distinguish between levels of attributes has rarely been addressed (for an exception, see Woodside and Muhlbacher 1989). For the sampled subjects, the results of this study indicated that the effects of the levels of the attributes varied with the number and nature of secondary destinations included in the scenarios. In the two scenarios that contained only a single secondary destination, the levels of both destination attributes had significant effects; but variation on the levels of the spatial attribute had no significant effect on the destination decision. On the other hand, in the four scenarios with two secondary destinations, the effects of variation in the levels of all three attributes were significant for one of the secondary destinations; however, only variation in the level of settings for relaxation and sport significantly influenced likelihood to travel to the other secondary destination. In addition, it possessed the most

TABLE 4

RESULTS OF THE CONJOINT MODEL WITH SELECTED INTERACTION TERMS

Dependent variable: Likelihood to go on the trip

Source	*df*	Sum of Squares	Mean Square	*F*-Value	Prob.
Model	9	416.00	46.22	10.51	.0001
Error	326	1460.94	4.40		
Corrected total	335	1850.19			

R^2 = .2248

Variables[a]	*df*	Parameter Estimates	Standard Estimate	*T*-test	Prob.	Type II SS
Intercept	1	2.18	0	−3.23	.1364	45.85
D	1	1.73	0.37	7.57	.0001	252.03
A	1	1.57	0.33	4.09	.0004	73.66
B	1	1.06	0.22	2.87	.0018	36.34
C	1	1.88	0.39	4.13	.0001	75.00
E	1	0.51	0.10	1.26	.9210	6.95
F	1	−0.29	−0.06	−0.84	.3528	3.10
G	1	1.29	0.27	2.72	.0436	32.42
AE	1	−1.19	−0.16	−2.17	.0304	20.79
CG	1	−1.05	−0.21	−1.87	.0631	15.30

[a] Each variable was dummy coded by 0 and 1.

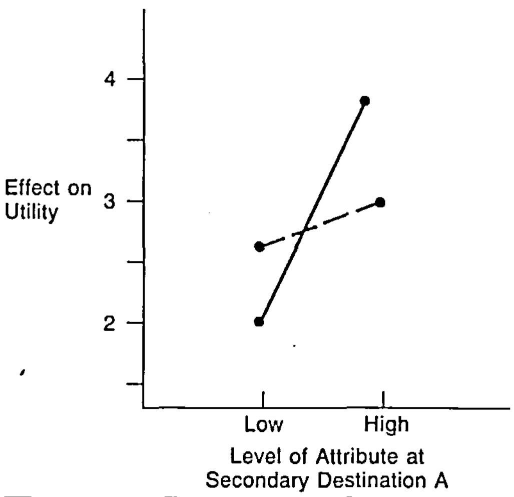
Key:

D = expenditure/time constraint.
A = tourism services and facilities for secondary destination A.
B = distance between a secondary destination and Austin for secondary destination A.
C = settings for relaxation and sport for secondary destination A.
E = tourism services and facilities for secondary destination B.
F = distance between a secondary destination and Austin for secondary destination B.
G = settings for relaxation and sport for secondary destination B.
AE = interaction term for destinations A and E.
CG = interaction term for destinations C and G.

FIGURE 3

CUMULATIVE ATTRACTION BETWEEN THE TOURISM SERVICE AND FACILITIES AT TWO SECONDARY DESTINATIONS A AND B

	Hypothetical Attribute	
	Secondary Destinations	
Effect on Utility	A	B
2.18	low	low
3.75	high	low
2.69	low	high
3.07	high	high

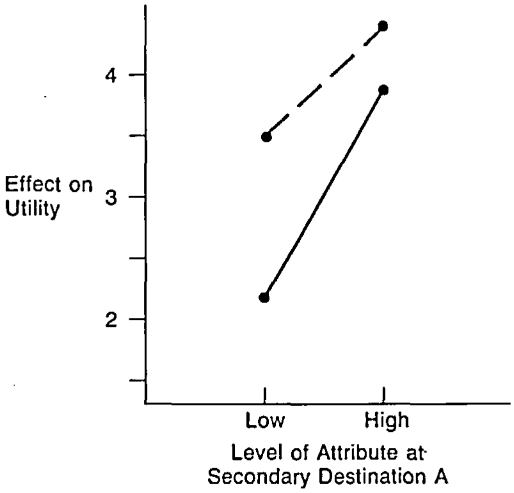


Note: Level of attribute at secondary destination B denoted by ——— low, — — — high.

FIGURE 4

CUMULATIVE ATTRACTION BETWEEN THE SETTINGS FOR THE RELAXATION AND SPORT AT TWO SECONDARY DESTINATIONS A AND B

Hypothetical Attribute		
	Secondary Destinations	
Effect on Utility	A	B
2.18	low	low
4.06	high	low
3.47	low	high
4.30	high	high



Note: Level of attribute at secondary destination B denoted by —— low, — — — high.

important weight (part-worth) among all the parameter estimates. Thus, parameters that characterize settings for relaxation and sport appear to be an important influence in multidestination recreational trip decisions for the subjects of this study. The effects of the other two perceived attributes were dependent on the number of secondary destinations included in the scenarios.

Another major finding of the study concerns the enhanced preference, or cumulative attraction, of a combination of destinations. The results from testing the hypothesis indicated that the coefficients of the attribute dummy variable associated with the secondary destination were significant and positive, and that the interaction terms of both perceived destination attributes were significant and negative. This suggests that subjects were more likely to go on a trip that included two *different* secondary destinations than a trip of two *similar* secondary destinations. In this sense, the cumulative attraction of a multidestination trip to two different secondary destinations was greater than the cumulative attraction of a multidestination trip to two similar secondary destinations.

Although the sample selection process was directed at including subjects most sensitive to concepts of this study, there are some general implications that could be speculated. Most tourism marketing activity at the state or regional level involves developing destinations and persuading tourists to choose such destinations. A destination can be better matched to a target market's need if funds are allocated to fashion the attractions that the target market desires. This funding allocation will be more effective if there is a better understanding of the relative contribution of perceived destination attributes and their trade-offs in the destination selection process, as well as the cumulative attraction that exists between destinations.

Tourism market research involves not only identifying parameters of a target market in terms of its consumers and competition, but also carefully designing a destination product that is consistent with its natural advantages and existing image. Destination marketing is likely to be most effective when cooperative rather than competitive strategies for tourism are developed in the same geographic area. This involves positioning destinations in a regional context and recognizing existing attractions and potential cooperative opportunities in the geographic market. For instance, the town of Fredericksburg, Texas, is famous for its historical sites. Developing accommodations in old buildings may be a better strategy for Fredericksburg than encouraging traditional accommodation development (e.g., motels) because Austin, which is 80 miles east of Fredericksburg, has substantial traditional motel development. In short, it is not necessary or always in the best interest of tourism development for every destination to provide the gamut of visitor services.

Demand forecasting in recreation and tourism has constituted a substantial component of the literature. The ability to forecast tourism demand accurately in the context of a changing environment is a growing imperative. This implies a need to extend the effort invested in developing and testing multidestination models.

APPENDIX

STUDY SCENARIO EXAMPLE

Instruction: Imagine a summer pleasure trip is coming. You are planning a pleasure trip to visit two or three destinations in the Austin and Hill Country area for this summer vacation. Austin is your primary destination for this trip. In addition to Austin, you want to visit other secondary destination(s) on your trip. On the following pages 12 pleasure travel scenarios are described. These pleasure trips are *simulated*, but we would like to know how you would react to them if you actually experienced the situations depicted in each scenario. All the scenarios use similar descriptions, so they sound somewhat repetitive. However, each one is *different* in some way.

In this scenario, Austin is your primary destination. In addition to Austin, there are two places (A and B) you are planning to visit as secondary destinations which are located nearby Austin. You have *$150 and 3 days* to spend on this total trip.

- AUSTIN
- Destination A has the following characteristics:
  - –relatively few tourism facilities and services (e.g., shopping opportunities, accommodations, nighttime entertainment, and cuisine),
  - –relatively few settings for relaxation and sport (e.g., climate, scenery, hills, lakes, and rivers), and
  - –less than 100 miles from this destination to Austin.
- Destination B has the following characteristics:
  - –a large number of tourism facilities and services (e.g., shopping opportunities, accommodations, nighttime entertainment, and cuisine),

-relatively few settings for relaxation and sport (e.g., climate, scenery, hills, lakes, and rivers), and
-more than 100 miles from this destination to Austin.

Please *circle one* number on the scale that indicates the *likelihood* of you going on this trip, given the *time and cost conditions* in the scenario.

I will definitely not go on this trip		I will definitely go on this trip
	0 1 2 3 4 5 6 7 8 9 10	

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