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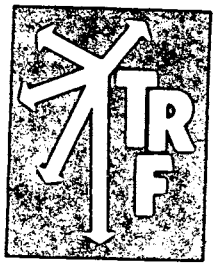

TRANSPORTATION RESEARCH FORUM
In conjunction with

Situational Influences Affecting Consumer Travel Behavior

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ABSTRACT

With the increasing importance of consumer travel behavior in recent years, many researchers have begun to investigate various issues to gain a better understanding of consumer travel. In particular, research has tended from aggregate to individual analyses, and from a focus on economic or physical variables to cognitive or behavioral variables. One area of focus that appears to be neglected is the effect of situational factors on travel behavior. This paper presents a framework for identifying those situational factors that should be included, and provides an empirical test demonstrating how the addition of situational factors improves explanation of intercity commuter travel behavior.

I. INTRODUCTION

Consumer travel behavior has become an increasingly important topic for transportation carrier managers and transportation researchers. Both public transportation planners and managers of private transportation firms need a comprehensive knowledge of consumer travel behavior to be able to compete successfully. Successful transportation strategies require a knowledge of:

- What types of Transportation services do consumers need?
- What service characteristics are important to each consumer segment?
- How do consumers perceive the alternative transportation services?
- Where do consumers obtain information about transportation services?
- How do consumers decide on which transportation services to use?

Researchers have begun to address these issues in recent years. Barff, Mackay, and Olshavsky (1982) summarized much of this research in an excellent review of travel-mode choice models. They suggest that the general trends in consumer travel behavior research are from aggregate to disaggregate analyses and from a concentration on physical and economic variables to an emphasis on cognitive and behavioral variables. The major orientation of this research has been toward determining how consumers form preferences for transportation service modes and investigating the relationship between mode preference and mode choice/usage.

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While improving our understanding of consumer travel behavior, research results have been inconclusive in definitively establishing the important relationships leading to transportation mode choice/usage. One possible explanation for the conflicting results of previous research is the failure to incorporate the important situational factors affecting consumer travel behavior.

The purpose of this paper is to develop a framework for identifying the situational factors that should be included in consumer travel behavior research. Beginning with a general discussion of situational factors and overall consumer behavior, these results are then translated into a framework specifically applicable to consumer travel behavior. This framework is empirically tested by examining how incorporating appropriate situational factors can lead to increased explanation of variation in intercity commuter travel behavior. The implications of these results for transportation carrier managers and transportation researchers are then discussed.

II. SITUATIONAL FACTORS AND CONSUMER BEHAVIOR

The inability of personal variables (demographic characteristics, personality traits, etc.) and product variables (product characteristics, attitudes toward products, etc.) to accurately predict or fully explain consumer purchasing behavior predicates a need for a situational perspective in consumer behavior research. The same individual may behave differently with respect to a product in different situations and different individuals may behave similarly with respect to a product when confronted with the same situation. Thus, situational factors may be the most important determinants of consumer purchasing behavior.

The most important work on situational variables has been done by Belk (1975). He makes important distinctions between the different ways a "situation" may be defined:

1. The concept of an environment is a broad description of the generally permanent "situation" facing a consumer.
2. The concept of a behavioral setting is a subunit of the environment defined by an interval in time and space and a complete sequence of behavior.
3. The concept of a situation is a subunit of a behavioral setting and is defined to comprise "all those factors particular to a time and place of observation which do not follow from a knowledge of personal (intra-individual) and stimulus (choice alternative) attributes and

which have a demonstrable and systematic effect on current behavior."

For example, the "situation" faced by any consumer can be defined in terms of the environment (economic conditions, social environment, etc.), the behavioral setting (grocery shopping on a particular day, during a specified time period, and in a specified geographical area), or the situation (purchasing a specific product in a specific store at a specific time). As one moves from the environment to the behavioral setting to the situation, a more detailed description of the relevant situational factors likely to affect purchasing behavior is provided.

Situational research in consumer behavior has taken two basic directions (Kakkar and Lutz 1981). One has been to investigate whether situational variables influence different types of purchasing behavior. Studies have indicated that situational variables are important in explaining the purchase/consumption of beverages, hair dryers, durable products, snack foods, meat products, and soft drinks. Some have found situational variables to have a direct effect on purchasing behavior, while others suggest that situational factors interact with personal and/or product factors in affecting consumer behavior. Interestingly, these studies appear to define the "situation" in terms of the behavioral setting confronting consumers and not at the specific situation level suggested by Belk.

The second major research direction has been to try to develop appropriate taxonomies for classifying the various situations faced by consumers. Although several classification schemes have been suggested, Belk identified five sets of factors that could be used in classifying consumer situations:

1. Physical surroundings, e.g., location, decor, sounds, etc.
2. Social surroundings, e.g., other persons present, their characteristics, etc.
3. Temporal perspective, e.g., time of day, time pressure, etc.
4. Task definition, e.g., specific purpose of behavior, intention, etc.
5. Antecedent states, e.g., momentary moods, momentary conditions, etc.

This classification scheme incorporates objective characteristics (location, time of day, etc.) as well as subjective characteristics (time pressure, moods, etc.) of a given situation. These categories provide a useful starting point for identifying the types of situational variables that might affect consumer purchasing behavior for a particular product.

In sum, research results have established the need to incorporate situational factors in consumer purchasing behavior studies. Although many important research issues remain unresolved, Belk has presented a useful framework for viewing "situations" at various levels and for classifying situational variables into specific categories. This framework appears to provide a valuable perspective for analyzing situational factors and consumer travel behavior.

III. SITUATIONAL FACTORS AND CONSUMER TRAVEL BEHAVIOR

Consumer travel behavior can be viewed as a subset of general consumer buying behavior. Consumers are purchasing/using a transportation service to satisfy a travel need. There are typically several transportation modes that might be used for any given trip. The travel mode selection decision is generally the result of a process whereby the consumer evaluates the alternative travel modes and selects the mode perceived to offer the "best" mix of the service characteristics desired by the consumer. Consumers with different personal characteristics are likely to desire different service characteristic mixes.

The above discussion portrays a non-situational approach to consumer travel behavior. Mode selection/usage is predicted or explained using only personal variables (personal characteristics) and product variables (service characteristics). This non-situational approach is the prevalent research orientation; however, situational factors are likely to be important determinants of travel mode choice/usage.

The inclusion of situational factors should improve predictions and explanation of consumer travel behavior. The relative importance of different service characteristics to any consumer would depend, in part, on the specific situational contingencies defining a particular trip. For example, a consumer might consider price to be the most important service characteristic when traveling with his family from Chicago, Illinois to Las Vegas, Nevada for a two week vacation in May. This same consumer, however, might consider convenience and dependability as the most important service characteristics when traveling by himself from Chicago to Las Vegas for a three day vacation in February. The addition of situation factors describes the consumer's travel needs more accurately.

A critical problem is determining what types of situational variables should be included in analyses of consumer travel behavior. Obviously, there are a tremendous number of ways that the consumer's travel situation might be defined and it would be impossible to measure and evaluate all of the potential situational variables. The previously discussed work by Belk offers a starting point for incorporating situational factors into travel behavior studies. Figure 1 presents an adaptation of Belk's general framework to the consumer travel behavior area.

This framework suggests that the travel behavior situation could be defined at the environment, behavioral setting, or situation levels. Since the environment level is broadly defined and rather enduring, environmental level analysis will not generally capture the important situational influences on travel behavior. At the behavioral setting level, however, the specific situation facing the consumer begins to be evaluated. For example, the travel behavior setting might be defined in terms of general travel to work, business travel, vacation travel, etc. Different service characteristics mixes are likely desired for each of these types of travel and a consumer might use a different transportation mode depending upon the type of travel. Travel studies including situational analyses typically define the situation at the behavioral setting level.

Situation level analyses are required to properly investigate consumer travel behavior. The categories of situational factors presented in Figure 1 provide a useful framework for determining which situational variables to include in a particular study. Ideally, several variables from each category would be included in every study. Pragmatically, researchers can use the framework to identify potentially important situational variables and then determine which vari-

FIGURE 1
A FRAMEWORK FOR VIEWING
SITUATIONAL FACTORS
INFLUENCING CONSUMER TRAVEL
BEHAVIOR

ENVIRONMENT

- Social Environment
- Ecological Concern

BEHAVIORAL SETTING

- Trip to Work
- Business Trip
- Vacation Trip

SITUATION

PHYSICAL SURROUNDINGS	SOCIAL SURROUNDINGS	TEMPORAL PERSPECTIVE	TASK DEFINITION	ANTECEDENT STATES
. Weather	. Traveling Alone	. Length of Trip	. Attend Specific Meeting	. Anxiety
. Departure Location	. Traveling With Friends/ Colleagues	. Departure Time	. Specific Vacation Destination	. Illness
. Arrival Location	. Traveling With Family	. Time Pressure	. Specific Shopping Trip	. Fatigue

ables can be feasibly included in the analysis. As researchers use this framework and more fully investigate the impact of various situational variables, the framework will be improved to more accurately reflect the unique aspects of travel behavior.

At the present state of knowledge, however, the framework can guide the thinking of researchers as they develop their travel behavior studies. To illustrate how the framework might be used and how situational variables can improve investigations of consumer travel behavior, an empirical study of intercity commuter travel behavior is presented.

IV. AN EMPIRICAL TEST

situational framework was tested by analyzing intercity commuter travel behavior. Intercity commuter travel is defined as travel between small communities and major hub airports normally located in large cities. This type of travel has become increasingly important in the United States since airline deregulation, but very few research efforts have been directed at investigating intercity commuter travel behavior.

Respondents were faculty/administrators of a large university located in small community approximately 100 miles from a major hub airport. The faculty/administrators were the heavy travelers in this community and most of their travel required trips between the community and the hub airport. Personal vehicle, commuter airline, and limousine service were available for this travel and investigated in this study. A random sample of 250 of the 1,485 faculty/administrators were sent an intercity commuter travel questionnaire through campus mail. Usable questionnaires were obtained from 89 respondents for 36% response rate.

Data were collected concerning several aspects of the intercity commuter travel behavior of the faculty/administrator respondents: frequency of usage of each mode, importance of various service characteristics, perceptions of the amount of each service characteristic offered by each mode, preferences for

each mode, and several situational characteristics. A non-situational analysis of the relationship between service characteristic importance, perceptions, preferences, and mode usage has been reported (Daley and LaForge 1982). Although this analysis found statistically significant results, the behavioral relationships only accounted for small portions of the variation in mode usage. It was hypothesized that incorporating situational variables into the analysis would increase explanation and prediction of intercity commuter travel mode usage.

Using the framework presented in Figure 1 as a guide, the following situational variables were investigated:

1. Physical surroundings: whether traveling from community to hub airport or from hub airport to community
2. Social surroundings: whether traveling alone, with colleagues, or with friends
3. Temporal perspective: the approximate time of travel and length of overall trip
4. Task definition: whether a business or personal trip
5. Antecedent states: no variables investigated

Respondents were presented several categories for each of the above situational variables and asked to indicate the percentage of their intercity commuter travel represented by the specific situation. For example, the length of overall trip variable was measured by asking respondents what percentage of their intercity commuter travel was for trips where they leave and return the same day, overnight, two nights, three nights, and more than three nights later. Several of the variables were combined and measured together, i.e., the social surroundings and task definition variables were combined and measured by having respondents report the percentage of their intercity commuter travel for business trips when traveling alone, business trips traveling with colleagues, business trips traveling with family, and personal trips traveling with family.

Analysis consisted of a separate multiple regression for each travel mode (personal vehicle, limousine service, commuter airline). The dependent variable was a four point scale evaluation of the frequency of mode usage for intercity commuter travel. Independent variables were preference for the mode measured on a five point scale and the situational variables discussed above. The basic approach was to evaluate the variation of mode usage explained by mode preference and then to assess the improved explanatory power of the models when the situational variables were introduced. Regression results are presented in Table 1.

As indicated in Table 1, the regressions between mode preference and mode usage had R^2 values from 0.10 to 0.20. The addition of situational variables added greatly to the explanatory power of the models. Regression models with both preference and situational independent variables resulted in R^2 values between 0.23 and 0.58.

All of the categories of situational variables used in the analysis (physical surroundings, social surroundings, temporal perspective, and task definition) were represented in at least one regression model (see Table 1).

The results of this study illustrate the importance of situational variables in predicting and explaining consumer travel behavior. In addition, the value of the framework presented in Figure 1 as a guide for determining the types of variables to include in a travel behavior analysis has been established. These results have important implications for transportation carrier managers and transportation researchers.

V. IMPLICATIONS

Before discussing the specific implications of this research, several limitations of this study should be noted. First, the study investigated a unique type of travel behavior (intercity commuter travel) by a specific type of traveler (faculty/administrators of a large university). Generalizing these results to other types of travel behavior or other groups of travelers should be cautioned. Different situational variables will likely be important when different travelers and different types of travel are investigated. However, the general situational categories presented in Figure 1 should be applicable to all types of travel analyses.

Second, the sample size was small, although large enough to perform the statistical analyses required. Finally, some of the situational variables were combined into one measure and fewer situational variables than desirable were used. Despite these limitations, this research should be valuable to transportation carrier managers and transportation researchers.

A. Carrier Management Implications

Marketing consumer travel services requires identifying the desired service characteristics and developing a marketing offer that provides the appropriate service characteristics more effectively than competing modes. This research indicates that the service characteristics desired and the transportation modes preferred will vary depending upon the situational contingencies defining a specific trip. Overall assessments of consumers' service characteristics needs and model preference are not sufficient to accurately predict or fully explain consumer mode choice/usage. A complete understanding of consumer travel behavior there requires a knowledge of the importance of different service characteristics in different travel situations.

A situational orientation will help carrier managers improve their marketing strategies in at least two ways. First, situational variables can provide a basis for segmenting markets and the identification of market segments not being properly served by existing model alternatives. For example, the analysis presented in Figure 1 suggests that the personal vehicle is not generally used for intercity commuter travel when the overall trip lasts more than three nights. Further analysis would identify the types of consumers most likely to take trips lasting longer than three nights and the most important service characteristics desired by this segment. Since the personal vehicle is the most often used mode in intercity commuter travel (and in many other types of travel), the situational analysis has identified a market segment where the personal vehicle is not a strong competitive alternative. This may be an extremely profitable travel segment for commercial modes.

The situational perspective can also assist carrier managers to adapt their service characteristics mix to different travel situations and to promote the advantages of their mode for specific travel situations.

TABLE 1
INTERCITY COMMUTER TRAVEL BEHAVIOR
REGRESSION ANALYSES

Variables	Beta	t-value	Significance	Adjusted R^2
Personal Vehicle				
Preference Variable	0.30	3.08	0.003	0.10
Situational Variables:				
Nonbusiness trips with family	0.33	3.38	0.001	0.23
Trip lasting more than 3 nights	-0.27	-2.75	0.008	0.32
Community to hub airport after 8 p.m.	0.21	2.13	0.037	0.35
Community to hub airport 12 noon to 4 p.m.	-0.22	-2.29	0.035	0.38
Overnight trip	0.17	1.71	0.092	0.40
Limousine Service				
Preference Variable	0.54	5.25	0.000	0.20
Situational Variables:				
Hub airport to community 8 a.m. to 12 noon	-0.35	-3.37	0.001	0.28
Community to hub airport 12 noon to 4 p.m.	0.22	2.24	0.028	0.32
Commuter Airline				
Preference Variable	0.46	5.92	0.000	0.16
Situational Variables:				
Nonbusiness trip with family	-0.43	-4.42	0.000	0.35
Business trip with colleagues	-0.18	-1.85	0.069	0.41
Overnight trip	-0.24	-3.00	0.004	0.45
Community to hub airport after 8 p.m.	-0.29	-3.35	0.001	0.48
Community to hub airport 8 a.m. to 12 noon	-0.23	-2.48	0.016	0.53
Hub airport to community 8 a.m. to 12 noon	-0.25	-2.92	0.005	0.57
Community to hub airport 4 p.m. to 8 p.m.	0.15	1.68	0.097	0.58

Different travel segments can be more effectively served by identifying the travel situations most often faced by each segment and then developing specific promotional messages directed to each segment communicating the desired service characteristics.

B. Research Implications

Basic and applied transportation researchers can benefit from a situational perspective. Any theory of consumer travel behavior must include the influence of situational variables. Basic researchers need to develop and test propositions and hypotheses concerning the relationships between situational variables and mode choice/usage. Applied researchers, on the other hand, need to incorporate situational variables in their studies to ensure that they provide carrier managers with useful information for the development of marketing strategies.

Several directions for future research have been suggested by this study. The most important direction is for researchers to use the framework presented in Figure 1 in a variety of different types of travel behavior studies. Results from these studies would further test the adequacy of the framework, lead to refinements and improvements, to include suggesting changes in the situational categories, and develop lists of situational variables for each category that affect different types of travel behavior. A taxonomy of situational variables could then be developed providing a valuable guide for future travel behavior research.