

**THE EFFECT OF ORGANIZATIONAL FACTORS ON
THE STRUCTURE OF THE BUYING CENTER:
THE CASE OF CORPORATE TRAVEL MANAGEMENT**

by

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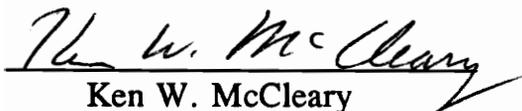
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The Effect of Organizational Factors on the Structure of the Buying Center: The Case of Corporate Travel Management

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(Abstract)

In this study the researcher attempts to advance the understanding of the structure of firm buying centers for air travel services. First, an attempt is made to find empirical support for the proposition that firm air travel service buying centers can be grouped on the basis of their size, degree of complexity, centralization, and formalization. The study investigates the relationship of size, structure, and technology of the organization as a whole to the structure of the buying center.

Diagraphs, or pictures representing the members of the buying centers, and the communication flows between those members, allow the researcher to record three constructs of buying center complexity: lateral involvement, vertical involvement, and connectedness. The size of the buying center is defined as the number of people within the organization who participated in the buying process from the reservations phase to the final payment of the supplier. The degree of centralization is determined by the number of communications between the travel manager and other buying center members.

Formalization of the buying center was operationalized as the percent of written versus verbal communication in the buying process, the extent to which the process was governed by rules and policies, and the degree of compliance with policy.

Significantly different mean values were found in buying center size and the degree of written versus verbal communication across the three cluster analysis-derived groups. None of the other buying center variables were found to differentiate the groups. Of all the organizational variables, only firm size, as measured by the absolute value of air travel purchases per year, was found to be a better-than-chance predictor of group membership.

Additional research on participation during the contract negotiation phase is suggested. It is further proposed that future researchers wishing to study corporate travel in an industrial marketing context begin to study influence on, in addition to participation in, the buying process. It is further suggested that these issues should be investigated in the context of global as well as domestic organizations and evaluated on a longitudinal basis.

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There are many people who I would like to thank for contributing to this research, either directly to its design or production, or indirectly through their encouragement and mentoring. First, Kaye Chon is probably the only individual who could have brought together the diverse group of talented individuals who made up the committee. Russell Bell, Ken McCleary, Michael Olsen, and Pamela Weaver all made invaluable contributions to this project for which each in his/her own way was uniquely suited. Readers who are familiar with the talents of these individuals will undoubtedly see them reflected in the study design.

Next, I would like to thank all of the other individuals who succeeded in keeping me motivated to finish the project. My father, Lowell Damonte, and my mother, Syble, ultimately must be responsible for instilling in me the stamina and flexibility that are required to deal with the curves and pitfalls that always develop in a project of this length and breadth. I am also indebted to my fellow graduate students for their friendship and encouragement during the long years of course work at Virginia Tech which led up to the dissertation.

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Chapter 1

Introduction: Corporate Travel Management as Industrial Marketing

Statement of the Problem

In this study the researcher will attempt to advance the understanding of the structure of the buying center within the context of corporate travel management. The study falls within the topic area of industrial marketing, a subset of organizational marketing, which refers to the marketing of goods and services to profit-seeking organizations (Sheth, 1973). The buying center includes all those members of the organization who take part in organizational buying activities. According to Webster and Wind (1972, p.14), "Organizational buying behavior includes all activities of organizational members as they define a buying situation and identify, evaluate, and choose among alternative brands and suppliers. The *buying center* includes all members of the organization who are involved in that process." The buying center reaches across organizational departmental boundaries.

The question of which organizational members participate in the buying process is perhaps one of the first questions researchers in organizational buying investigate. Johnston (1981, p.61) states, "The buying center concept views the actual locus of decisions in the purchasing process to be a fuzzy set, where individuals exert influence and are participants under some circumstances, but this varies; formal job titles may provide clues but no definitive answers to the question of who exerts what influence under what conditions or circumstances.... Identification of these sources of influence is, of course, fundamental to the study of industrial buyer behavior... An understanding of organizational structure is a necessary complement to the analysis process."

There has been some support for the concept that corporate travel purchases fall under the heading of industrial (organizational) buyer behavior (American Express, 1991; McCleary & Boewadt, 1978; Runzheimer International, 1990; Stock, 1975). Stock (1975) found that at least ten individuals or functional areas were involved in the buying process for transportation services. McCleary and Boewadt (1978) also argued that marketers of hospitality services should study the industrial buying process in regard to corporate meetings. In the American Express (1991) and the Runzheimer International (1990) studies, researchers found that top management was attempting to exert more control over the company's

travel-related service purchases. As corporate travel service purchases are controlled more by the firm than by the traveler, corporate travel management becomes more of an industrial buying issue and less of a consumer marketing issue.

The evolving organizational dynamic of the corporate market for travel services makes an industrial marketing research approach appropriate at this time. This dynamic is evidenced by the increase in corporations that have corporate travel departments. In a longitudinal study of business travel, American Express (1991) found that thirty-two percent of the companies surveyed had hired a travel manager, compared with sixteen percent four years earlier. According to Moline (1990), corporate travel managers: (1) set business travel policy and budget; (2) negotiate relationships with travel and tourism service suppliers; (3) provide information to members of the organization; and (4) assist in arranging travel.

In Bell's (1993) qualitative study of corporate travel management, the researcher found that organizations attempting to increase control over their travel management function seemed to differ in size and corporate decision-making style. The American Express (1991), Bell (1993), and Runzheimer International (1990) studies have, however, only been descriptive in nature. For example, although the

American Express study categorizes firms using cluster analysis, it only describes their travel policies using frequency of response to questions on type of travel policy used, and company size as measured by dollars spent on travel and entertainment (T&E). They make no attempt to show statistical correlation between these factors and cluster membership. Further, since this data is proprietary, researchers outside the company cannot attempt to confirm these relationships using secondary data.

The Runzheimer International Survey of Business Travel Policies and Costs (1990) also gave some indication that top management is attempting to exert greater control over its travel-related costs. In this study the number of companies that centralize their travel policy development, cost monitoring, reservations, and ticketing had risen in the two years prior to the study by 10-12 percentage points. This shift in policy-making strategy, from allowing the end user to control travel purchases to a more centralized control of the purchase process, would seem to indicate that a marketing strategy geared more towards pulling end users (travelers) through the distribution channel (corporation or travel agency) may be necessary (Bell, 1993). Therefore, an enhanced understanding of the structure of the buying center for corporate travel services will be needed.

Purpose of the Study

The purpose of the study is to investigate the relationship of the size, structure, and technology of the organization as a whole to the structure of the buying center for corporate travel. Webster and Wind (1972, p.17) state that "the behavior of members of the buying center reflects... the buying task, the organizational structure, and technology." Sheth (1973) also included firm size, in his conceptual model of organizational factors that impact industrial buyer behavior.

So as not to confound the study results, the purchase of only one corporate travel-related service will be investigated in the study. Travel-related services are primarily of five types: air-transportation, lodging, food & beverage, ground transportation, and travel agency services (American Express, 1991). In the American Express study, the degree of formalization of travel management policy, and the degree of employee compliance with that policy differed for air travel versus lodging or auto-rental service purchases. According to the American Express study, air travel purchases make up 41% of travel and entertainment (T&E) costs. The next largest category in share of T&E costs is lodging (22%).

Since air travel is the highest category of cost to corporate travel service purchasers, the buying task or buying situation in the study is the purchase of air travel service.

Organizational structure refers to the pattern of interaction among groups or individuals (Blau, 1970; Olsen, 1978). There seems to be some agreement emerging in the literature (Child, 1974; Tse, 1987) that the three dimensions of organizational structure are complexity, centralization, and formalization. For this project the following definitions of complexity, centralization, and formalization are used: (1) Complexity, cited in Price and Mueller (1986, p.100) is described by Blau and Schoenherr as "the degree of formal structural differentiation within an organization;" (2) Centralization is defined by Hall (Price & Mueller, 1986, p.50) as "the degree to which power is differentially distributed within an organization;" and (3) Formalization (Price & Mueller, 1986, p. 137) as "the degree to which the norms of an organization are explicitly formulated." The theoretical basis for using these variables as descriptors of organizational structure will be discussed in Chapter 2.

Technology, a variable that has been related to organizational structure is defined by Davis (cited by Miles, Snow and Pfeffer, 1974) as "the combination

of skills, equipment, and relevant technological knowledge needed to bring about desired transformation in materials, information, or people." The researchers distinguished between machine technologies, which involved the transformation of raw materials and information technologies, which involved the transformation of people. Woodward (1965) created a classification scheme based on the degree to which the technology was labor or capital intensive and the extent to which it permitted specialized cases. Other researchers (Perrow, 1967; Thompson, 1967) speak of the number of unusual cases and the difficulty of the search for solutions to those cases as being characteristics of technology. Miles, Snow, and Pfeffer (1974) argued that organizations attempt to buffer uncertainty by limiting the number of unusual cases. This last point seems especially relevant in service organizations where the customer is involved in the transformation process (Mills & Marguiles, 1980). The theoretical basis for testing for a relationship between organizational structure and the structure of a buying center will be discussed further in Chapter 2.

Firm size, another variable that has been shown to have some impact on organizational structure, has been operationalized in industrial buying studies (Johnston, 1981; Peters & Venkatesan, 1973) in terms of total yearly sales and number of employees of the firm. In studying issues related to corporate culture

and organizational structure, the American Express (1991) study of business travel management documented the ratio of travelers, those taking at least one business trip per year, to total number of employees. Bell (1993) also argued that the level of total expenditures for travel was a relevant construct of firm size.

The buying center can be viewed as a sub-set of the organization. As such, the structure of the buying center can be described in terms of its extension (size) or number of members, and its degree of complexity, centralization, and formalization (Johnston, 1981). The constructs used by Johnston (1981) to measure complexity of the buying center were: (1) the degree of vertical involvement -- the number of hierarchical authority levels communicating within the buying center; (2) lateral involvement -- the number of different departments and divisions involved in the communications network regarding an organizational purchase; and (3) connectedness -- the degree to which the members of a group are linked or connected with each other by communications flows. As constructs of centrality, the researcher measured the total number of people involved in the buying center (extension) and the number of individuals with which the purchasing manager had direct communication relative to the total number of people in the buying center (centrality of the purchasing manager).

Formalization, the third component of structure, has been referred to as the degree to which norms are explicitly formulated. Hage & Aiken (1967) and Pennings (cited in Olsen, 1978) have also included in their definition such issues as, how many rules define what to do, the range of toleration of divergence, and the degree to which rules are followed. Regarding this aspect of divergence, American Express (1991) documented the level of perceived employee compliance with travel policy. Bell (1993) suggested that as corporate travel policy becomes more formalized, the organizational policy regarding the number of travel agencies and vendors with whom organizational members may conduct business may decline.

In Bell's (1993) qualitative study of corporate travel management, the researcher argued that the firms studied seemed to be going through an evolutionary process with respect to their corporate travel management programs. Bell further argued that these programs could be placed into four distinct categories. Category one was described as travel control rather than travel management. The primary control mechanism for firms in this stage was the expense account review process. The only centralized purchasing program was with a rental car company. In category two, firms had also reduced the number of travel agencies used by the company. However, because of their decentralized

organizational decision making system, they were not able to move further toward other travel purchase restrictions. The firms in category three had negotiated airfares for some routes and had recently moved into hotel contract negotiations. In category four he suggested that firms would move to the development of a chain-wide and international hotel program. He proposed that the reason for category three firms have not moved into category four was because of hotel chain organizational structure and attitudes, rather than reluctance on the part of the purchasing firms.

Objectives

The present research has two underlying objectives. First, the researcher will attempt to empirically show that firms can be grouped based on characteristics of the buying center for air travel service. The characteristics studied include buying center size (the number of members who have direct communication regarding an air travel service), and the structural dimensions of formalization, complexity, and centralization. Second, if statistical analysis reveals distinct groups of firms with respect to air travel service buying center size and structure, the researcher will then attempt to measure the relationship of organizational characteristics to buying center group membership (Figure 1). Buying center

group membership then becomes the dependent variable. The organizational characteristics to be used as the independent variables are organization size, technology, and the relative degree of complexity, centralization, and formalization.

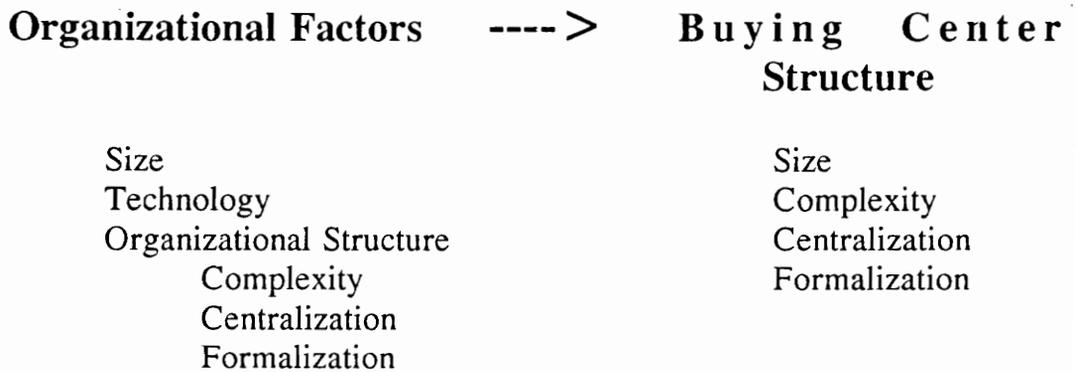


Figure 1
Buying Center Structure Model
for Corporate Travel Service

Buying center size, complexity, and centralization will be studied using Protocol Analysis to create a snowballing sample (Johnston, 1981). Through the use of Protocol Analysis, all buying center members will be identified by questioning organizational members beginning with the travel executive. In a semi-structured interview the travel manager will be asked to remember the last

purchase of a domestic, business-related, air travel service. He/she is asked to reveal the names of those persons with whom the purchase was discussed. These persons are subsequently interviewed and asked with whom they also had communication regarding this purchase. The sampling technique continues until all members of the buying center are interviewed.

Limitations of the Research

The study has two major limitations. First, since it utilizes the sampling frame that was used by Bell (1993), namely that of Fortune 1000 companies that have travel managers, the direct applicability of the results are limited to the topic area of industrial buyer behavior. The terms 'organizational buyer behavior' and 'industrial buyer behavior' are sometimes used interchangeably. However, industrial buyer behavior more narrowly refers to the buying patterns exhibited by solely profit-oriented organizations, whereas organizational buyer behavior is exhibited by both non-profit and profit-seeking organizations (Sheth, 1973). The distinction may be an important one. For example, a study done by American Express (1991, p.8) separated travel and entertainment expenditures by "private" and "public sector," which included "government" and "education." The study found the "public sector" relying more heavily on formal, written travel policies.

Second, since the purchase situation context is the purchase of an air travel service, study results have only indirect application to the marketing of other travel services. Indeed, as mentioned on page 2, the American Express (1991) study found differing results regarding the degree of formalization of travel management policy, and the degree of employee compliance with that policy for air-travel versus lodging or auto-rental service purchases. Also, as mentioned in Bell (1993) the relative organization of the lodging industry, or lack thereof, versus the airline or rental-car industry may lead to different dynamics in the market for these services.

Finally, one de-limitation of the study is that the variables that will be used as constructs of travel management policy are not intended to be all inclusive. Nevertheless, they were adapted from the extensive qualitative and descriptive research performed from the American Express (1991) and Bell (1993) studies.

Summary

Profit-seeking institutions appear to be attempting to take greater control of their corporate travel expenses (American Express, 1991; Bell, 1993; Runzheimer International, 1990). As the buying process for corporate travel is controlled more

by the firm than by the traveler, it becomes more of an industrial buying process and less of a consumer buying process. Because buying centers are fuzzy sets (Johnston, 1981), that is, their membership varies across buying situations or circumstances, the question of which organizational members participate in the buying process is one of the first questions researchers in this area of marketing should investigate.

The purpose of the proposed study will be to investigate the relationship of organizational structure, technology, and size (Sheth, 1973; Webster & Wind, 1972) to the structure of the buying center for corporate travel. The three defining dimensions of organizational structure which will be studied are complexity, centralization, and formalization (Child, 1974; Tse, 1987). Researchers have also argued that technology (Miles, Snow, & Pfeffer, 1974; Perrow, 1967; Sheth, 1973; Thompson, 1967) and size (Bell, 1993; Johnston, 1981; Peters & Venkatesan, 1973) are related to organization and/or more specifically, buying center structure. The structure of the buying center can be described in terms of its size or number of members, and its degree of complexity, centralization, and formalization (Johnston, 1981).

Complexity and centralization will be measured as in Johnston (1981). The complexity of a buying center will be measured by the degree of vertical involvement, lateral involvement, and the degree to which the members of the group are linked or connected with each other by direct communications flows. Centrality will be measured by the number of individuals with which the purchasing manager had direct communication relative to the total number of people in the buying center (centrality of the purchasing manager). Formalization of the buying center will be measured by the degree to which corporate travel policy is written versus verbal, the number of rules specified, and the perceived degree of employee compliance with policy (Hage & Aiken, 1967; Pennings, 1973).

The objectives of the study are as follows: (1) To offer empirical evidence that firms can be grouped with respect to the structural characteristics of their buying centers for air-travel services; and (2) To identify which organizational characteristics discriminate between buying center group membership. Group membership will be the dependent variable in the study. The organizational characteristics size, technology, and the relative degree of complexity, centralization, and formalization will be the independent variables. The research is therefore an attempt to help corporate travel service marketing strategists to

predict the structure of the buying center for their services. To the degree that the theoretical relationships between specific organizational characteristics and specific buying center structures can be supported, marketers will be better able to predict participation in the buying center and therefore target their marketing efforts to the actual buying center members.

The current research utilizes the membership of the National Business Travel Association (NBTA). Specifically, the 730 corporate travel executives who attended the 1993 NBTA Conference will be requested to participate. All willing participants will then be asked to participate in the study which uses Protocol Analysis to create a snowballing sample (Johnston, 1981; Moriarty & Bateson, 1982). This sampling process begins by asking a travel executive to recall the last air-travel service purchase and to identify the members of the organization with whom the travel executive had communication regarding the purchase. The identified organizational members are then asked to recall the names of the people with whom they communicated regarding the purchase. The process continues until all members of the organization who communicated regarding this particular purchase situation have been interviewed.

Organization of the Study

This study will attempt to investigate the relationships between organizational characteristics and buying center structure and size. Chapter 2 will begin by describing the conceptual models of industrial (organizational) buyer behavior. A review of the research regarding these models, an overview of the research domain of organizational structure, and a review of the methodological issues relevant to the proposed research will then be provided. Chapter 3 will discuss the methodology to be utilized in meeting the research objectives, the sampling frame and the unit of analysis, and the methods of data collection and analysis. Chapter 4 will describe all results. Chapter 5 will provide a discussion of the research results. Chapter 6 will offer conclusions and recommendations for future research.

Chapter 2

Literature Review

Introduction

Within the literature on industrial buyer behavior, a number of variables have been proposed to affect the purchase behavior of organizations. This chapter will include an overview of the literature on organizational buying as well as research in the broader topic area of organizational structure. Included will be the various conceptual models of organizational buyer behavior, the substantive ways in which factors relevant to those models have been empirically researched, relevant methodology issues related to the proposed study, and finally, issues related to organizational structure which are relevant to the proposed research.

Conceptual Models of Organizational Buyer Behavior

In the body of literature related to organizational buyer behavior (Exhibit 1), two seminal conceptual works appear, Webster and Wind (1972) and Sheth (1973). Webster and Wind's (1972) model classified variables influencing

organizational buying behavior as "individual," "social," "environmental," and "organizational." Even in an organizational buying context, the authors consider the individual to be a factor in the buying process. Yet, Webster and Wind (1972) postulate that since the buying process takes place in the context of the group, the social interaction of group members (the user, influencer, decider, buyer, and gatekeeper) should be considered as a causal factor in buying decisions. Webster and Wind (1972) also took into consideration the impact of environmental factors such as the physical, technological, economic, political, legal, and cultural factors in the external environment in which organizations exist.

In addition to Webster and Wind (1972), other scholars have included organization-specific factors in their models of the variables impacting organizational behavior (Fern & Brown, 1984; Mattson, 1988; Sheth, 1973). Sheth's (1973) model stressed the impact of organization-specific factors such as size, centralization, and orientation (e.g., company dominated by engineers) as well as the impact of product-specific variables on organizational buyer behavior. Product specific variables included by Fern and Brown (1984) were risk, time pressure, and number of suppliers. Mattson's (1988) model suggested that buying center membership can be predicted based on purchase specific variables such as

the product type (i.e. capital equipment versus product essential products, product price, and life cycle) in addition to variables related to the firm's mission.

Empirical Studies of the Conceptual Organizational Buying Models

In the following sections studies that tested the impact of each of the variables mentioned above on organizational buyer behavior will be reviewed.

Social Factors in Organizational Buyer Behavior: the Buygrid Model

Robinson, Faris, and Wind (1967) first introduced the 'buygrid' model that was used for predicting the relative influence of purchasing managers in the buying process. The model was composed of a 'buyclass' framework on one axis and 'buyphase' on the other.

Buyclass and Other Purchase Situation Factors -

The buyclass framework (Exhibit 2) implies that organizational buying behavior is a process that can be predicted based on the factors of: (1) newness of

the problem; (2) the information intensiveness or complexity of the decision; and (3) the degree to which many alternatives are considered. The buyclass theory of organizational purchases classifies industrial purchase situations into new task, modified rebuy, and straight rebuy (Robinson, Faris & Wind, 1967). New task purchases are those which result from new organizational problems, where the decision is relatively complex and information intensive, and where large numbers of alternatives are considered. Modified rebuys are those which involve the purchase of products that have been purchased by the organization previously but where some aspects of the decision are to be re-evaluated. Straight rebuys are purchase situations where the product has previously been purchased by the organization and where all aspects of the purchase decision have already been decided.

The effect of buyclass on the perceived influence of buying center members has been empirically tested in the context of hypothetical purchase situations (Anderson, Chu, & Weitz, 1987; Bellizzi & McVey, 1983; Naumann, Lincoln, & McWilliams, 1984). In general, the substantive results indicate that buying centers faced with new tasks are more influenced by technical personnel and less by purchasing agents. However, Anderson, Chu, and Weitz (1987) found that only the buyclass constructs of newness of the purchase and extent of the buyers'

need for more information correlated positively with the perceived influence of buying center members.

Unfortunately, the results of these studies cannot be strictly compared because of methodological differences such as differing statistical procedures (i.e; factor analysis versus MANOVA) or sampling frame. For example, Bellizzi and McVey's (1983) study responses were self reported by participants in different positions within the buying center. In the Naumann, Lincoln, and McWilliams (1984) study, each respondent was the top purchasing manager (in total dollar value of goods purchased) in the firm. Finally, in the Anderson, Chu, and Weitz (1987) study, sample respondents were district sales managers.

The effects of novelty, complexity, and importance on participation and influence in the buying center were studied by McQuiston (1989). Novelty was defined as the lack of experience of individuals in the organization with similar purchase situations. Complexity referred to how much information the organization must gather to make an accurate evaluation of the product. Importance was defined as the perceived impact of the purchase on organizational profitability and productivity. The findings of the McQuiston (1989, p. 76) study indicated that "... as novelty and importance to the purchasing organization rise,

more information is sought by members of the decision making unit." However, unlike in Johnston and Bonoma (1981), the construct of complexity was not found to be significantly related to member participation in the buying group. It was proposed that complexity may be a second-order construct. That is, there may in fact be two underlying constructs of "product complexity" and "situation complexity."

Buyphase

Buyphase is the other component of the buygrid model (Exhibit 3). The theory suggests that different organizational members will be involved in the purchase decision at different stages of the buying process. The eight stages suggested by Robinson, Faris, and Wind (1967, p.14) are as follows:

- 1) Anticipation or Recognition of a Problem (Need) and a General Solution
- 2) Determination of Characteristics and Quantity of Needed Item
- 3) Description of Characteristics and Quantity of Needed Item
- 4) Search for and Qualification of Potential Sources
- 5) Acquisition and Analysis of Proposals
- 6) Evaluation of Proposals and Selection of Supplier(s)
- 7) Selection of and Order Routine
- 8) Performance Feedback and Evaluation

Vyas & Woodside's (1984) model of organizational activities, decisions, and interactions suggest that organizations use a variety of decision rules based on the stage of the decision process and the number of organizational members involved. Buyphase has been either a contextual variable (Choffray & Lilien, 1978; Crow, Olshavsky, & Summers, 1980; Jackson, Keith, & Burdick, 1984) or an independent variable (Bellizzi & Walker, 1980; Lilien & Wong, 1984) in studies of the make-up of the buying center and/or the relative influence of each of its members.

In both Bellizzi and Walker (1980) and in Lilien and Wong (1984), buyphase was operationalized in the manner specified by Robinson, Faris, and Wind (1967) above. According to Robinson, Faris, and Wind (1967) purchasing agents were particularly involved in the search, selection, and feedback stages. Bellizzi and Walker's (1980) data on the construction industry supported the purchasing agent's influence in the search and selection stage but not in the feedback stage. In the Lilien and Wong (1984) study of the metal-working industry, no consistent pattern was found across buystages. However, users (production and engineering personnel) were more involved in the earlier phases (determining specifications). Purchasing agents and managers were more involved in selecting a supplier and determining the quantity purchased. It should be noted,

however, that this analysis was done using secondary data. The caveat was made that the survey only measured involved/not involved (categorical), not degree of involvement (ordinal or interval). The fact that the data is definitely non-metric limits its comparability with the other studies.

Individual Factors

The buying behavior of individual members of an organization has also been postulated to be a function of individual extrinsic and intrinsic rewards. Anderson and Chambers (1985, p.8) suggest that "...organizational buyer behavior is best understood as work behavior... Thus, their proposed model of organizational buyer behavior rests on the fundamental proposition that the behavior of individuals in organizations is determined largely by the way in which their activities are measured and rewarded."

There has been only limited study of the impact of individual forces on organizational buyer behavior. Ronchetto, Hutt and Reingen (1989) suggest that the degree of influence of an individual on the purchase process may be related to

the position within the organization that that person holds. Their study results showed strong support for the relationship between formal rank within an organization, and influence during organizational buying-related activities.

Different types of power and influence were studied by Kohli (1989). These types included reward power, reinforcement power, referent power, legitimate power, formal power, and expert power. Kohli (1989) found that individuals who had expert power had greater influence in some large committees even when they did not make great influence attempts. Study findings supported the concept that the role of the individual as well as the buying center and situational variables should be considered in any attempt to predict organizational buyer behavior.

Environmental Factors

There has also been limited study of the impact of environmental forces on organizational buyer behavior. Gronhaug (1976) introduced a taxonomy that classified organizations as product dependent -- those which must produce some output, or product independent -- those whose budget is controlled by regulatory groups. The study revealed different search behavior, buying motives, and goals

pursued by these two types of organizations. A study by Capon and Glazer (1987) studied the role of new technologies in firms' marketing strategies. The researchers argue for an alignment of marketing and technology.

Organizational culture has also been used to profile organizations regarding certain aspects of their buying behavior (American Express, 1991). The concept of organizational culture is defined by Deshpande and Webster (1989, p.7) as, "the pattern of shared values and beliefs that help members of an organization understand why things happen and thus teach them the behavioral norms in the organization...culture is as a metaphor for the organization itself...it is not something an organization has but what it is." Analogous to the concept of corporate culture, Shrivastava and Mitroff (1983) refer to the 'frames of reference' (FOR) which managers use in assessing new information. They categorized four FOR for a strategic purchase decision as being either entrepreneurial, bureaucratic, professional, or political. Entrepreneurial managers are said to rely on intuition and judgment in decision making. Bureaucratic managers are believed to rely more on empirical assessment of information. Professional managers utilize both objective and subjective information based on shared, long-held beliefs. Political managers evaluate information both objectively and subjectively within the context of the objectives of the special interest groups to which decision makers belong.

The American Express (1991) study clustered organizations by their corporate cultures with respect to economic outlook, corporate outlook, outlook toward employees, and attitude toward controlling costs in a variety of categories, including T&E expenses. The authors determined sufficient differences in cluster means to evaluate five groups. As with any cluster analysis, the names given to the clusters or groups of respondents were chosen by the researchers.

The American Express (1991, VII-p.1) study called those firms that considered travelers' comfort and convenience more than costs, "liberal optimists." The study calls those firms that believe T&E costs cutting will limit their business so they try to control necessary spending, "administrative activists." Those firms that believe that they can cut (T&E) costs without limiting their business but that cutting costs is not the best way to increase profitability are called, "complacent winners." Those firms that are concerned with containing (T&E) costs in all areas in the face of what they believe will be a declining economy are called, "sensitive pessimists." "Oppressive depressives" are those firms that have a general lack of concern for their employees and believe in (T&E) cost containment to maintain profitability.

Organizational and Purchase Situation Factors

In addition to Webster and Wind (1972), other scholars have included organization specific factors in their model of organizational buyer behavior. Sheth (1973) included size, centralization, and orientation in his conceptual model of organizational buyer behavior. Two organizational factors that have been studied as independent variables in the body of literature on industrial buying are organization size and organizational structure.

Buying firm size (Exhibit 4) has been operationalized as a function of total sales revenue (American Express, 1991; Bellizzi, 1981; Johnston & Bonoma, 1981), number of employees, and purchase volume (Crow & Lindquist, 1985). Structure has been conceptualized as the degree of complexity, formalization, and centralization (Bellizzi & Belonax, 1982; Johnson & Bonoma, 1981; McCabe, 1987). The results of Bellizzi's (1981) study indicated that, as organization size increases, buying influence was transferred from owners and presidents to engineers and purchasing agents.

Johnston (1981) studied the relationship of organizational structural variables, firm size, and attributes of the purchase situation to the structure of the

buying center for capital goods versus industrial services. He focused primarily on two dimensions of structure relative to the firm buying centers: complexity and centralization. Constructs relevant to the structural complexity of the buying center in Johnston's (1981) study were: (1) vertical involvement -- the number of organizational members involved in the purchase decision from organizational positions higher or lower than the purchasing department; (2) lateral involvement -- the number of organizational members involved from the same relative level in the organizational hierarchy; and (3) connectedness -- the degree to which the members of a group are linked or connected with each other by communication flows. This construct of connectedness was originally termed 'integrative connectedness' by Schroder, Driver and Streufert (1966). These authors argued that integrative connectedness and differentiation, called 'extension' by Johnston (1981), were two important descriptors of organizational information processing systems. Johnston's (1981) two constructs of centralization of the buying center were: (1) extension -- the total number of people involved in the buying center; and (2) centrality of the purchasing manager -- the number of individuals with which the purchasing manager had direct communication relative to the total number of people in the buying center.

Johnston's (1981) study found that the purchase of industrial services seemed to involve fewer vertical layers of organizational authority and fewer managers overall than capital goods and that purchase situation attributes (purchase novelty, complexity, and importance) were stronger predictors of buying center communications than were the organizational structure variables of complexity, formalization, and centralization. The only organizational structural variable whose relationship to the structure of the buying center differed for the purchase of capital equipment versus industrial services was the number of divisions, a measure of the complexity of the firm's structure. Says Johnston (1981, p. 123), "In the capital-equipment-purchase situations, the variable had a negative effect, while in the case of services it had a positive effect."

Johnston (1981) viewed the buying center as a fuzzy set. That is, buying center members may often cross traditional organizational lines of responsibility and authority. The results of his study seem to support the concept that the structural dimensions of the buying center may vary across purchase situations. The attributes of the purchase situation investigated in the study were novelty, complexity, and importance of the purchase situation. In the context of the purchase of industrial services, several relationships were found to be significant between the study variables. Novelty was found to be positively related to vertical

involvement, lateral involvement, extension, and connectedness in the buying center. Complexity of the purchase situation was found to be positively related to lateral involvement and extension. In the context of the purchase of capital equipment, importance of the purchase was found to be positively related to vertical involvement, extension, and connectedness. Novelty was positively related to vertical involvement, extension, and connectedness of the buying center, and negatively related to centrality of the purchasing manager. Complexity of the purchase situation was positively related to connectedness of the buying center and negatively related to the centrality of the purchasing manager.

Formalization of travel policy was studied by American Express (1991). The policy-related measures most frequently taken to control T&E costs were to "require travelers to take the lowest logical airfare, tighten receipt requirements, and more strictly enforce existing T&E policies." (American Express, 1991, p. 5) Though the findings were only descriptive in nature, ninety-two percent of organizations in the study with volume sales of over \$5 million per year had formal, written travel policies. Only twenty-three percent of those with volume sales of less than \$.25 million per year had formal, written travel policies. Thus, there seemed to be a positive relationship between degree of formalization and company size as measured by sales volume.

Organizational Structure Issues Relevant to the Structure of Buying Centers

Industrial marketers have treated organizational buyer behavior as a sub-set of organizational behavior (Johnston, 1981; Zaltman & Bonoma, 1977). Zaltman and Bonoma (1977) argued that the study of industrial buyer behavior was the study of the behavior of formal organizations. Johnston (1981) viewed the purchase of goods and services by industrial organizations as an organizational boundary-spanning role whereby environmental input decisions were made. As Johnston (1981, p. 58) stated, "...the buying center is a vague construct (fuzzy set) reaching across functional role boundaries whose composition can only be determined through empirical investigation." Empirical studies of organizational structure provide some guidance for researchers who are attempting to study the organizational sub-group called the buying center.

As mentioned in Chapter 1, organizational structure refers to the pattern of interaction among groups or individuals (Blau, 1970; Olsen, 1978). In an extensive review of the literature on organizational structure, Olsen (1978, p. 13) stated that the three major structural categories are (1) centralization, (2) complexity; and (3) formalization. These dimensions have subsequently received attention in the hospitality literature (Crawford-Welch, 1991; Tse, 1987).

Price and Mueller (1986) view centralization as the degree to which power is differentially distributed. This definition reflects the earlier works of Aiken and Hage (1968), Ouchi (1977), Pennings (1973), Pugh et al. (1968), and Woodward (1965), who regarded centralization as the number of levels of authority and/or the span of control. Tse (1987) and Crawford-Welch (1991) measured centralization using a question adapted from Pugh et al. (1968) of the Aston group. The question asked respondents to evaluate what level had authority to make various management decisions.

Complexity, described by Blau and Schoenherr (1971) as formal structural differentiation, includes the number of horizontal divisions as well as the amount of vertical specialization. In Tse (1987) and Crawford-Welch (1991), the authors measured specialization by the relative number of selected management activities that were the responsibility of at least one full-time individual. As a measure of overall firm complexity, Johnston's (1981) study measured the number of divisions and separate operating plants.

Formalization, the routinization of organizational norms (Blau & Schoenherr, 1971), includes the number of written job policies (Evers, Bohlen, & Warren, 1976), the range of toleration, and the extent to which policies are

observed (Hage & Aiken, 1967). Tse (1987) and Crawford-Welch (1991) both utilized derivations of the scales that were developed by Inkson, Pugh, and Hickson (1970) of the Aston group. These scales measured the extent of written documentation of company policy. The scales developed by Oldham and Hackman (1981) tested not only the existence of written policies and job descriptions, but also the existence of written records of job performance.

The technology employed by the organization has also been linked to organizational structure (Miles, Snow & Pheffer, 1974; Perrow, 1967; Woodward, 1965). Woodward (1965) argued that different technologies require different forms of control and therefore place different demands on organizational structure. She created a classification scheme based on the degree to which the technology was labor- or capital-intensive and the extent to which the technology permitted specialized cases. The researcher found that as the chosen technology moved from unit to mass production, there was an increase in mechanical forms of control. Perrow (1967) further differentiated technologies according to the number of unusual cases and the difficulty of the search for solutions to those cases. One implication of these issues to organizational structure was noted by

Miles, Snow, and Pfeffer (1974, p. 255). The authors state, "...as the organization's technology becomes more routine, coordination tends to be more formalized."

This point may be especially relevant in service organizations where the customer is involved in the transformation process (Mills, 1986; Mills & Marguiles, 1980). These authors argue that service firms have inherently different technologies than manufacturing firms. Thompson (1967) proposed that organizations attempt to seal off core technologies, those central to the production process, in an attempt to limit uncertainty. Mills (1986), in describing the technology of service firms, argued that techniques in services are performed on people and that this aspect of service technology makes service firms inherently more open systems than manufacturing firms.

In the organizational theory literature, there appears to be general consensus that organization size has a positive impact on structure (Aldrich & Herker, 1977; Child & Mansfield, 1972; Miles, Snow, & Pfeffer 1974; and Pugh et al., 1969). The Aston group supported the variable size as being a strong predictor of organizational structure. Aldrich and Herker (1977) found size to be positively correlated with the number of boundary-spanning roles that exist within an

organization. Miles, Snow and Pfeffer (1974, p. 255) summarize the opinion of organizational theorists regarding the impact of size on organizational structure as, "...organizational size appears to be a somewhat stronger determinant of structure than does technology...."

Methodological Issues in Organizational Buyer Behavior:

Research Relevant to the Proposed Study

Over the evolution of industrial marketing research, a number of methodological challenges have been uncovered and advances made (Exhibit 5). One of the primary challenges in industrial marketing lies in the classification of industrial goods and services.

Classification Systems for Industrial Goods and Services

The Mattson (1988) study argued that buying center membership could be predicted based on purchase specific variables such as product type. There have been some attempts to classify industrial goods and services (Jackson & Cooper, 1988; Kotler, 1984; Lehman & O'Shaughnessy, 1974).

Lehmann and O'Shaughnessy (1974) classified products according to the problems that the products might generate through their purchase. The researchers' groupings of products are as follows: (1) routine order products -- those having few problems; (2) procedural-problem products -- those products wherein problems occur in learning how to use the products; (3) performance-problem products -- those products wherein problems occur through dissatisfactory product performance; and (4) political-problem products - those products wherein problems occur in negotiating with those affected by the purchase.

Kotler's (1984) categorization of industrial products was based on the degree to which the good or service was used as an integral part, or consumed in the production of, the firm's end product. Kotler (1984) proposed that industrial products be classified as: (1) product essential -- components of the product; (2) capital items -- consumed in the manufacture of the product; (3) support essential--services that do not contribute to the finished product but are nevertheless essential to its creation; and (4) consumption supplies and services - those that do not contribute to the finished product.

Jackson and Cooper (1988) suggested a similar grouping system, the categories of which they call capital products, operation products, and output

products. Their use of the term 'products' includes both goods and services used by the organization in the production of the organization's product output. However, this system fails to include those services that are purchased by an organization, but not utilized in the finished product.

Empirical testing of organizational buyer models has been done in the context of product essential goods, capital items, or support essential products and services (Bellizzi & Belonax, 1982; Johnston & Bonoma, 1981; Naumann, Lincoln, & McWilliams, 1984; Silk & Kalwani, 1982; Stock & Zinszer, 1987). To date there have been no studies that have attempted to apply organizational buyer models to strictly consumption supplies and services -- those that are not included in, and are not necessary to, the finished product. *Note: Though not all corporate travel would fall under this category, it seems intuitively logical that some would.*

Problems in Measuring Buyer Behavior

One of the primary differences in the previously mentioned studies is in the choice of the dependent variable, that is, whether to measure participation or

perceived influence. Further, the methodologies employed have varied in two ways. First, the measures used to identify the degree of participation and/or influence have been different in wording, context, and scale. Second, the studies differed with respect to the respondents' roles within the buying center. Several studies have brought to question methodological rigor in the measurement of these variables (Dalstrom, Barr, & Comer, 1990; Moriarty & Bateson, 1982; Silk & Kalwani, 1982).

In a study that attempted to determine the reliability of responses given by organizational members, Silk and Kalwani (1982) found judgments about the identity of participants to be more reliable than assessments about their degree of involvement or influence in the purchase decision. It was shown that position bias may be evident when comparing between-informant data to self-informant data. The study found that position bias was minimal when the questions were related to the construct of participation as opposed to degree of influence. Sufficient between-informant reliability was found when the questions focused on specific stages of the decision process. Study results indicated that influence patterns could not be assessed on single questions or items. Position bias was also lower when the questions were couched in such a way as to specify the buyphase. Dalstrom, Barr, and Comer (1990) also found dissimilar results when the respondents were

asked to comment on their own participation in the buying process as opposed to when a member of the organization was asked to comment on another's participation.

In Moriarty and Bateson (1982) the authors showed that the size and structure of the buying center varied as to whether single-stage or exhaustive snowballing was used. Single-stage snowballing implies that only one decision making unit (DMU) member is asked questions regarding the participation and influence of other unit members. Exhaustive snowballing implies that after other DMU members are identified, they are brought into the study as respondents. As would be expected, the study found the size of the DMU to be larger when exhaustive snowballing was used. The percentage of DMU's in which each function (finance, marketing, purchasing, etc.) was represented was also shown to be larger when measured through exhaustive snowballing.

Johnston (1981) cited other researchers (McAleer, 1974; Scientific American, 1969; Spekman, 1977) who supported the need to investigate the dimensions of buying center participation beyond the individual unit of analysis. McAleer's (1974) study indicated that marketers of industrial goods were incapable of adequately reaching and influencing members of the buying center. Spekman's

(1977) study suggested that the individual level of analysis did not reveal the importance of the interaction among buying center members. Scientific American's (1969) empirical study indicated large variations in the composition of the membership of the buying center and suggested that more attention be given to the dimensions leading to buying center participation.

Summary

Following from Webster and Wind's (1972) seminal work, four streams of research have attempted to study variables influencing organizational buyer behavior. Researchers have attempted to study the impact of: (1) social variables (Anderson, Chu, & Weitz, 1987; Bellizzi & McVey, 1983; Bellizzi & Walker, 1980; Choffray & Lilien, 1978; Crow, Olshavsky, & Summers, 1980; Jackson, Keith, and Burdick, 1984; Lilien & Wong, 1984; McQuiston, 1989; Naumann, Lincoln, & McWilliams, 1984); (2) organizational factors (American Express, 1991; Bellizzi, 1981; Bellizzi & Belonax, 1982; Crow & Lindquist, 1985; Johnston & Bonoma, 1981; McCabe, 1987); (3) individual factors (Anderson & Chambers, 1985; Kohli, 1989; Ronchetto, Hutt, & Reingen, 1989); and (4) environmental factors (American Express, 1991; Capon & Glazer, 1987; Gronhaug, 1976). Industrial marketers have treated organizational buyer behavior

as a sub-set of organizational behavior (American Express, 1991; Johnston, 1981; Zaltman & Bonoma, 1977). Johnston (1981) argued that the study of the composition or structure of the buying center structure was a critical first step to the further study of buying behavior or organizations. Yet, little empirical support has been found for the proposed relationship of these organizational factors to the structure of the buying center (Sheth, 1973; Webster & Wind, 1971). Further, other than in the descriptive work done by American Express (1991), the relationship of overall organizational size and structure to buying center size and structure seems to have been passed over as a topic of research in the field of corporate travel management and marketing.

The constructs of organizational structure typically studied within the body of research on organizational structure are centralization, complexity, and formalization (Blau, 1970; Crawford-Welch, 1991; Olsen, 1978; Tse, 1987). There appears to be consensus that organization size has a positive impact on these three constructs. That is, as the size of the organization increases, organizations seem to become more complex, formalized, and decentralized (Aldrich & Herker, 1977; Child & Mansfield, 1972; Miles, Snow & Pheffer, 1974; Pugh et al., 1968). The technology utilized by the organization has also been related to organizational structure. The technology of service firms appears to require more flexibility

since the technological transformation is performed on people as opposed to on raw materials. This aspect of technology has been proposed to have an impact on the degree of formalization and centralization of organizational structure (Mills, 1986).

Silk and Kalwani (1982) found judgments about the identity of participants to be more reliable than assessments about the participants' degree of involvement or influence in the purchase decision. Johnston (1981) utilized the actual vertical involvement, lateral involvement, connectedness, and extension of the communications process, and the centrality of the purchasing manager as constructs of buying center complexity, size, and centrality. The researcher used the amount of direct communication that the purchasing manager was involved in as a construct of the centrality of the buying center. Within the purchase context of corporate travel, formalization has been measured by American Express (1991) using the constructs of the number and types of rules and policies, and the degree of compliance with those policies.

Johnston's (1981) study found that purchase situation attributes seemed to be stronger predictors of buying center communications than were the characteristics of the overall organization's structure. Other researchers have

suggested that buying center membership could be predicted based on purchase specific variables such as the product type (Jackson & Cooper, 1988; Kotler, 1984; Mattson, 1988). The research would therefore seem to indicate that studies that attempt to measure the relationship of overall organizational structure, size, and technology, to the structure of buying centers for corporate travel services might produce richer results to the degree that the mediating influence of the purchase situation is held constant. Further, Moriarty and Bateson (1982) found that a multi-stage snowballing sampling design, in which the researcher attempts to question each member of the buying center, will yield more reliable data.

Chapter 3

Methodology

Introduction

This chapter outlines the methodology to be used in the study to examine the structure of the buying center for corporate travel service. The following topics will be discussed: (1) the study variables and the associated propositions; (2) the sampling frame and the unit of analysis; and (3) the method of data collection, the instrument, and data analysis.

The Study Variables

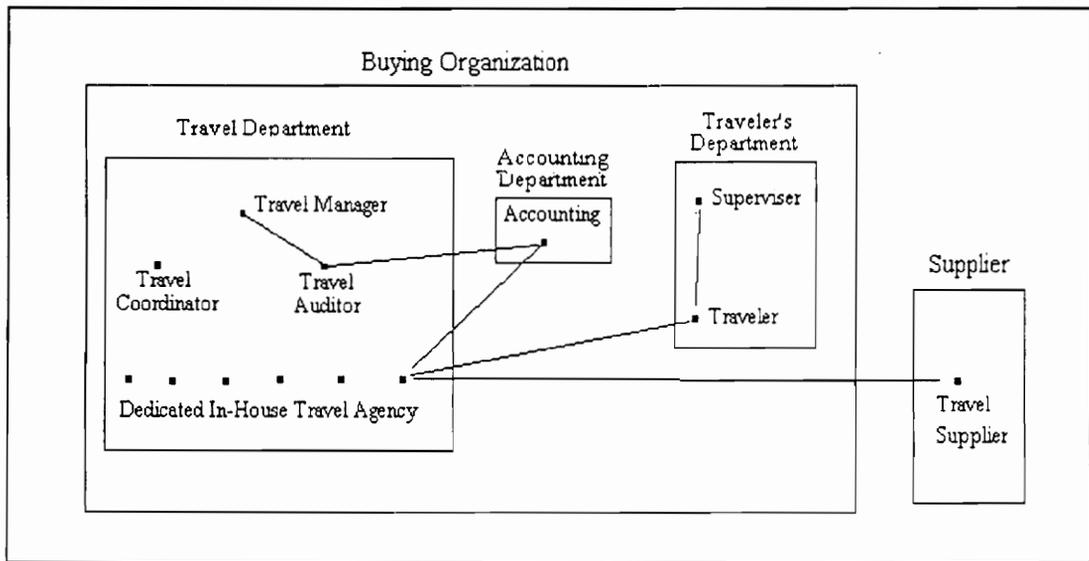
The implication of the model described in Chapter 1 is (1) that buying centers can be described based on their size and their organizational structure, and (2) that their structure can be related to the size, technology, and organizational structure of the organization as a whole. As in Blau (1970), Crawford-Welch (1991), Olsen (1978), and Tse (1987), the organizational structure is described as the degree of complexity, centralization, and formalization.

In his qualitative work on corporate travel management, Bell (1993) proposed that firms could be placed into categories based on the structure of their corporate travel management. In the present study, the researcher therefore attempts to cluster firms based on the degree of extension (size), complexity, centralization, and formalization of their travel management as defined by Johnston (1981). Johnston (1981) defined these terms as: (1) extension -- the total number of people involved in the buying center; (2) complexity -- the extent of lateral involvement, vertical involvement, and connectedness present in the buying center; (3) centralization -- the number of buying center members with whom the travel manager has direct communication; and (4) formalization -- the amount of written versus verbal communication among the members of the buying center, the number of travel-related rules that have been formalized into policy, the presence of efforts on the part of the firm to insure compliance with policy and the extent of compliance with policy. The measurement of these constructs of structure will be discussed in the section on data analysis.

Sheth (1973) argued that organizational buying behavior could also be related to the technology employed by the firm. Since in services the product is the transformation process of individuals (Miles, Snow & Pfeffer, 1974), and since that transformation process is believed to dictate the firm's technology

(Miles, Snow & Pheffer, 1974; Perrow, 1967; Woodward, 1965), the buying center technology in the study will be held constant by holding the product constant. As mentioned in Chapter 1, the product type that will be used as the purchase context for this study of industrial buyer behavior will be air travel services. Additionally, the sample utilized for the Travel Manager Telephone Survey will only include travel managers whose purview includes North America. In an attempt to hold the purchase situation constant (Johnston, 1981), the purchase context will be further narrowed to a domestic business-related trip.

Johnston (1981) argued that an understanding of the sources of influence, or structure of the buying center, is fundamental to the study of industrial buyer behavior. The constructs of extension (size), centralization, and complexity, will therefore be measured using diagraphs (Johnston, 1981) representing the involvement of personnel in the buying process and the flow of communication within the buying center. Figure 2 represents a diagraph similar to those drawn in Johnston and Bonoma (1981, p. 147), in which the researchers constructed diagraphs in order to facilitate the calculation of measures of each organization's organizational structure. As shown in Figure 2, the researcher in the present study used vertical involvement, lateral involvement, and connectedness to measure overall firm complexity.



Measures:

Size (Extensivity):	6 total individuals involved in the firm
Lateral Involvement:	3 departments
Vertical Involvement:	3 levels
Connectedness:	10 total communication links
Centralization:	2 communication links for the travel manager

FIGURE 2
A Communication Picture of a Buying Center
for Corporate Air Travel Service

In the Johnston and Bonoma (1981) study, the centralization of the purchasing directors in communications regarding the purchase decision was the primary measure of centralization within the buying center. The researchers' measure of formalization was the degree to which communications regarding a purchase decision were written. One of the differences in the Johnston and Bonoma (1981) study and the present study is that the present study diagraphs reflect the absolute degree of complexity of the buying center and the centrality of the travel manager as shown in Figure 2, rather than the relative degree of complexity and centrality within the firm.

A hierarchical agglomerative clustering method (Hair, Anderson & Tatum, 1987) will be used in an attempt to group firm air travel buying centers based on these variables. The specific method of calculation of these variables will be discussed in the section on data analysis. The researcher will attempt to find empirical support for the following proposition:

P₁ -- Firm buying centers for air-travel services can be grouped based on the variables size, complexity, centralization, and formalization.

If significant differences can be found in buying center variable means across the cluster-analysis derived groups, then the analysis would suggest that the firm

buying centers represent a random sample from more than one multivariate distribution (Aldenderfer & Blashfield, 1984).

If the data, by way of the analysis described above, supports the proposition that firms can be grouped based on the structure and size of the buying center for air travel services, the researcher will then attempt to measure the relationship of the size, technology, and structure of the overall organization to firm buying center membership (Figure 1). The organizational characteristics of size, technology, and structural complexity, centralization, and formalization will be treated as the independent discriminating variables in a multiple discriminant analysis (MDA) that treats group membership in the cluster analysis-derived groups of firm buying centers as the dependent variable. The following propositions will be tested:

P₂ - Firm buying center group membership can be differentiated by the relative size of the firm.

P₂ will be supported if firm size is found to differentiate better than chance between the cluster analysis-derived groups of firm buying centers.

P₃ - Firm buying center group membership can be differentiated by the degree to which the firms product(s) is(are) characterized as a good(s) versus a service(s).

P₃ will be supported if firm technology is found to differentiate better than chance between the cluster analysis-derived groups of firm buying centers.

P₄ - Firm buying center group membership can be differentiated by the degree of centralization inherent in the organizational structure of the firm.

P₄ will be supported if organizational centralization is found to differentiate better than chance between the cluster analysis-derived groups of firm buying centers.

P₅ - Firm buying center group membership can be differentiated by the degree of formalization inherent in the organizational structure of the firm.

P₅ will be supported if organizational formalization is found to differentiate better than chance between the cluster analysis-derived groups of firm buying centers.

P₆ - Firm buying center group membership can be differentiated by the degree of complexity inherent in the organizational structure of the firm.

P₆ will be supported if organizational complexity is found to differentiate better than chance between the cluster analysis-derived groups of firm buying centers.

P_2 through P_6 speak to the relationships between organizational characteristics and the structure of the buying center. P_2 through P_6 will be rejected if the variables are not found to discriminate significantly between groups of firm buying centers. As suggested by Hair, Anderson, and Tatum (1987) and Klecka (1986), the proportional chance criterion will be utilized in testing the predictive capability of the organizational variables. The specific variables utilized in measuring these organizational characteristics and the data analysis will be discussed further in the following sections.

The Sampling Frame and Unit of Analysis

The present research will utilize as its sampling frame the attendees of the 1993 conference of the National Business Travel Association. A mail survey (Exhibit 6) was administered to 730 corporate travel executives who were registered at the conference. Some of the research questions associated with this study were included as part of this larger survey (to be discussed in the next sections). The researcher then utilized Protocol Analysis to create a snowballing sample (Johnston, 1981; Moriarty & Bateson, 1982). Johnston (1981) argued that in Protocol Analysis the researcher is more likely to collect data that is not biased by memory loss by asking the interviewee to remember the last purchase. In the

present Protocol Analysis, the organizational members are asked to recall with whom they communicated regarding a purchase. The process continues until all members of the organization who had communication regarding the particular purchase situation have been interviewed. In this study, respondents to the mail survey who agreed to participate in future research were used as the initial respondents in a telephone survey. Other members of the buying center for a specific domestic, business-related, air-travel service purchase are identified by the respondents in the initial phone call to each firm and subsequently included in the sample.

The unit of analysis for the study is the purchase decision of an air travel service within the firm's buying center. The sampling procedure is essential to the present research because it frames the unit of analysis. The sample is random in that all travel managers attending the conference are given an equal opportunity to respond. The sampling frame is relevant to the study of the buying center for corporate travel services because the National Business Travel Association consists primarily of corporate travel management executives.

The Method of Data Collection and the Instruments

As described above the data collection was conducted in two phases: (1) selected questions included in a mail survey entitled "Business Travel Policy Study" written and distributed by Bell (1993); and (2) telephone surveys of multiple respondents within each of approximately 50 companies that were randomly selected from within the sampling frame. The telephone interviews were semi-structured. The mail survey asked the travel executive in each firm a number of questions, the answers to which should be a matter of record within his/her firm. For example, the total dollar amount of the firm's yearly air-travel service expenditures was requested and should have been a matter of record. In addition to the recorded fact-based questions, the travel executive was asked a number of questions that required him/her to self-type, to state an opinion of, the organizational structure of the firm.

Self-typing of firm structure has been used by hospitality researchers as a method of data collection in studies related to organizational structure (Crawford-Welch, 1991; Tse, 1987). In his book on researching sensitive topics, Lee (1993) suggests that sources of criteria upon which to assess the validity of self-reported data are data obtained from official reports and from data obtained from surveys

of partners and family members. The technique called Protocol Analysis used by Johnston (1981) and used for the current research study serves to verify participation in the buying center. At the end of the telephone survey of the travel executive (Exhibit 7), the researcher solicited information about which personnel were involved in a specific domestic, business-related, air-travel service purchase, and about the communication flows throughout the buying center. As additional members of the buying center were identified, they were asked to identify other members until all the personnel involved in the buying process were known.

The research questions discussed below were included in a research instrument that is broader in scope, the 1993 Business Travel Policy Study conducted by Cornell University researchers (Bell, 1993). A pre-test of the research design was done from a convenience sample of ten companies that were part of the larger sample of 730 corporate travel executives. The pre-test was conducted in three stages. First, the Business Travel Policy Study (Exhibit 6) was administered by mail to the ten firms. Second, in order to pre-test the Travel Manager Survey Instrument (Exhibit 7), attempts were made to contact by telephone the travel executives of these firms. The travel executives of seven firms were contacted. Finally, of the seven firms, two allowed the researcher to contact the actual travelers who responded to the Other Buying Center members

survey (Exhibit 8). Based on the pre-test, a number of changes were made in the wording and/or format of the instruments. The pre-test will be discussed further in Chapter 4. In order to discuss the final study format, only the revised survey instruments are shown below.

The Business Travel Policy Study

The following questions are those from the Business Travel Policy Study (Exhibit 6) that were analyzed as part of the current study:

1. Please mark each of the following levels of your corporation about which you feel qualified to answer questions regarding business travel policy.

<input type="checkbox"/> Local operations	<input type="checkbox"/> Regional or Divisional level
<input type="checkbox"/> North American level	<input type="checkbox"/> World Wide

4. Please indicate True or False for the following statements about your corporate travel policies.
 - There is an air travel policy that specifies the class of service (first class, business class, etc.) that is to be used.
 - There is an air travel policy that requires the use of lowest available fares.
 - There is an air travel policy that provides for special situations such as Saturday Night-overs or the use of more expensive flights.
 - Our travel policy names preferred or exclusive airline companies for use by business travellers.
 - There is no policy or consistent practice other than getting approval for air travel.

Question 4 is designed to measure the degree of formalization (Evers et al., 1976) of travel management policy related to the purchase of air-travel service. The question format is similar to that used by the Aston group and the American Express (1991) study of corporate travel management. The specific questions were derived based on the qualitative research of Bell (1993). Each of the first four statements indicated in the affirmative by the interviewee was assigned a 1. An answer of False to the fifth question was also assigned a 1. A formalization score was then calculated out of a possible 5 points. The higher the score, the higher is the degree of formalization of the structure of the buying center.

5. Please estimate the percentage of each of the following ... travel arrangement that complies with your corporation's travel policies by placing a mark on ...the line below.

Air Travel |----|----|----|----|----|----|----|----|----|

 0 20 40 60 80 100

Question 5 is designed to measure another construct of formalization, the extent to which rules are obeyed (Hage & Aiken, 1967). This question was also adapted from the American Express (1991) study. The mean score of this question was used as a measure of formalization in the structure of the buying center.

6. Please indicate the lowest level in your firm with the authority to make the following decisions using the scale below.

- (7) - if the level is above president/CEO (i.e., Board of Directors or Owner)
- (6) - if at the level of CEO or President
- (5) - if at the level of a functional manager (i.e. V.P. Marketing, V.P. Finance, etc.)
- (4) - if at the level of a district or regional manager (i.e. responsible for several locations)
- (3) - if at the level of a plant or site manager (i.e. General Manager)
- (2) - if at the level of a subunit manager (i.e. Assistant Manager, Department Manager)
- (1) - if below the level of a subunit manager (Assistant Manager, Department Manager)

- ___ marketing expenditures
- ___ hiring and firing of employees
- ___ expansion into new markets
- ___ allocation of human resources
- ___ amount of overtime to be worked at one site
- ___ the number of production workers required
- ___ new advertising and promotion

Question 6 is designed to measure the degree to which the structure of the overall organization is centralized. The question is based on the work of the Aston group and was adapted from the work of Tse (1987) and Crawford-Welch (1991). An index of the degree of centralization of the overall firm was calculated by dividing the sum of the scores by 8. The higher the score, the more centralized is the organizational structure.

7. Please indicate below which of the following activities at the corporate level are the responsibility of at least one full-time individual.

- Administrative Procedures
- Financial Resource Management
- Inventory Control
- Legal and Insurance requirements
- Operations
- Public Relations
- Personnel Hiring and Training
- Purchasing Control
- Quality Control
- Research and Development

Question 7 relates to the issue of specialization which is a construct of structural complexity (Blau & Schoenherr, 1971). This question has been adapted from the research instruments used by Tse (1987) and Crawford-Welch (1991). Each activity indicated by the interviewee as being the responsibility of at least one full-time individual was scored as 1. The higher the total score, the higher is the score of this construct of complexity. A second construct of complexity, specialization, is measured in questions 8b and 8c.

8. Please provide the following information about yourself and your company. All data will be kept strictly confidential.

Corporation Name: _____
 Your Name: _____
 Address: _____

Company/Division _____
 Title: _____
 Telephone: _____ ext. _____

These data fields provide the information necessary for the researcher to link the mail survey results to the telephone survey process.

- 8a. What was your corporation's sales volume from all divisions last year? _____
- 8b. How many divisions does your company have? _____
- 8c. How many separate plants or operating locations are there? _____
- 8d. Please indicate the number of employees in your company: _____
- At your location: _____
- In the USA: _____
- Worldwide: _____
- 8e. How many employees traveled on business at least one time last year? _____
- 8f. Please estimate the amount spent on corporate travel for your corporation last year:
Airfares _____

Questions 8a, 8d, 8e, and 8f are four constructs of firm size. Questions 8a and 8d are adapted from Johnston (1981) and proposed by Peters & Venkatesan (1973). Questions 8e and 8f are adapted from the American Express (1991) study. The higher the numbers, the larger is the size of the firm.

Questions 8b and 8c are questions related to complexity and have been used by researchers (Crawford-Welch, 1991; Johnston, 1981; Tse, 1987) to measure the overall complexity of the firm. The higher the number, the higher is the degree of complexity.

9. Given that products can be a combination of goods and services, and that your firm may produce many kinds of products, at which point in the continuum between goods and services would the majority of your corporation's products be characterized? Please put a mark along the scale below.

(Goods) 1 2 3 4 5 6 7 (Services)

Question 9 attempts to measure the degree to which the technology employed by the firm would be characterized as service versus manufacturing. Although there are several dimensions of technology mentioned in Chapters 1 and 2, this method of describing a firm's technology is based on the view that service technologies are inherently different from manufacturing technologies (Miles, Snow & Pheffer, 1974; Mills, 1986; Mills & Marguiles, 1980). A score of 4 would imply that half of the products are goods and half are services, or that the one or more products produced were each a combination of half-goods and half-services.

10. This is the first in a series of studies about corporate travel policy and administration. If you would like to participate in future research, please put a mark in the box below. The researchers sincerely appreciate your time, and thank you for your valuable contribution to this project.

I am interested in participating in future corporate travel research. _____

By answering in the affirmative the participant opens him/herself to the possibility of being included in the remaining portion of the data collection, the telephone survey.

The Travel Manager Telephone Survey Instrument

This instrument (Exhibit 7) was administered to gather data relevant to the structure of the communication process within domestic, business-related, air travel service buying centers.

After the researcher exchanges greetings and insures that the interviewee is the travel manager who has previously completed the Business Travel Policy Study, the data collection will evolve as follows... "I am working with the research team from Cornell on the travel research that they are conducting. You had indicated on a mail survey that you might be willing to participate in further research. We have four short questions that we would like to ask you. Is this a convenient time for you. We are trying to profile firms by their organizational structure and their travel decision making process. Because of the potential subjectivity of the questions we are doing this part of the research by telephone. As before, the information obtained in this research regarding individual firms will be kept strictly confidential and will only be reported in the aggregate."

Question 1 First, how many people work in your travel management department?

The answer to Question 1 allows the researcher to begin to draw the portion of the diagraph related to the travel management department.

Please think of the last domestic business-related air-travel purchase in which you or your department was involved...

This prompting prior to the following questions frames the specific purchase situation as domestic air-travel service purchased for a company employee who was taking a domestic trip, the primary purpose of which is related to company business.

Question 2

Within your company, what was the level of the employee for which the domestic air travel was purchased?

- corporate management
 divisional (mid/regional level management)
 plant
 departmental management
 professional/technical
 staff
 other

Question 3

- a. Who else, other than yourself, was involved in this domestic air-travel purchase?
1. Who decided to travel?
 2. What was the procedure for making this air-travel purchase?
 3. Who authorized the travel?
 4. Who determined the budget?
 5. Who chose the carrier?
 6. Who made the reservation?
 7. Then what happened...?
 8. What department paid the service invoice?
- b. Of these people with whom did you have direct communication?
- c. What percentage of this communication was written?

<u>Name</u>	<u>Position</u>	<u>Direct Communication (Y/N)</u>	
_____	_____	_____	% Written _____
_____	_____	_____	% Written _____

Question 3 is semi-structured and provides the researcher with more detail on personnel involvement and communication flows with which to diagraph the buying process. Questions 2, 3a, 3b, and 3c provide the researcher with information necessary to draw the diagraph of the specific buying situation to be studied. Question 3c is a measure of the degree of formalization of the buying center. A combined mean response to the Questions 3c and 2b of the Other Buying Center Members Instrument (Exhibit 8) will be calculated.

"Finally, a question about your company's overall organizational structure..."

Question 4

Based on a 1 to five scale, with 1 being very inaccurate and 5 being very accurate and 3 being uncertain,

How accurately does the statement describe your organization?

1	2	3	4	5
Very Inaccurate	Inaccurate	Uncertain	Accurate	Very Accurate

_____ The organization has a very large number of written rules and policies.

_____ A 'rules and/or procedures' manual exists and is readily available within this organization.

_____ There is a complete written job description for most jobs in this organization.

_____ The organization keeps a written record of nearly everyone's job performance.

Question 4 is adapted from the work of Oldham and Hackman (cited in Price & Mueller, 1986). The question is designed to measure the degree of formalization of the structure of the organization. As done in Oldham and Hackman (in Price and Mueller, 1986), a combined mean will be determined for these four questions. The higher the mean, the more formalized is the organizational structure.

"It appears that _____ was(were) quite deeply involved in this purchase. Would it be possible for me to talk briefly with them? I have a few questions I would like to ask each of them. What are the telephone numbers..., destination/date, and name of the person who traveled?"

This question provides the information necessary to add additional buying center members to the pool of study participants (Exhibit 8).

Other Buying Center Members Instrument

"I am working on a business travel study with researchers at Cornell University. " _____, whom I have already interviewed, said you might be able to help us answer a couple of questions. In order to keep our information uniform across firms we have chosen to ask people about the "last purchase" of a domestic business-related air-travel service. Since _____ suggested that your trip to _____ was the last purchase by your firm that he was aware of we wanted to ask you a few short questions about it. This should take less than five minutes. Is this a convenient time for you?"

Question 1

- a. Do you remember being involved in this purchase?
- b. What is your position in the company?
- c. Who else was involved in the planning of this trip? (get name and department) _____ Anyone outside of your company; i.e., travel agent? _____

Question 2

- a. Of these people with whom did you have direct communication?
 b. What percentage of this communication was written?

<u>Name</u>	<u>Position</u>	<u>Direct Communication (Y/N)</u>	
_____	_____	_____	% Written _____
_____	_____	_____	% Written _____
_____	_____	_____	% Written _____

Question 1 is designed to identify additional members of the organization who are participating in the buying center for this particular purchase situation. Question 2 is designed to provide additional information regarding the degree of formalization of the buying center structure.

Questions 1 through 3 of the Travel Manager Instrument Telephone Survey Instrument (Exhibit 7) and Questions 1 and 2 of the Other Buying Center Members Instrument (Exhibit 8) have been adapted from the Johnston (1981) study. The information will be of two types, personnel involvement and communication flow. This information will ultimately be used in measuring: (1) the complexity of the buying center - vertical involvement, lateral involvement, and connectedness of the buying center; (2) the degree of centralization - the relative centrality of the travel

manager and extension; (3) extension -- number of members of buying center members; and (4) the degree of formalization of the buying center. Data analysis will be discussed in the next section.

Data Analysis

The underlying analytical model that the data collection procedure is designed to test implies that there is a statistically measurable relationship between a set of metric variables (factors related to the overall organization) and category membership (groupings of buying centers derived through a hierarchical cluster analysis of variables related to their internal organizational structure). The categories of buying centers will be derived based on a cluster analysis of the responses to preceding questions eliciting information about the buying center's structural complexity, centralization, and formalization. The relative complexity and centralization of each of the buying centers was derived based on an analysis of the diagraph drawn by the researcher which depicts the buying center members and communication flows (Figure 2). Formalization in the buying centers was measured directly from interviewee question responses.

Complexity was measured using three constructs related to participation in the buying center: (1) vertical involvement -- the number of different levels of organizational hierarchy which become involved in, or have communication with other organizational members about, the particular air-travel service purchase studied; (2) lateral involvement -- the number of separate departments, divisions, and/or functions involved in the network of communications regarding this particular purchase; and (3) connectedness -- the number of direct communication links (two people per communication link - one sender/one receiver) in the buying center.

Size of the buying center was measured as the total number of individuals involved in the last purchase of a domestic business-related air-travel service. With this question, the researcher frames the context as that of the reservations phase, through the payment phase, of the purchase process. Centralization of the travel manager (the number of communication links he/she is involved in as a sender or receiver compared to the total number possible) will be the primary measure of the centralization of the travel management department.

The relative degree of formalization of the buying center was measured using three constructs: (1) the degree to which company policy regarding air travel

is written; (2) the degree to which communication within the buying center is written; and (3) the degree of compliance with corporate travel policy. Question 4 of the Business Travel Policy Study (Exhibit 6) is designed to measure the first construct. Responses to Questions 3c of the Travel Manager Telephone Survey Instrument (Exhibit 7) and 2b of the Other Buying Center Members Instrument (Exhibit 8) will be averaged to provide an overall measure of the second construct. Question 4 of the Business Travel Policy Study (Exhibit 6) will provide a measure of the third construct of formalization in the buying center.

Five factors related to the overall organization within which each of the buying centers exist will be measured: (1) size; (2) technology; (3) complexity; (4) centralization; and (5) formalization. Questions 8a, 8d, 8e, and 8f on the Business Travel Policy Study (Exhibit 6) are measures of firm size. Question 5 measures the degree to which the technology of the firm reflects that of service versus manufacturing. Questions 7, 8b, and 8c measure the degree of structural complexity of the firm. Question 6 is designed to measure the degree of centralization of the firm's structure, while Question 4 of the Travel Manager Telephone Survey Instrument (Exhibit 7) is designed to measure the degree of formalization of the organization.

Since the dependent variable (category membership of the buying centers) will be a non-metric variable and the independent variables (factors related to the overall organization) may be described in metric form, the appropriate statistical procedure for measuring the statistical relationship between the independent and dependent variables is multiple discriminant analysis. Through multiple discriminant analysis, the researcher will attempt to discriminate between the cluster analysis-derived groups of firm buying centers and to derive the best combination of variables for correctly classifying firms into each group. The "proportional chance criterion" (Hair, Anderson & Tatum, 1987, p.89) will be used to determine if the discriminant function is capable of distinguishing group membership. For the constructs of organizational size, centralization, formalization, and complexity, a Pearson Correlation Matrix (SPSS, 1988, p.419) will be calculated. If two or more variables designed to measure the same construct are found to be highly correlated at the .01 level, each variable will be put into a separate step-wise MDA to determine which discriminant variables produce the highest percentage of firm buying centers classified correctly.

Summary

Both the constructs of structure and the data collection technique employed in the present study of corporate travel will be similar to Johnston (1981). Buying centers, therefore, will be diagraphed (Figure 2) based on their size and degree of complexity, centralization, and formalization. As suggested in Bell (1993) the researcher will group firms based on the structure of their corporate travel management. Further, the relationship between the structure of the buying center and the organizational variables of size, technology, complexity, centralization, and formalization will be measured.

The unit of analysis for the study is the purchase decision of an air travel service within the firm's buying center. The research will utilize as its sampling frame the attendants of the 1993 conference of the National Business Travel Association. A mail survey (Exhibit 6) was administered to 730 Corporate Travel Managers who were registered at the conference. Some of the research questions associated with this study were included as part of this larger survey (to be discussed in the following chapters). A snowballing sample was then created using Protocol Analysis (Johnston, 1981; Moriarty & Bateson, 1982) to verify the responses of the travel executives.

Travel executives of each of the firms in the sample received a copy of the Business Travel Policy Study Instrument (Exhibit 6). The travel executives responding in the affirmative that they were willing to participate further were contacted by telephone by the researcher to collect the information requested on the instrument. At the end of the interview, the researcher solicited information about which personnel were involved in a specific air-travel service purchase, and about the nature of the communication flow throughout the buying center.

The first objective of the study is to attempt to support the proposition (P_1) that firm buying centers can be grouped according to their size and structure. A hierarchical clustering program will be utilized in analysis. If the program successfully groups firm buying centers into more than one group, the researcher will proceed to the second objective, that of testing the relationship of organizational variables (size, technology, complexity, centralization, and formalization) to buying center structure. P_2 through P_6 will be tested simultaneously in a multiple discriminant analysis. This procedure will indicate if there is significant statistical evidence that these variables related to the organization as a whole can be used to produce a discriminant function that will successfully categorize firm buying centers based on their organizational structure.

CHAPTER 4

RESULTS

Introduction

The underlying analytical model utilized in this research (Figure 1) implies that there is a statistically measurable relationship between a set of metric variables (related to the overall organization) and firm air-travel service buying center category membership (groupings of buying centers derived through a hierarchical cluster analysis of variables related to the internal organizational structure of the buying centers). These buying centers were derived with the use of diagraphs drawn by the researcher depicting the buying center members and communication flows (Figure 2). As indicated in Chapter 3, both mail and telephone survey data collection methods were used.

Data Collection and Response Rate

The Business Travel Policy Study (Exhibit 6) that provided the sampling frame and part of the data to be utilized by this study was mailed to 730 attendees

of the 1993 National Business Travel Association Conference. A total of 212 (29%) useable responses were received. Of these 212 responses, 139 corporate business travel executives indicated a willingness on the mail survey to participate in future research. Ten of these respondents were used in a pre-test of the research instrument. The remaining 129 corporate business travel executives were used as the sample for the Travel Manager Survey (Exhibit 7). At least two attempts were made to telephone each of the sample members during February of 1994. Fifty travel executives ($n=50$) whom the researcher was able to contact and who provided the data for the current study agreed to participate in the Travel Manager Survey (Exhibit 7) that was administered by telephone.

Discussion of the Pre-test

As mentioned in Chapter 3, the pre-test revealed a number of problems related to the reliability of the survey instruments. First, in Question 5 of the Business Travel Policy Study (Exhibit 6), the scale utilized in the pre-test originally had no hash marks on it. This format made it necessary for the researcher to guess at the location of the respondents' marks, therefore bringing the reliability of the data processing into question.

Next, in the pre-test of the Travel Manager Telephone Survey (Exhibit 7), Question 1 did not include the phrase, "business-related." It was found that some travel management departments handled arrangements for the vacation-related travel for their employees as well as for business-related travel. The phrase, "business-related" was added after the pre-test in order to more narrowly frame the purchase situation context.

Finally, what, after the pre-test, became Question 4 of the Travel Manager Survey (Exhibit 7) was actually Question 1 of the pre-tested version of the instrument. During the pre-test, it became apparent that this question was more sensitive in nature to the survey participants than the other questions in the instrument. Therefore, it was moved to last place in the sequence of questions.

Single-Stage Sampling Bias

Of the fifty travel managers, six agreed to give out identities of other buying center members, thereby initiating a snowballing sample. Though data from this survey of Other Buying Center Members (Exhibit 8) was not large enough to analyze statistically, it did offer an opportunity to test qualitatively the

reliability of the assessment of the composition of the buying center given by the sample of corporate travel executives. In contrast to the findings of Moriarty and Bateson (1982) multi-stage snowballing seemed to add little to the determination of size or composition of the buying centers. In none of these six firms did any of the other buying center members who had been identified by the initial participant, identify other buying center members not already made known to the researcher. The mean size of the buying centers was 3.83 members.

Profile of Respondents

As suggested by their titles (Table 1), the travel executives participating in the Travel Management Study represented a cross section of Travel Management Department organizational positions.

TABLE 1
Corporate Travel Executive Positions

<u>Title</u>	<u>Number in Sample</u>
Corporate Travel Manager	14
Director, Transportation/Travel Services	10
Travel Coordinator	5
Administration Services Manager	5
Corporate Travel Administrator	4
Travel Supervisor	3
Purchasing Manager	2
Supervisor, Passenger Services	1
Corporate Travel Planner	1
Branch Manager - Travel Services	1
Assistant Travel Manager	1
Travel Program Specialist	1
Director, Travel Management	1
Manager, Personnel Accounting/Benefits	1

As previously suggested, the travel executive was prompted to discuss the last purchase of a domestic, business-related air-travel service in order to frame the context of the buying situation. He/she was first asked the level of the traveler within the organization. Table 2 reflects answers by frequency of traveler position.

TABLE 2
Level of Employee for Whom Air Travel Was Purchased

Level of Employee	Frequency
Corporate Management	9 (18%)
Divisional (Mid/Regional) Management	2 (4%)
Plant Management	3 (6%)
Departmental Management	16 (32%)
Professional/Technical	18 (36%)
Staff	2 (4%)

The Dependent Variable

In order to find support for the proposition that buying centers could be grouped and to create a categorical dependent variable for further analysis, firm buying centers were analyzed based on a cluster analysis of their size (extension) and degree of structural complexity, centralization, and formalization. An agglomerative hierarchical cluster analysis utilizing the Ward's method (Hair, Anderson & Tatum, 1987) was used. The Ward's method is the favored methodology for smaller samples. In this agglomerative clustering procedure each buying center starts out in its own cluster. Because the methodology uses the squared Euclidian distance as the measure of inter-object similarity, Ward's also allows the researcher to later compare cluster means.

Cluster coefficients were plotted against the number of clusters for one through ten cluster solutions. The data shown in Figure 3 represents the relationship of the fusion coefficients to the number of clusters resulting from the cluster analysis. It would seem that where the clustering procedure combines progressively more dissimilar clusters, higher fusion coefficients based on the Ward's Method and using squared Euclidian distance as the measure of inter-object

similarity, result. Therefore, the dramatic drop in the slope of the line between the one and two cluster solutions, in which the fusion coefficient loses 66% of its value, represents the separation of two relatively dissimilar clusters. Furthermore, the smaller drop in the slope of the line between the two and three cluster solutions, in which the fusion coefficient loses 38% of its value, represents the separation of slightly more similar clusters. After the three-cluster solution, the change in the slope of the line varies only between 28% and 15%, thereby indicating that the clustering procedure is separating clusters that are progressively more similar. Therefore, the three-cluster solution is supported.

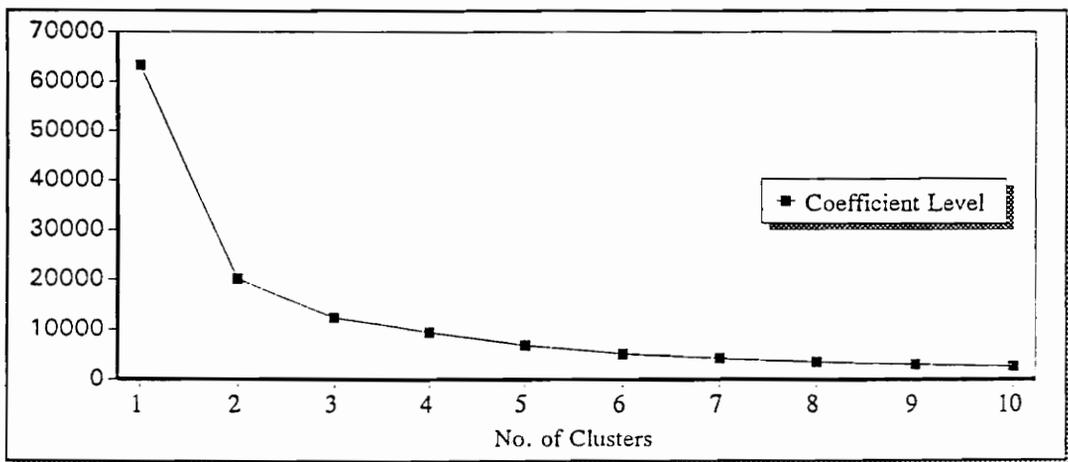


FIGURE 3
Coefficient/Cluster Slope

Variable Measures

The variables -- size, complexity and centralization of the buying center were counted by the researcher using the communication diagraphs that were created during the telephone interviews of the travel executives.

Size

The size of the buying center was measured as the total number of individuals involved in the last purchase of a domestic business-related air-travel service. This variable was called extension when used by Johnston (1981).

Buying Center Complexity

The structural characteristic, complexity, was measured using three constructs related to participation in the buying center: (1) vertical involvement -- the number of different levels of organizational hierarchy which became involved in (had communication with other organizational members about) the last domestic, business-related, air-travel service purchase; (2) lateral involvement -- the number

of separate departments, divisions, and/or functions involved in the network of communications regarding this particular purchase; and (3) connectedness -- the number of direct communication links (two people per communication link - one sender/one receiver) in the buying center.

Buying Center Centralization

Centralization of the travel executive (the number of communication links he/she was involved in as a sender or receiver) was the primary measure of the centralization of the buying center.

Buying Center Formalization

The relative degree of formalization of the buying center was measured based on the following constructs: (1) the degree to which corporate travel policy was written; (2) the degree to which communication within the buying center was written (or electronic) versus verbal; and (3) the degree of compliance with corporate travel policy. Questions 407, 408, 409, 410, and 411 of the Business Travel Policy Study (Exhibit 6) was designed to measure the first construct. Responses to Questions 3c of the Travel Manager Telephone Survey Instrument

(Exhibit 7) and 2b of the Other Buying Center Members Instrument (Exhibit 8) were averaged to provide an overall measure of the second construct. Question 4(Air) of the Business Travel Policy Study (Exhibit 6) provides a measure of the third construct of formalization in the buying center.

Validity and Reliability

All scales for the measures of buying center structure are theoretically ratio, having absolute zero points. As indicated in Chapter 2 (Choffray & Lilien, 1978; Hage & Aiken, 1967; Johnston, 1981), the variables that represent buying center size, complexity (vertical integration, lateral integration, and connectedness), and centralization (Table 3) are structural characteristics of the actual participation process as opposed to planned or predicted membership in the buying process for a particular service purchase. Thus, their content validity would seem to be inherently better than self-typed respondent predictions.

An attempt had been made to utilize multiple constructs of the formalization of the buying center. The first measure, buying center formalization, is the extent to which travel service purchase rules have been written into organizational policy. Though the wording of the question does not refer to a particular travel service

buying situation, the answer would be based on documented facts to which the travel executive would logically have access. The second construct of formalization, percentage of total communication that was written also elicits a self-typed response but the prompting by the researcher sets the context as that of a specific service purchase. The third construct, compliance with travel policy, is also a self-typed variable and is not related to the specific travel instance but with policy in general.

Variable Means

The means of the buying center variables are shown in Tables 3. Only two of the variables appear to be significantly different at the .01 level. These variables are (1) the number of people involved in the buying process or buying center size and (2) formalization as measured by the ratio of written to total communication. Centralization and compliance are the two nearest variables approaching significance at .08 and .12 respectively.

TABLE 3
Buying Center Variable Means by Cluster Group Membership

Cluster Membership	Buying Center Variables			
	Size	Vertical Integration	Lateral Integration	Connectedness
<i>Cluster 1</i>				
Mean	3.5600	2.8400	2.8400	5.5000
Std Dev	0.8206	0.9866	0.6880	1.9781
Cases	25	25	25	24
<i>Cluster 2</i>				
Mean	4.1000	3.6000	2.8000	6.4000
Std Dev	0.9944	1.0750	0.7888	2.4585
Cases	10	10	10	10
<i>Cluster 3</i>				
Mean	4.1429	2.9286	2.7857	6.0000
Std Dev	0.5345	0.8287	0.5789	1.3587
Cases	14	14	14	14
Overall Mean	3.8367	3.0204	2.8163	5.8333
Significance*	0.0530	0.1105	0.9684	0.4395
Total Cases	49	49	49	48

* Note: Significance Levels Based on Analysis of Variance

TABLE 3 (continued)

Cluster Membership	Buying Center Variables			
	Centralization	Extensiveness of Written Rules and Policies	Compliance	Percent Written Communication
<i>Cluster 1</i>				
Mean	0.4800	3.8400	83.0000	8.6800
Std Dev	1.1944	0.8981	13.1498	9.8815
Cases	25	25	25	25
<i>Cluster 2</i>				
Mean	0.2000	3.6000	93.4000	47.0000
Std Dev	0.6325	0.8433	7.7488	8.2327
Cases	10	10	10	10
<i>Cluster 3</i>				
Mean	1.2857	3.2857	88.8571	82.5000
Std Dev	1.6838	0.8254	16.1095	8.9335
Cases	14	14	14	14
Overall Mean	0.6531	3.6326	86.7959	37.5918
Significance *	0.0861	0.1702	0.1219	0.0000
Total Cases	49	49	49	49

* Note: Significance Level Based on Analysis of Variance

Cluster 1, accounting for 25 (51%) of the sample, appears to be composed of firm air-travel buying centers in which communication is mostly verbal and in which there are the fewest participants. Cluster 2, accounting for 10 (21%) of the sample is composed of firm air-travel buying centers in which almost half of the communication is written and in which there are more participants in the purchase process. Cluster 3 is composed of firm air-travel buying centers in which communication is mostly written and in which the buying centers are the largest.

Proposition Testing

Since the dependent variable (category membership of the buying centers) is a non-metric variable and the independent variables (factors related to the overall organization) may be described in metric form, the appropriate statistical procedure for measuring the statistical relationship between the independent and dependent variables is multiple discriminant analysis. Through multiple discriminant analysis, an attempt was made to discriminate between the cluster analysis-derived groups of firm buying centers and to derive the best combination of variables for correctly classifying firms into each group. The "proportional chance criterion" (Hair, Anderson & Tatum, 1987, p.89) was used to determine if the discriminant function was capable of distinguishing group membership.

The Variables

Five variables, that were related to the structure of the organizations within which each of the buying centers exist, served as the discriminant variables in a Multiple Discriminant Analysis: (1) size; (2) technology; (3) centralization; (4) formalization; and (5) complexity.

Organization Size

Questions 8a, 8d, 8e, and 8f on the Business Travel Policy Study (Exhibit 6 and page 57 herein) are measures of firm size. These data were collected for the purpose of testing P_2 - Firm buying center group membership can be differentiated by the relative size of the firm. However, due to intercorrelation (to be discussed) between the variables, only Question 8f, about firm spending on airfare, was utilized in the Multiple Discriminant Analysis as a discriminating variable. P_2 will be supported to the degree that the variable is found to predict group membership better than chance.

Organization Technology

Question 5 measures the degree to which the technology of the firm reflects that of service versus manufacturing and was utilized in testing P_3 - Firm buying center group membership can be differentiated by the degree to which the firms product(s) is(are) characterized as a good(s) versus a service(s). This variable, measured on a scale from one to seven, is utilized in the Multiple Discriminant Analysis as a discriminating variable. P_3 will be supported to the extent that the variable is found to predict group membership better than chance.

Organization Centralization

Question 6 is designed to measure the degree of centralization of the firm's structure. It is used in testing P_4 - Firm buying center group membership can be differentiated by the degree of centralization inherent in the organizational structure of firm. An overall mean of the responses on each of the scales is used as a discriminating variable in the Multiple Discriminant Analysis. P_4 will be supported to the extent that the variable is found to predict group membership better than chance.

Organization Formalization

Each of the four measures included in Question 4 of the Travel Manager Survey (Exhibit 7 and page 64 herein) is utilized in the Multiple Discriminant Analysis as a discriminating variable. To the degree that any one of the measures is capable of predicting group membership better than chance, P_5 will be supported.

Organization Complexity

Questions 7, 8b, and 8c (Exhibit 6 and page 57 herein) measure the degree of structural complexity of the firm and were utilized in testing P_6 - Firm buying center group membership can be differentiated by the degree of complexity inherent in the organizational structure of the firm. Each of these three variables is used as a discriminating variable in the Multiple Discriminant Analysis. To the degree that any one variable is capable of predicting group membership better than chance, P_6 will be supported.

Validity and Reliability

A Pearson Correlation Matrix (SPSS, 1988, p.419) was run on the variables for which multiple constructs were used (size and complexity). Cronbach's Alpha (SPSS, 1988, p.853) was used to test the reliability of the multi-item scales used for the measurement of organizational formalization and organizational centralization.

Six measures of organizational size were tested for correlation (Table 4). These measures were corporate spending on airfare, number of employees (local), number of employees (worldwide), number of employees (US), and total sales. All of the constructs dealing with number of employees were significantly correlated. Corporate sales was significantly correlated with all but one of these measures, number of local employees. Corporate spending on airfare was correlated with all other measures of organizational size. Since corporate spending on airfare was statistically similar in variance to all of the other constructs of firm size, it was the logical choice as a construct of firm size.

TABLE 4
Correlation of Organizational Size Variables

Variable Name	Corporate Spending on Airfare	No. of Employees	No. of Employees (Local)	No. of Employees (World)	No. of Employees (US)	Sales
Corporate Spending on Airfare	1.0000	0.7475**	0.5841**	0.6452**	0.7739**	.6578**
Total No. of Employees	0.7475**	1.0000	0.4271**	0.4321*	0.9865**	.6827**
Number of Employees (Local)	0.5841**	0.4271**	1.0000	0.2167	0.5386**	.3235
Number of Employees (World)	0.6452**	0.4321*	0.2167	1.0000	0.5650**	.8121**
Number of Employees (US)	0.7739**	0.9865**	0.5386**	0.5650**	1.0000	.8106**
Sales	0.6578**	0.6827**	0.3235	0.8121**	0.8106**	1.0000

Note: Significance based on Pearson Correlation

* = Significant at .05

** = Significant at .01

(2-tailed)

The three constructs of organizational complexity, specialization, number of organizational divisions, and the number of plants/operating locations were also tested for inter-correlation (Table 5). None of the variables were found to be significantly correlated at the .05 level. Therefore, the analysis suggests that they represent distinctly different constructs of organizational complexity.

TABLE 5
Correlation of Organizational Complexity Variables

Variable Name	Specialization	Number of Organizational Divisions	Number of Operating Locations/Plants
Specialization	1.0000	-0.0595	0.2192
Number of Organizational Divisions	-0.0595	1.0000	0.0768
Number of Operating Locations/Plants	0.2192	0.0768	1.0000

Note: Significance level based on Pearson Correlation
(N=49) None Significant at .05

Organization technology was measured based on a single scale of one to seven where one indicated that the travel executive self-typed the organization's primary products as being goods and seven indicated that the travel executive believed that the firm's primary products were services.

The multi-item scales utilized in measuring organizational formalization were tested for inter-object reliability using Cronbach's Alpha (Table 6). They were found to possess insufficient reliability (.5102) to be used as a single construct. Therefore each of the items was utilized as a separate construct of organizational formalization.

TABLE 6
Organizational Formalization

Statements about organization	Alpha (if deleted)
The organization has a very large number of written rules and policies.	0.3744
A 'rules and/or procedures' manual exists and is readily available within this organization.	0.4452
There is a complete written job description for most jobs in this organization.	0.5432
The organization keeps a written record of nearly everyone's job performance.	0.3571
Overall Cronbach's Alpha = 0.5102 (N=50)	

*Note: Scale for answering the question is based on the travel executive's assessment of how accurately each of the statements describes the organization. (1) Very Inaccurate to (5) Very Accurate.

The multi-item scales utilized in measuring organizational centralization were also tested for inter-object reliability using Cronbach's Alpha (Table 7). These scales were found to possess adequate overall reliability (.7669). It was

further noted that the deletion of none of the items would enhance the reliability substantially. Therefore, the overall mean of the items was utilized as the measure of organizational centralization.

TABLE 7
Organizational Centralization

Functional Area Decision Making	Alpha (if deleted)
Marketing Expenditures	0.7214
Hiring/Firing of Employees	0.7602
Expansion into New Markets	0.7670
Allocation of Human Resources	0.7110
Amount of Overtime to be Worked at One Site	0.7222
Number of Production Workers Required	0.7308
New Advertising and Promotion	0.7435
Overall Cronbach's Alpha = 0.7669 (N=44)	

Note: Scale for answering this question was based on the lowest level within the organization with the responsibility for the task mentioned. 1 (below subunit manager) to 7 (above president/CEO)

Multiple Discriminant Analysis

The discriminant analysis procedure was run against the three group solution to the cluster analysis of firm buying centers (Table 8). The discriminant variables in the analysis were organizational size (spending on airfare, number of employees), complexity (specialization, number of divisions, and number of locations), technology, formalization (written rules and policies, procedures manuals, complete job descriptions, and written records of job performance), and centralization. A significance level of .01 was used as the cut-off for variable inclusion in the analysis of 87% of the respondents. The only variable remaining in the equation at this level was corporate spending on airfare. The discriminant equation was capable of correctly predicting group membership in 52.50% of the cases, 44% greater than chance in Function 1. It did not, however, predict any of the buying centers to be members of group three. Furthermore, a second function was not created as there was insufficient statistical significance to do so.

TABLE 8
Multiple Discriminant Analysis of Organizational Variables
on Firm Buying Center Group Membership

Actual Group	No. of Cases	Predicted Group Membership		
		1	2	3
Cluster 1	19	17 (89.5%)	2 (10.5%)	0 0.0%
Cluster 2	10	6 (60%)	4 (40%)	0 0.0%
Cluster 3	11	11 (100.0%)	0 (0.0%)	0 0.0%
Ungrouped	1	1 (100.0%)	0 0.0%	0 0.0%
TOTAL	41	35	6	0

Percent of "Grouped" Cases Correctly Classified: 52.50%

Processing Summary:

50 cases were processed.

3 cases had at least one missing discriminating variable.

47 cases were used for output.

$$C_{\text{pro}} = \frac{(.475)^2 + (.25)^2 + (.275)^2}{.2256 + .0625 + .0756} = .3637 \quad 44\% \text{ better than chance}$$

Note: Classification Results for Cases Selected for Use in Analysis
87% (41 of 47 firm buying centers)

A hold out sample of 13% of the buying centers was used to test the stability of the results (Table 9). In this sample the equation was successful in predicting group membership 20% greater than chance. Again the results indicated that corporate spending on airfare was a significant predictor of group membership though none of the cases were predicted members of group three.

TABLE 9
Multiple Discriminant Analysis of Holdout Sample

Actual Group	No. of Cases	Predicted Group Membership		
		1	2	3
Cluster 1	4	4 (100.0%)	0 (0.0%)	0 0.0%
Cluster 2	0	0 (0.0%)	0 (0.0%)	0 0.0%
Cluster 3	2	1 (50.0%)	1 (50.0%)	0 0.0%

Percent of "Grouped" Cases Correctly Classified: 66.67%

Processing Summary:

50 cases were processed.

3 had at least one missing discriminating variable.

47 were used in the analysis.

$C_{pro} = 55.55\%$ 20.01% better than chance

Note: Classification Results for Cases Not Selected for Use in the Analysis
13 % (6 of 47 firm buying centers)

The relationship of the study participant's self-typed level of qualification to answer questions related to business travel policy (Question 1 of the Business Travel Policy Study (Exhibit 6)) to the level of reported corporate spending on airfare was crosstabulated (Table 10). No significant correlation was found between this variable and the amount of airfare purchases by the firms.

TABLE 10
Self-Reported Level of Qualification of Travel Executive
To Answer Questions Regarding Business Travel Policy By
Reported Corporate Spending on Airfare

Spending on Airfare (in thousands)	Highest Level of Business Travel Policy Discussed			
	Local	Regional	National	Worldwide
51				1
100			1	
350.2			1	
750			1	
800	1			
1,000	1	1		
1,430			1	
1,500			1	1
1,700			1	
2,000				1
2,100				1
2,250	1			
3,000			2	
3,500				2
4,000			1	
4,500			1	
5,000				1
5,507.6				1
6,000			1	

TABLE 10 (continued)

Spending on Airfare (in thousands)	Highest Level of Business Travel Policy Discussed			
	Local	Regional	National	Worldwide
7,000			1	
7,500			1	
8,000			1	1
9,000			1	1
10,000	1			2
11,000				1
11,700				1
12,163.7				1
14,000	1			
17,000				1
18,000				1
19,000			1	
25,000				1
26,300				1
27,000			1	
30,000				2
33,000		1		
55,000			1	
TOTAL	5	2	17	22
	Significance = .5204		(N=46)	

Note: Significance based on Analysis of Variance

Variable Means

Organizational variable means are listed in Table 11. Organizational size as measured by spending on airfare was the only variable whose values proved to be significantly different across cluster groups. Group number two has the highest mean expenditures on airfare with group number three having the lowest. Though the variances were not significant, the direction of the relationship to cluster group membership was similar for number of employees, number of divisions, and number of locations.

TABLE 11
Organizational Variables

Cluster Membership	Size, Technology & Centralization			
	Airfare ¹	Number of Employees ²	Technology ³	Organizational Centralization ⁴
Mean	8,166,894.09	14,411.0417	40.4800	3.4583
Std Dev	7,494,954.68	17,683.4746	21.5718	0.9942
Cases	23	24	25	24
<i>Cluster 2</i>				
Mean	19,176,368.10	22,400.0000	32.8000	3.7619
Std Dev	17,410,036.10	24,703.5567	24.2111	0.6701
Cases	10	8	10	9
<i>Cluster 3</i>				
Mean	6,180,769.23	7,331.5833	35.3571	3.7271
Std Dev	7,728,560.09	9,065.7757	17.7010	0.9845
Cases	13	12	14	13
Overall Mean	9,998,961.85	13,932.8182	37.4490	3.5937
Significance *	0.0103	0.1738	0.5703	0.5957
Total Cases	46	44	49	46

*Notes: Significance based on Analysis of Variance

1 - Scale: 1 (Goods) to 7 (Services)

2 - Scale: Absolute value of spending on airfare

3 - Scale: Absolute value of number of employees

4 - Overall mean across 7 functional areas: lowest level with authority to make decisions:
1 (least centralized) to 7 (most centralized)

TABLE 11 (continued)

Cluster Membership	Organizational Variables - Complexity		
	Specialization ¹	Number of Divisions ²	No. of Operating Locations ³
<i>Cluster 1</i>			
Mean	8.5600	8.7917	12.9231
Std Dev	2.8443	10.2575	11.8565
Cases	25	24	13
<i>Cluster 2</i>			
Mean	9.5000	11.6667	16.2000
Std Dev	1.5811	9.0277	9.5760
Cases	10	9	5
<i>Cluster 3</i>			
Mean	8.7143	8.6364	16.2500
Std Dev	2.7296	7.1592	12.9256
Cases	14	11	8
Overall Mean	8.7959	9.3409	14.5769
Significance*	0.6264	0.7060	0.7780
Total Cases	49	44	26

*Notes: Significance is based on Analysis of Variance.

1 - Scale is sum of 1 to 10 areas of functional task specialization

2 - Scale: Absolute value of number of divisions within the firm

3 - Scale: Absolute value of number of plants/operating locations

TABLE 11 (continued)

Cluster Membership	Organizational Variables - Formalization ¹			
	The organization has a large number of written rules and policies.	A 'rules or procedures' manual exists and is readily available within the organization.	There is a complete job description for most jobs in the organization.	The organization keeps a written record of nearly everyone's job performance.
<i>Cluster 1</i>				
Mean	3.3200	4.0800	4.6400	4.4000
Std Dev	1.2819	1.1874	0.7572	0.9129
Cases	25	25	25	25
<i>Cluster 2</i>				
Mean	3.7000	4.2000	4.5000	5.0000
Std Dev	1.3375	1.0328	0.5270	.0000
Cases	10	10	10	10
<i>Cluster 3</i>				
Mean	3.0714	4.3571	4.4286	4.5714
Std Dev	1.4917	1.0818	1.1579	0.6462
Cases	14	14	14	14
Overall Mean	3.3265	4.1837	4.5510	4.5714
Significance	0.5381	0.7634	0.7450	0.1091
Total Cases	49	49	49	49

*Note: Significance based on Analysis of Variance.
1 - Scale: 1 (very inaccurate) to 5 (very accurate).

Position of Traveler as a Descriptive Variable

In the process of creating diagraphs for the measurement of buying center size and structure, data were collected about the level of the traveler for whom the specific purchase was being made. This categorical variable was found to be significantly correlated at the .05 level with buying center centralization (Table 12) as measured by the number of direct communication links to the travel manager during purchase process.

TABLE 12
Level of Person Traveling by Buying Center Centralization: The
Number of Direct Communication Links to the Travel Manager in the
Air Travel Purchase Process

Direct Communication Links	Level of Person Traveling					
	Corporate Manager	Divisional Manager	Plant Manager	Departmental Manager	Professional/ Technical	Staff
no direct interaction	2	2	2	14	16	2
2 links	3			2	1	
4 links	4		1		1	
TOTAL	9	2	3	16	18	2

Significance = 0.01866 (N=50)

Note: Significance based on Analysis of Variance

Summary

The data collection process, conducted in two stages, was successful in yielding a small sample of firm buying centers (49). A cluster analysis was performed on firm buying centers based on their size (extension) and degree of structural complexity, centralization, and formalization. An agglomerative hierarchical cluster analysis utilizing the Ward's method (Hair, Anderson & Tatum, 1987) was used. The three cluster solution was supported by significant differences across the groups based on their size and percentage of written (or electronic) versus verbal communication within the buying centers.

An attempt was made to find a combination of organizational variables (size, complexity, technology, formalization, and centralization) in order to predict group membership in the cluster-analysis-derived groups of firm buying centers. The "proportional chance criterion" (Hair, Anderson & Tatum, 1987, p.89) was used to determine if the discriminant function was capable of distinguishing group membership. Only organizational size, as measured by spending on airfare, was capable of predicting group membership. This measure was only successful in correctly predicting group membership in 52.5% of the cases.

CHAPTER 5

DISCUSSION

Introduction

In this chapter the researcher will interpret the study results. The implication of the results of the cluster analysis of firm buying centers to the researcher's proposition that firm buying centers could be grouped on the basis of size and structure will be discussed along with the impact of the organizational variables that were proposed to have an effect on the structure of buying centers. Possible explanations for why some variable measures did not relate in the manner predicted will be offered.

The Dependent Variable

The structural variables of buying center size, complexity (vertical integration, lateral integration, and connectedness), formalization (extensiveness of written rules and procedures, relative amount of written versus verbal communication, and the degree of compliance with policies), and centralization of the travel manager to the buying process were the key descriptors of buying center

structure that flowed from the literature review of industrial marketing (American Express, 1991; Bell, 1993; Johnston, 1981). Two of these variables, the relative amount of written versus verbal communication and the size of the buying center, seemed to be related to firm buying center group membership. These results mean that P_1 was only supported with respect to these two variables. The remaining variables, complexity and centralization, did not appear to be related to firm buying center group membership. A number of reasons are possible. Two overriding issues that may have influenced these relationships or lack of them are the sampling procedure, and the constructs and measures of buying center structure that were utilized throughout the study.

The sample of firms came from those firms represented by their travel executives at the 1993 National Business Travel Association (NBTA) conference. These representatives served as the point of contact for data collection. The sampling frame was considered to be appropriate because: 1) by sending representatives to the NBTA conference the firms had provided evidence that they had formalized the travel service purchase process to the point of having at least one person responsible for travel services; and 2) the travel executive was perceived as being able to provide the most expert opinion on the travel service purchase process within the firms. Based on the study results, this sample

appeared to have been appropriate in some ways but unproductive in others. The travel management executives did seem to have accurate perceptions as to the make-up of the actual buying center. This perception is evidenced by the fact that in the firms where the researcher was allowed to interview more than one respondent, no additional buying center members were identified.

However, these firms may or may not be representative of the population of firms that purchase travel services. First, the sample size (49) of useable responses is small for statistical purposes. Though the response rate is reasonable within the sample of those mail survey respondents who indicated a willingness to participate in further research 49 of 129 (37%), the telephone interview sample size (49) compared to the total sample of mail survey respondents (730) is only 6.7%. Second, the high degree of compliance, self-typed by the travel executive, over all groups with travel policy (86.8%) suggests that the firms represented in the sample have in fact been reasonably successful in formalizing the corporate travel service purchase process. This high degree of compliance may or may not be representative of the degree of compliance across all firms. An argument could be made that the firms in this sample were predisposed to have a high degree of compliance with travel policy because they had all evidenced some attempt to centralize the process through at least one key individual.

The use of the number of instances of direct communication as values of the variables, complexity and centralization, may possess limited criterion validity. Participation in the purchase process does not appear to always evidence itself through direct communication in the purchase of a specific travel service by travel managers. Rather, executives may participate by negotiating contracts with suppliers and travel agencies. A high degree of formalization of rules and procedures (mean of 3.6326 out of 4) might not necessarily result in the travel department management being actively involved in each travel purchase. This implication is evidenced by the low mean (.651) number of communication links involving the travel manager in the process (Table 3).

The low incidence of direct communication by the travel manager in the purchase process, less than one communication link per buying center (Table 3), may also be related to buyclass. Though this variable was not measured in this study, researchers have found that repeat-buy situations are characterized by a lesser need for information on the part of the user (Anderson, Chu & Weitz, 1987). Assuming that written policies and procedures are available to guide the traveler in his/her purchase decision there would not necessarily be a need for direct communication by the travel manager. Another measure such as task specialization may therefore have been a more appropriate measure of

centralization. For example, some travel management departments were divided into specializations such as business travel, incentive travel, conferences and meetings, and employee vacation travel. Others divided specializations along supplier categories, i.e., lodging, air travel, and rental car specialists.

Though the research did not indicate that travel management executives participated extensively in the air-travel service buying center, the phases of the buying process prompted by the researcher were the reservations phase through the payment for the travel service. Data regarding the travel manager's participation in the supplier contract negotiation phase were not recorded. In every firm, the traveler and some member of an accounting-related department participated in the communication process for the purchase of the air-travel service. However, in few firms was the travel manager directly involved in the travel service reservation or payment of the supplier. In other studies researchers have found that different organizational members are involved in the buying process at different stages (Bellizzi & Walker, 1980; Lilien & Wong, 1984). In the Lilien and Wong (1984) study, users (production and engineering personnel) were more involved in the earlier phases of the process (determining specifications). Purchasing agents and managers were more involved in selecting a supplier and determining the quantity purchased. Therefore, the fact that participation in the negotiation of supplier

contracts was not studied may have impacted the results of the buying center centralization variable.

Nevertheless, in this study three groups of firm travel service buying centers were found to be significantly different in terms of their formalization as measured by the relative amount of written versus verbal communication and the size or number of participants in the buying process. These results therefore lend partial support for the proposition that corporate air-travel service buying centers can be grouped based on their structural characteristics, at least with respect to their size and degree of formalization. No attempt was made to distinguish between written communication in the form of hard-copy documentation versus electronic data-processing media. Also, as has already been mentioned, only those individuals having direct communication regarding the particular travel incident discussed were included as members of the buying center.

Propositions Tested Discussed

In finding significantly different group means among the three cluster analysis-derived groups for buying center size and formalization, the research findings support P_1 in part. However, air travel service buying groups did not

differ significantly by their degree of complexity or centralization. Still, in finding partial support for P_1 , $P_2 - P_6$ could then be tested. These five additional propositions suggested relationships between organizational variables and air-travel service buying center group membership. Support was found for only one of the propositions.

Based on the multiple discriminant analysis, the discriminant coefficient for organization size was 0.0187. Therefore at the .05 level, organization size, as measured by absolute value of firm airfare purchases, was found to be significantly related to firm air-travel service buying center group membership. This one variable was capable of discriminating between firm buying center groups 44% better than chance. Therefore, P_2 is supported. Firm buying center group membership appears to be differentiated by the relative size of the firm.

However, the relationship of firm size as measured by the absolute value of firm expenditures on airfare to the structure of the buying center does not appear to be constant. In Cluster 1 (Table 3) firms have the least number of individuals involved in the buying center and the lowest percentage of written versus verbal communication (8.68%). Yet, firms with buying centers in this group have only the second lowest airfare expenditures (Table 11). In Cluster 2

firms have the second smallest buying centers. The amount of written versus verbal communication among buying center members in this group is 47%. Yet, firms in this group have the highest expenditures on airfare (Table 11). In Cluster 3 firm buying centers are the largest and have the highest percentage of written to verbal communication (83%), yet they have the lowest level of expenditures on airfare (Table 11).

Based on the multiple discriminant analysis, the discriminant coefficient for firm technology was 0.5347. Therefore at the .05 level, firm technology, as measured by the extent to which the firm's product(s) is(are) goods versus service(s), was not found in this instance to be significantly related to firm air-travel service buying center group membership. Therefore P_3 is rejected.

Based on the multiple discriminant analysis, the discriminant coefficient for organizational centralization was 0.0885. Therefore at the .05 level, the degree of centralization of firm organizational structure as measured by the degree to which functional management decisions are handled at higher levels within the organization, does not appear in this instance to be significantly related to firm air-travel service buying center group membership. P_4 is therefore rejected.

Based on the multiple discriminant analysis, the lowest discriminant coefficient for organizational formalization was 0.2344. Therefore, at the .05 level, the degree of formalization of the firm organizational structure, as measured by the number of written rules and policies, the existence of rules and policies manuals, job descriptions, and written records of job performance, was also not found to be related to firm air-travel service buying center group membership. Therefore P_5 is also rejected.

Based on the multiple discriminant analysis, the discriminating coefficient for organizational complexity was 0.2487. Therefore at the .05 level, the degree of complexity inherent in firm organizational structure as measured by the degree of task specialization, the number of divisions of the firm, and the number of plants or locations, was also not found to be related to firm air-travel service buying center group membership. Therefore P_6 is also rejected.

As with Johnston's (1981) study, formalization and centralization were not strong predictors of the structure of the buying center. However, in this previous study the researcher found that there was a positive correlation between organizational complexity and the number of managers involved in the buying process for industrial services. In the present study no such effect was found in regard to air-travel service purchases.

Unlike Johnston's (1981) approach, no attempt was made to study purchase novelty, complexity, or importance. An attempt was made to hold the purchase situation constant in the sense that in each case, participation in the purchase of the most recent domestic business-related air-travel service was measured. However, the organizational level of the traveler was allowed to vary. This variable was found to be correlated with centralization of the travel manager as defined by the amount of communicative links during the purchase process (Table 12).

The arguments made above against the appropriateness of the sampling frame and the inability of such a small sample to yield significant results are applicable when discussing the testing of the hypotheses as well as when discussing the creation of groups of firm air-travel service buying centers. For example, one of the constructs of organizational formalization was approaching significance at

the .1 level and may have been found significant had the sample size been larger. Also, while travel executives might be the most expert at answering questions regarding the structure of air-travel service buying centers they might or might not be the most appropriate organizational members to self-type the structural characteristics of the firm as a whole. Further, unlike the questions related to participation in the buying center, no cross validation of the answers to these questions was attempted with other organizational members.

The level of the traveler within the firm is potentially a mediating variable. It appears to be correlated with involvement by the travel manager. In other words, when higher level employees travel, the travel executive seems to be more likely to be directly involved in the travel service purchase than when lower level employees travel.

Summary

The study results indicate that there appears to be limited support for the proposition (P_1) that firm air-travel service buying centers can be grouped based on the buying center structural attributes of size and formalization. The relationship of other variables to buying center group membership, firm

complexity, centrality, and technology, also suggested in P_1 , are not supported by the study results. With regards to $P_2 - P_6$, neither firm technology (P_3) as described by the production of goods versus services, nor the structural attributes centrality (P_4), formalization (P_5), or complexity (P_6) seemed to be good predictors of firm buying center structure. In regard to P_2 , the research does indicate that firm size as measured by the absolute value of expenditures on airfare is a better than chance predictor of the structure of air-travel service buying center size and degree of formalization as measured by the number of people involved in the buying process and the percentage of written versus verbal communication respectively. No support was found for P_3 , P_4 , P_5 , or P_6 .

CHAPTER 6

CONCLUSIONS

Introduction

In this chapter the significant findings of the research relative to the body of knowledge in industrial marketing and within the context of corporate travel will be proposed. Limitations of the findings and their applicability will be noted. Recommendations for future research will be suggested.

Significant Findings

The study offered the first applied test of the theoretical relationships between organizational structure and buying center structure within the context of domestic, business-related, air-travel service purchases by firms. As Johnston (1981, p. 58) states, "...the buying center is a vague construct (fuzzy set) reaching across functional role boundaries whose composition can only be determined through empirical investigation." By profiling the structural characteristics of the buying center, the study contributes fundamentally to the understanding of the communications process within firm air-travel buying centers. Additionally, by

making an attempt to hold the purchase situation constant, the research was able to measure the effect of organizational variables in the absence of some potentially mediating purchase situations variables.

The research offers a finer grained approach to the study of the firm air-travel service buying center than that offered in the studies done by American Express (1991) and Bell (1993) in that it goes beyond the study of the structure of the travel management department to the analysis of communications patterns for a specific buying situation. The results of this study are in concert with these previous studies in that they provide evidence that firms can be grouped based on the structure of their travel purchase process, that is, when these processes are defined by their degree of formalization and the number of people involved in the purchase. The relationship of organization size to buying center size and formalization originally theorized by Webster and Wind (1972) and Sheth (1973) was supported. However, as noted, this relationship does not appear to be a constant positive or negative relationship.

In not finding support for the theorized relationships between organization centralization and complexity and buying center structure (Johnston, 1981; Sheth, 1973; Webster & Wind, 1972), the present study calls future researchers to

abandon the theories regarding these relationships, to study them in the context of multiple buyphases of the buying center, or to utilize different measures of organization complexity and centralization. The results differ from the Johnston (1981) study in that organization complexity was not found to be related to the structure of the buying center. However, the value of this construct may have been moderated across the studies by the organizational level of the respondent. In the present study, as in Johnston's (1981) study, the responses to the questions regarding organizational complexity were self-typed by the travel executive. In the present study the respondents were only travel executives, whereas in Johnston's (1981) study, the respondents were purchasing managers.

The current study also supports the findings of the Bell (1993) study of corporate travel management wherein the researcher found that organizations attempting to increase control over their travel management function seemed to differ in size and corporate decision-making style, especially in regard to organization buying center structure. The results of the current study indicate that the relationship of firm size, as measured by the absolute value of firm expenditures on airfare, to the structure of the buying center does not appear to be constant. The smallest firms (Table 11) seemed to have the least formalized air-travel service purchase process with only 8.68% of the communication being

written (Table 3). The largest firms in terms of air-travel expenditures had only the second highest degree of formalization, with 47% of the travel purchase process being written versus verbal (Table 3). These results would support Bell's (1993) contention that 80% of the large firms are in the first or second stage of formalization of the travel management function.

What is striking is the percentage of written communication 82.5% (Table 3) utilized by firms in the second smallest group of cluster analysis-derived buying centers. In the American Express (1991) and the Runzheimer International (1990) studies, researchers found that top management was attempting to exert more control over the company's travel-related service purchases. These results might suggest that medium-sized companies, like those in Cluster 3, have formalized their travel process to a greater degree already than the larger companies such as those in Cluster 2.

Implications for the Management of the Marketing Function

• If larger firms move toward formalization, a drastic shift would result in how travel is purchased. For example, the qualitative information not reported herein, but acquired as a result of the telephone data collection process, suggests

that firms may be moving towards out-sourcing, at the same time as they are formalizing the reservation process. For example, when asked how his travel department booked air-travel, one study participant gave the following reply, "We don't handle individual travel bookings anymore. Those travel departments that do won't be around next year." This particular department belonged to one of the largest firms (over \$30 million in air-travel purchases). However, the travel communication process in that company at the time the study was conducted was only 50% written. This type of company might be on the verge of greater formalization of their travel management function.

One possible indicator that a firm may be ready to move toward more out-sourcing might be the shift to the utilization of electronic communications media. This technological variable was not measured quantitatively in the current study. Nevertheless, many travel executives, including the one cited above, indicated that electronic mail was the primary medium used by travelers in processing travel requests directly through an agent. This technology offers firms even greater control of the purchase process. The implication is that unapproved agencies or suppliers may simply not be brought on line with this more formalized communications network. However, the largest firms in the sample chosen for this study were still not as formalized as the medium-sized firms. This result

would seem to indicate that there may still be opportunities for suppliers and agencies to move into the buying center communications networks of firms that control a large share of the travel market.

Limitations/De-limitations

The study results have a number of limitations. The first is due to the single purchase situation context. The analysis was conducted in the context of one specific type of purchase situation, the purchase of a domestic, business-related air-travel service, and cannot be transferred to non-travel related purchase contexts. In addition, even in the context of other travel service purchases, other intervening variables may impact results. For example, global companies may have a variety of non-conventional structures which could influence the travel management process. The American Express (1991) study found differing results regarding the degree of formalization of travel management policy, and the degree of employee compliance with that policy for air-travel versus lodging or auto-rental service purchases. Further, as found during the course of discussions with travel executives, air-travel service purchases may be handled by different individuals within the firm who are different than those handling lodging or rental car service purchases.

Second, since the present study utilized the sampling frame of corporations being represented at the 1993 National Business Travel Association conference, the sample seems pre-determined to include companies with at least one person in charge of travel. This evidence suggests that the structure of the travel buying center in these companies has already reached some degree of formalization.

Third, no attempt was made to distinguish between written communication in hard copy form and in electronic form. One of the qualitative pieces of information gleaned from the semi-structured telephone surveys was that many of the firms, both large and small, had recently switched to an electronic mail format for placing travel reservations.

The final limitation is that the study results are limited in applicability to the topic area of industrial marketing. The terms 'organizational buyer behavior' and 'industrial buyer behavior' are sometimes used interchangeably. However, industrial buyer behavior more narrowly refers to the buying patterns exhibited by solely profit-oriented organizations (Sheth, 1973). Non-profit organizations such as universities and governments are also buyers in the travel industry. Travel buying centers in those types of organizations were not part of the sample for this study and therefore the results may or may not apply.

One de-limitation of the study is that the variables that were used as constructs of travel management policy are not intended to be all inclusive. Nevertheless, they were adapted from the extensive qualitative and descriptive research performed from the American Express (1991) and Bell (1993) studies. A second de-limitation related to the constructs in measuring buying center formalization is that no attempt was made to distinguish between electronic and hard-copy written communication.

Another de-limitation of the study is that the only phases of the buying process described by the analysis were the ordering through the payment for the travel service. In the telephone discussions with the travel managers, a great deal of unsolicited information was gleaned about their job descriptions. For example, when asked about travel booking most suggested that the majority of their time was not spent actually booking travel.

Finally, the impact of novelty, complexity, and importance (Johnston, 1981) of the purchase situation was not measured. Even within the only one purchase context, the purchase of domestic, business-related, air-travel services, there may

well be varying degrees of novelty, complexity, and importance associated with the impending trip. The study is de-limited by not evaluating the impact of these variables.

Recommendations for Future Research

Future research is needed in several areas related to this study. First, in a global marketplace firms may be organized along any number of lines. The current study did not attempt to evaluate differences in how firms were internally organized. The travel purchase process might well be impacted by differences in the ways that international and transnational firms are internally organized.

Second, in order to better understand the context within which the purchase is occurring, other phases of the buying process should be studied. According to Moline (1990), corporate travel managers: (1) set business travel policy and budget; (2) negotiate relationships with travel and tourism service suppliers; (3) provide information to members of the organization; and (4) assist in arranging travel. In future studies, researchers might find additional insight by evaluating the corporate supplier search and negotiation phases.

Researchers might also evaluate the effect of buyclass. Intuitively, travel purchases would seem to be straight re-buy situations. However, if it is true that some firms are only now considering travel as a controllable expense, then those firms might well be treating the purchase process, especially during the supplier negotiation phase, as a modified-rebuy or a new task.

Those participating in a specific purchase and those having some influence over how the purchase process evolved may represent two different groups of people. If, as researchers Bell (1993), American Express (1991), and Runzheimer International (1990) suggest, corporate travel service purchases are coming more under the control of the firm than of the traveler, then corporate travel management is becoming more of an industrial buying issue and less of a consumer marketing issue. To the degree that travelers still exert influence over travel service purchase decisions, the purchase process would seem to still be more of a consumer marketing issue. Organizational marketing researchers have sought to develop measures of influence within organizational buying centers (Kohli & Zaltman, 1988). An environment such as travel service buying centers might be an appropriate testing ground for those measures.

The impact of buyphase on participation and influence, as in other industrial marketing research (Jackson, Keith & Burdick, 1984; Lilien & Wong, 1984), should be evaluated on the buying centers for travel-services. According to the studies done by American Express (1991) and Bell (1993), these executives play a more central role in the contract negotiation phase. As mentioned above, a logical next step would be to study influence on the purchase decision. Buyphase could be evaluated as a mediating variable in this relationship.

Since there appears to be some qualitative evidence that these firms are beginning to utilize electronic forms of communication, the impact of this technology should be studied. Though greater use of this medium might be an indication of greater formalization, it may also be related to a change in the technological environment in which organizations are operating (Capon & Glazer, 1987).

Finally, in order to better understand the emerging shift to an industrial marketing paradigm in corporate travel marketing (Bell, 1993; Webster & Wind, 1972), a longitudinal approach is necessary. An attempt must be made over time to study participation and influence in the travel-service buying center at all stages of the buying process and within firms over time. One advantage to the sampling

frame used in this study is that because the database of firms are active participants in the National Business Travel Association and apparently willing participants in travel-related research, they offer further opportunity for query. It is suggested that these firms as well as others that operate transnationally should be utilized as a panel of travel service purchasers. Data collected from this sample as well as that collected from non-profit organizations could then be evaluated so that travel marketing organizations might be forewarned of major paradigm shifts. As a more formalized industrial marketing process evolves, the benchmarks by which firms choose agencies and suppliers for inclusion in their communications systems can be studied.

Summary

The study provides some support for the relationship of organization size, when measured by total volume of travel purchases, to buying center size and formalization. Medium-sized firms seem to have the most formalized and largest buying centers for air travel services. The largest firms were only the second most formalized and had only the second largest air travel service buying centers. Based on these findings, it would seem that agencies and suppliers currently have some opportunity to attack the market share generated by the largest firms. A

longitudinal approach is recommended in studying the potential shifts to a more formalized industrial buying process for air travel. Research investigating participation in the buying center for travel services during the negotiation phase and purchase influence across multiple buyphases is also suggested.

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EXHIBIT 1

Conceptual Models Related to Organizational Buyer Behavior

Author and Date	Topic	Phenomenon	Causal Components	Statistical Procedure or Qualitative Methodology
Robinson, Faris and Wind 1967	industrial buying	buygrid framework	buyclass, buyphase	literature review and synthesis
Webster and Wind 1972	proposal for a model of organizational buyer behavior	organizational decision making process effecting the "buying center," (user, influencer, decider, buyer and gatekeeper)	individual, social, organizational, and environmental	literature review and synthesis
Sheth 1973	proposal of a model of industrial buyer behavior	buy decision	Aspects of industrial buyer behavior (psychological, determinants of joint vs. autonomous - product specific & company specific, and the joint decision making process	literature review and synthesis
Fern and Brown 1984	an alternative to the industrial - consumer behavior dichotomy, whether there is really a basic difference in marketing to consumer vs. industrial markets	proposed that there is more variation within the two dichotomies than between	the less knowledgeable the market, the more frequent the purchase, and the greater the number of buyers - the more frequent and the more direct the firm's communications to the market should be	literature review and synthesis
Vyas and Woodside 1984	a composite model of activities, decisions, and interactions	buyers use a combination of decision rules at various stages of the decision process	common decision rules: 1) seek new sources when number of suppliers is < three; 2) maintain status quo if performance is satisfactory unless no. is < three; 3) toughen standards if no. of suppliers > six; and 4) drop vendors with poor performance records	decision system analysis, participant observation, and document analysis

EXHIBIT 1 (continued)

Author and Date	Topic	Phenomenon	Causal Components	Statistical Procedure or Qualitative Methodology
Kotler 1984	industrial products classification	product essential, capital items, consumption supplies and services, support essential services	degree to which the product or service is used in the firm's end product	literature review and synthesis
Jackson and Cooper 1988	aspects of marketing industrial services	service versus product marketing	new paradigm to include technology and specialization in addition to heterogeneity, inseparability, perishability, and intangibility	literature review and synthesis
Mattson 1988	a model of determinants of the buying center based on variables related to the firm's missions, purchase specific variables, and variables related to organizational structure	buying center membership	buyer mission (production, distribution, service), purchase needs (capital equipment, product essential, support essential, consumption), buyclass, buyphase, dollar value, time commitment & life cycle	literature review and synthesis, field investigation

EXHIBIT 2

Buyclass and Other Purchase Situational Factors

Author and Date	Issues	Dependent	Independent	Methodology
Bellizzi and McVey 1983	the effect of buyclass on buyer influence, moderated by buyphase	relative influence of buying center members (by position)	the degree to which items had been purchased before	Simple correlation, ANOVA
Naumann, Lincoln, and McWilliams 1984	the effect of buyclass and buyphase on influence	influence of eight functional areas (purchasing, production, r&d, plant manager, quality control, marketing, engineering, and the president) as perceived by the purchasing agent	buyclass (purchase situation), and buyphase (need identification, establishment of specifications, evaluation of alternatives, and supplier selection)	MANOVA (for the relationship between all functional areas and the independent variables), and ANOVA (to test the relative influence of each area)
Anderson, Chu, and Weitz 1987	the effect of buyclass category on industrial purchase behavior	buying center size, time taken in decision making, uncertainty, concern for finding good solution, influence of technical personnel, and relative influence of purchasing agent	Newness of the purchase and extent of buyer's need for more information	factor analysis
McQuiston 1989	the effect of purchase situation and product on participation and influence	participation & influence in the decision making unit	novelty, complexity, and importance of the purchase decision	factor analysis, LISERAL goodness-of-fit index

EXHIBIT 3 Buyphase

Author and Date	Issues	Dependent	Independent	Methodology
Bellizzi and Walker 1980	the effect of buyphase on the relative influence of buying center members	relative influence of the purchasing agent	purchase stages - anticipation, determination of general characteristics, specific characteristics and quantity needed, search, gathering of relevant information, analysis, selection, feedback	repeated measures ANOVA. note: only F values are shown in the paper
Choffray and Lilien 1978	participation in the buying center during various stages of the buying process	segment membership	firm size, number of separate plants, percentage requiring the product, satisfaction with the current product, risk	percentages, means, cluster analysis, linear discriminant analysis
Crow, Olshavsky and Summers 1980	buyers' choice strategy for quotation request and for final supplier choice	buyer choice	number of vendors and time pressure	protocol analysis
Lilien and Wong 1984	the effect of decision phase on involvement as moderated by job category, and product type (complexity)	job category involvement	buying decision phase	ANOVA, cluster analysis
Jackson, Keith, and Burdick 1984	how influence structure of the buying center is effected by buyclass, product type, and decision type	relative influence of buying center members in two decision types (buyphases) - what product to buy (specifications, quantity, evaluation) and what supplier to select	product type and buyclass were grouping factors	MANOVA

EXHIBIT 4

Organizational and Purchase Situation Factors

Author and Date	Issues	Dependent	Independent	Statistical Methodology
Bellizzi 1981	effect of organizational size on relative influence of buying center members	relative influence of buying center members (by position)	organization size (dollar volume of construction completed the previous year)	test for significant difference in mean influence score
Johnston and Bonoma 1981	group composition and interaction processes examined for purchases of capital equipment and industrial services	extensivity, lateral involvement, connectedness, and purchasing managers centrality	size, complexity, formalization, centralization, importance, novelty and purchase class	regression
Bellizzi and Belonax 1982	effect of geographic and organizational separation on centralization of buying influence, moderated by buyphase	relative influence of buying center members (by position)	geographic separation, communication separation	test for significant difference in mean influence score
Crow and Lindquist 1985	the effect of buyer characteristics on buying center size and influence, moderated by buyclass	perceived influence, buying center size	firm characteristics (no of employees, purchase volume, function of the firm (manufacturing, service for profit, non-profit, governmental))	ANOVA
McCabe 1987	the relationship between perceived environmental uncertainty and perceived structure of buying decision units	centralization of authority, formalization of rules	product complexity, commercial uncertainty, perceived task uncertainty	factor analysis
American Express 1991	the relationship between corporate culture and centralization of travel management	centralization of travel management	economic outlook, corporate outlook, outlook toward employees, attitude toward controlling cost	cluster analysis, frequencies and means

EXHIBIT 5 Methodological Issues

Author and Date	Problem	Issues	Assumptions	Statistical Procedure or Qualitative Methodology
Choffray and Lilien 1978	to develop operational models of organizational buying which isolate the major variables and relate them to controllable marketing variables	organizations differ in : 1) their need specification dimensions (dimensions used to define their requirements); and 2) buying center composition	1) the composition of the buying center can be categorized by categories of participants involved in the purchase process 2) decision participants within category share the same product evaluation criteria and the same information sources	awareness model, acceptance model, individual evaluation model, and group decision model
Moriarty and Bateson 1982	the impact on measurement of decision making unit structure when single-stage versus exhaustive snowballing is employed	standardization of methodology for surveying the entire membership of buying units	The model of who is involved in the decision making unit dictates the form of questioning and the criteria used for assessing the effectiveness of single stage versus exhaustive snowballing.	descriptive - number, function, and level of the members of the DMU by single stage versus exhaustive snowballing
Silk and Kalwani 1982	estimating the reliability of measures used to identify the degree of participation and influence of buying group members	differences between respondent and self-reported informant data	Participation is operationalized by questions about "who" was involved. Influence was operationalized by answers to questions about "how much say."	means, modes, frequency, and cross- tabs
Kohli and Zaltman 1988	development of a measure of influence in buying centers	reliability and validity of existing measures	1) influence is defined as actually effecting the purchase decision 2) the context in which the scale is used as the final evaluation and selection phase	Cronbach's alpha (reliability), dimensionality (factor analysis), discriminant validity (Pearson correlation), nomological validity (correlation)

CORNELL
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Business Travel Policy Study

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Instructions: Answer the following questions disregarding the occasional exceptions that occur in every large organization. Please feel free to call the number above for clarification. The information obtained from this survey will be kept strictly confidential and the results of the study will be reported in aggregate only.

1. Please mark each of the following levels of your corporation about which you feel qualified to answer questions regarding business travel policy.

- | | |
|--|--|
| <input type="checkbox"/> 1. Local operations | <input type="checkbox"/> 2. Regional or Divisional level |
| <input type="checkbox"/> 3. North American level | <input type="checkbox"/> 4. World-wide |

Please answer all the following questions in the context of the highest level indicated above.

2. Select one statement which best describes your corporation's business travel policy structure.

- 1 Our travel policy consists of one universal document which is the sole governing statement of the corporation's business travel policy.
- 2 A general statement of policy forms the common core of all travel policy documents and is expanded for use in different parts of the corporation with subordinated policy statements specific to special needs or situations.
- 3 Although travel policies in our corporation may include similar parts, they are independent and not subordinated to a universal or coordinated travel policy.

3. Select one statement which best describes your corporate travel management organization.

- 1 Our business travel is supervised by a single, central travel department with authority over any others that exist in the corporation.
- 2 Our business travel is supervised by relatively autonomous travel departments.
- 3 Our business travel is not under the supervision of a travel department.

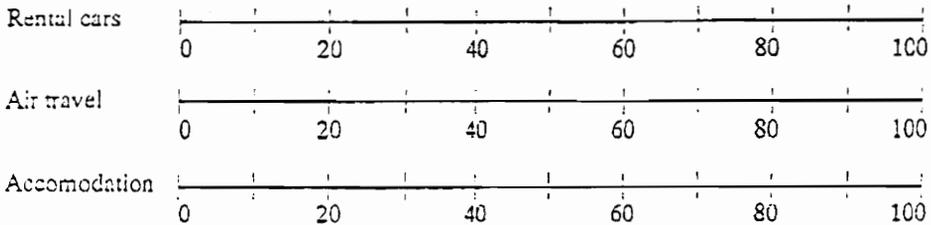
4. Please indicate True or False for the following statements about your corporate travel policies.

- True False : There is a policy for travel using personal cars.
- True False : There is a policy for travel using company cars.
- True False : There is a policy for travel using rented cars.
- True False : There is a policy for travel using rented cars that specifies the size of car (full size, mid-size, compact, sub-compact, etc.).

- | | | | |
|-------------------------------|--------------------------------|----|--|
| <input type="checkbox"/> True | <input type="checkbox"/> False | 5 | Our travel policy names preferred or exclusive car rental companies for use by business travellers. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 6 | There is no policy or consistent practice other than getting approval for travel using rented cars. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 7 | There is an air travel policy that specifies the class of service (first class, business class, etc.) that is to be used. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 8 | There is an air travel policy that requires the use of lowest available fares. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 9 | There is an air travel policy that provides for special situations such as Saturday Night Stay-overs or the use of more expensive flights. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 10 | Our travel policy names preferred or exclusive airline companies for use by business travellers. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 11 | There is no policy or consistent practice other than getting approval for air travel. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 12 | There is a hotel room policy that specifies the class of hotel room (luxury, business floors, economy, per diem, etc.). |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 13 | There is a hotel room policy that specifies a per diem rate for hotels. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 14 | Our travel policy names preferred or exclusive hotel companies for use by business travellers. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 15 | Our hotel travel policy provides for special situations such as Saturday Night Stay-overs or the use of more expensive rooms. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 16 | There is no policy or consistent practice other than getting approval for hotel accommodation. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 17 | My company has a corporate business travel department which sets travel policy. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 18 | My company has a corporate business travel department which negotiates for travel services from suppliers. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 19 | In my company business travel bookings and arrangements are usually made by the traveller's secretary or departmental secretary. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 20 | In my company business travel bookings and arrangements are usually made by a business travel department. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 21 | In my company business travel booking and arrangements are usually made by the travellers themselves. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 22 | In my company business travel bookings are not made in any particular way. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 23 | The corporate travel manager(s) are responsible to monitor compliance with travel policies. |
| <input type="checkbox"/> True | <input type="checkbox"/> False | 24 | No one is directly designated to ensure compliance with corporate travel policy. |

- True False 25 Compliance with travel policies is part of the internal audit.
- True False 26 Approvals in advance of any travel arrangement are used to ensure compliance.
- True False 27 Employee travel expenses claims which do not conform to policy or have not been approved are not reimbursed.

5. Please estimate the percentage of each of the following kinds of travel arrangement that complies with your corporation's travel policies by placing a mark on each of the lines below.



6. Please indicate the lowest level in your firm with the authority to make the following decisions using the scale below:

- (7) if the level is above president or CEO (i.e. Board of Directors)
- (6) if at the level of CEO or President
- (5) if at the level of a functional manager (i.e. V.P. Marketing, V.P. Finance, etc.)
- (4) if at the level of a district or regional manager (i.e. responsible for several locations)
- (3) if at the level of a plant or site manager (i.e. General Manager)
- (2) if at the level of a subunit manager (i.e. Assistant Manager, Department Manager)
- (1) if below the level of a subunit manager (i.e. Assistant Manager, Department Manager)

- | | |
|--------------------------------------|---|
| _____ marketing expenditures | _____ amount of overtime to be worked at one site |
| _____ hiring and firing of employees | _____ the number of production workers required |
| _____ expansion into new markets | _____ new advertising and promotion |
| _____ allocation of human resources | _____ manage travel expenses |

7. Please indicate below which of the following activities at the corporate level are the responsibility of at least one full-time individual:

- | | |
|-------------------------------------|--|
| _____ Administrative procedures | _____ Financial Resource Management |
| _____ Inventory Control | _____ Legal and Insurance requirements |
| _____ Operations | _____ Public Relations |
| _____ Personnel Hiring and Training | _____ Purchasing Control |
| _____ Quality Control | _____ Research and Development |
| _____ Travel Management | |

8. Please provide the following information about yourself and your company. All data will be kept strictly confidential.

Corporation Name: _____ Company or Division: _____

Your Name: _____ Title: _____

Address: _____ Telephone: () _____ extension _____

EXHIBIT 7

The Travel Manager Telephone Survey Instrument

After the researcher exchanges greetings and insures that the interviewee is the travel manager who has previously completed the Business Travel Policy Study, the data collection will evolve as follows... "I am working with the research team from Cornell on the travel research that they are conducting. You had indicated on a mail survey that you might be willing to participate in further research. We have four short questions that we would like to ask you. Is this a convenient time for you. We are trying to profile firms by their organizational structure and their travel decision making process. Because of the potential subjectivity of the questions we are doing this part of the research by telephone. As before, the information obtained in this research regarding individual firms will be kept strictly confidential and will only be reported in the aggregate."

Question 1

First, how many people work in your travel management department?

Please think of the last domestic, business-related, air-travel purchase in which you or your department was involved...

Question 2

Within your company, what was the level of the employee for which the domestic air travel was purchased?

- corporate management
- divisional (mid/regional level management)
- plant
- departmental management
- professional/technical
- staff
- other

EXHIBIT 7 (continued)

Question 3

- a. Who else, other than yourself, was involved in this domestic air-travel purchase?
 - 1. Who decided to travel?
 - 2. What was the procedure for making this air-travel purchase?
 - 3. Who authorized the travel?
 - 4. Who determined the budget?
 - 5. Who chose the carrier?
 - 6. Who made the reservation?
 - 7. Then what happened...?
 - 8. What department paid the service invoice?
- b. Of these people with whom did you have direct communication?
- c. What percentage of this communication was written?

<u>Name</u>	<u>Position</u>	<u>Direct Communication (Y/N)</u>
_____	_____	% Written _____
_____	_____	% Written _____

"Finally, a question about your company's overall organizational structure..."

Question 4

Based on a 1 to five scale, with 1 being very inaccurate and 5 being very accurate and 3 being uncertain,

How accurately does the statement describe your organization?

1	2	3	4	5	
Very Inaccurate	Inaccurate	Uncertain	Accurate	Accurate	Very

- ___ The organization has a very large number of written rules and policies.
- ___ A 'rules and/or procedures' manual exists and is readily available within this organization.
- ___ There is a complete written job description for most jobs in this organization.
- ___ The organization keeps a written record of nearly everyone's job performance.

"It appears that _____ was(were) quite deeply involved in this purchase. Would it be possible for me to talk briefly with them? I have a few questions I would like to ask each of them. What are the telephone numbers..., destination/date, and name of the person who traveled?"

EXHIBIT 8

Other Buying Center Members Instrument

"I am working on a business travel study with researchers at Cornell University. _____, whom I have already interviewed, said you might be able to help us answer a couple of questions. In order to keep our information uniform across firms we have chosen to ask people about the "last purchase" of a domestic business-related air-travel service. Since _____ suggested that your trip to _____ was the last purchase by your firm that he was aware of we wanted to ask you a few short questions about it. This should take less than five minutes. Is this a convenient time for you?"

Question 1

- a. Do you remember being involved in this purchase?
- b. What is your position in the company?
- c. Who else was involved in the planning of this trip? (get name and department) _____ Anyone outside of your company; i.e., travel agent? _____

Question 2

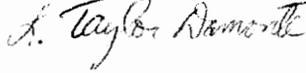
- a. Of these people with whom did you have direct communication?
- b. What percentage of this communication was written?

<u>Name</u>	<u>Position</u>	<u>Direct Communication</u> (Y/N)
_____	_____	% Written _____
_____	_____	% Written _____
_____	_____	% Written _____

VITAE

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Education

- 1994 Ph.D. Hotel, Restaurant, and Institutional Management, Virginia Polytechnic Institute and State University.
- 1987 M.S. Institutional Administration, University of Southern Mississippi (USM).
- 1977 B.S. Hotel, Restaurant, and Tourism Administration, University of New Orleans.

Professional and Teaching Experience

- 1991 - Director, Institute for Tourism Research, HRTA Faculty, University of South Carolina (USC).
- 1988-1991 Instructor, HRIM Faculty, VPI&SU.
- 1985-1988 Instructor, IAD Faculty/Staff (Managed the "Southern Inn" through a university departmental management contract), USM.
- 1982-1985 Manager, Best Western Gulfport Inn, Gulfport, Mississippi.
- 1981-1982 Owner/Operator, Oh Boys Po Boys, Biloxi, Mississippi.
- 1979-1981 Manager, The Landing Harbor Square Restaurant, Gulfport, Mississippi.
- 1977-1979 Asst. Food and Beverage Director, Fountainbay Club Hotel, New Orleans, Louisiana.

Grants and Contracts

United States Information Agency Faculty Exchange grant to conduct an exchange of research and teaching faculty with the School of Economics, Matej Bel University in Slovakia.

United States Information Agency Samantha Smith Student Exchange grant to conduct a study exchange with the Department of Hospitality and Tourism, Matej Bel University, Slovakia.

South Carolina Department of Parks, Recreation and Tourism grant to investigate opportunities for culture- and nature-based tourism-related entrepreneurship on St. Helena Island, SC.

Five Points Merchants Association grant detailed the Economic Impact of the St. Patrick's Day Festival in "Five Points," South Carolina.