

Erin Anderson, Wujin Chu, & Barton Weitz

Industrial Purchasing: An Empirical Exploration of the Buyclass Framework

The Robinson, Faris, and Wind buyclass framework has been called one of the most useful concepts in organizational buyer behavior, yet the entire model has received little empirical attention. Part of the explanation is the difficulty of obtaining valid data from members of the buying center. The authors study the buyclass framework using a novel approach: querying the managers of salesforces about the behavior their salespeople encounter on the part of their industrial customers. In phase 1, model development, the authors study the model's applicability in a relatively homogeneous, controlled setting (one industry, few firms). In phase 2, model replication, they extend and validate the phase 1 findings using multiple firms and industries. Much of what salespeople observe is found to correspond closely to the buyclass theory of organizational buyer behavior. Also, the "problem newness" and "information needs" dimensions are found to be strongly related, as expected. However, "seriousness of consideration of alternatives" seems to be a separate dimension that does not operate entirely as predicted by the buyclass framework.

MUCH of the buying and selling in advanced economies is between organizations, that is, industrial rather than consumer market exchange. Hence, it is important to understand organizational buying behavior. In comparison with research in consumer behavior, however, the study of organizational buying behavior is still at the conceptualization stage. In relative terms, the study of organizational buying behavior is lacking in empirical tests of its theories and of their managerial implications (Moriarty 1980). A likely explanation is the extreme difficulty of gathering a sample of data that has enough observations to justify statistical analysis and that represents a broad

range of industrial purchases (rather than multiple observations from a few cooperating firms).

We empirically explore Robinson, Faris, and Wind's (1967) theory of buyclasses, which has been called "one of the most useful analytical tools for both academics and practitioners interested in organizational buying behavior" (Moriarty 1980, p. 23). This theory, developed by observing transactions in two large firms, has been tested empirically principally by construction of flowcharts based on interviews of a small number of purchasing agents. The model's specific implications for some of the buyclass categories have been examined in individual studies. However, the model as a whole has not been tested empirically on a large scale by statistical methods.

Our interest is in determining whether a large number of industrial purchases fit the descriptions provided by the buyclass framework. To do so, we construct a measure of the extent to which salespeople face what is hypothesized to be a continuum of industrial purchase situations ranging from straight rebuy, to modified rebuy, to new task. Our study emphasizes the extremes of new task and straight rebuy.

Erin Anderson is Assistant Professor and Wujin Chu is a doctoral candidate, The Wharton School, The University of Pennsylvania. Barton Weitz holds the J.C. Penney Eminent Scholar Chair, University of Florida. The authors gratefully acknowledge the comments of Hubert Gatignon, Charles Goodman, and Richard Oliver, the endorsement of the Electronic Industries Association, and the financial assistance of the Marketing Science Institute. The helpful comments of three anonymous *JM* reviewers are greatly appreciated.

We attempt to validate the Robinson, Faris, and Wind (RFW) framework of how buyers behave in these prototypical purchase situations. Our data are from two field studies of buyer behavior. Our results, though exploratory, support the buyclass framework as well as an extension pertaining to the buyer's consideration of alternatives.

Literature Review

The Buyclass Theory of Industrial Purchases

Sheth (1977) points out that a large number of conceptual articles have been written about industrial buying behavior, contrary to a common impression that the subject has attracted little attention. This popular impression is due to the fact that the work is very fragmented. Further, much that has been suggested is difficult to operationalize. Finally, much of the industrial buying literature concentrates on broad descriptions of processes. This work makes a valuable contribution to our understanding of purchase processes, but does not suggest testable hypotheses (Moriarty 1980; Sheth 1977).

An exception is the buyclass theory of purchasing (Robinson, Faris, and Wind 1967). The popularity of the RFW framework is due to the detailed, testable propositions it advances, as well as its simplicity and intuitive appeal. The RFW taxonomy came from a large-scale project involving detailed personal observation of transactions and extensive interviews of buying center participants. Observation took place in two companies (because of the usual difficulty of obtaining cooperation) and lasted two years (because of the usual difficulty of obtaining good descriptions of complex industrial purchase processes). The RFW taxonomy is built on three dimensions.

1. How much information the prospect must gather to make a good decision (information needs).
2. The seriousness with which the prospect considers all possible alternatives (consideration of alternatives).
3. How unfamiliar the purchase situation is to the prospect (newness of the task).

If three levels of each dimension are considered (high, medium, and low), $3 \times 3 \times 3$ combinations or 27 situations are possible. However, RFW found that in practice the three dimensions are highly correlated. Thus only three combinations (rather than 27) occur to a significant extent (see Figure 1).¹ Further, RFW

¹In continuous terms, the three dimensions (newness, information needs, and consideration of alternatives) collapse into one dimension. The three categories RFW discussed are low values (straight rebuy), midrange values (modified rebuy), and high values (new task).

FIGURE 1
Buying Decision Grid

TYPE OF BUYING SITUATION	NEWNESS OF THE PROBLEM	INFORMATION REQUIREMENTS	CONSIDERATION OF NEW ALTERNATIVES
NEW TASK	HIGH	MAXIMUM	IMPORTANT
MODIFIED REBUY	MEDIUM	MODERATE	LIMITED
STRAIGHT REBUY	LOW	MINIMAL	NONE

From Robinson, Faris, and Wind (1967), Table 4, Page 25

found stable patterns of purchase behavior in each situation. A brief description of each buying situation, as seen by RFW, follows.

The new task (high on all three dimensions) is relatively rare. However, the sale can be very important in dollar terms and can set the pattern for later, more routine purchases. The buying center tends to be large, with the purchasing agent having a minor role and engineering, because of its expertise in evaluating alternatives, having a major role. Solution of the problem, which is often ill defined, is of paramount concern; economic considerations are secondary. New tasks are perceived as high risk situations. Hence, buyers are willing to consider many alternatives because they perceive search benefits to be high in relation to search costs. Suppliers must convince buyers their product will work rather than counting on a price advantage to win the sale.

The straight rebuy (low on all three dimensions) is the most common purchase situation. The purchase is routine and the purchasing department (also the prime influence) tries to keep it that way. Assurance of delivery and adequate performance are the critical attributes, though price often has an important role. The "in" (current) supplier is not expected to propose upgrading or new solutions, but is expected to avoid errors (e.g., noticeable declines in quality). "Out" suppliers are at a considerable disadvantage because the buyer perceives the cost of considering new alternatives to outweigh the expected benefit. Hence, out suppliers have difficulty gaining consideration unless the in supplier commits a major error or the purchasing requirements change dramatically. Then the situation becomes a modified rebuy.

The modified rebuy (midrange on all three dimensions) has a mix of new task and straight rebuy features. It is either an "upgraded" straight rebuy or a

formerly new task that has become familiar. The buying center is somewhat larger (and the purchasing agent somewhat less influential) than in the straight rebuy. Once supply is assured (again, the critical attribute), suppliers often can win the contract by providing extra services (e.g., short lead times, superior packaging). Timing is critical, however, for the buyer soon will settle on a preferred supplier and revert to straight rebuy behavior, closing the window of opportunity for outside suppliers.

Strikingly, there is no mention of product type in the buyclass model. RFW began with divisions by product and concluded they were unnecessary. Lilien and Wong (1984) concur. Their study of self-reported involvement by buying center members shows that seemingly product-related differences in involvement are in fact a function of buyclass stage. The generality of the RFW framework across product classes probably has contributed to its popularity in the marketing literature (Johnston 1981).

Critiques of the Buyclass Theory

Criticisms of the RFW theory center on the model's simplicity, though simplicity is also the primary reason for its popularity (Moriarty 1980). Many other organizational buyer behavior discussions claim a need to develop a theory for each of various product classes (e.g., capital equipment; Choffray and Lilien 1978) rather than a comprehensive model. A more general critique of the buyclass model is that it makes no allowance for the importance of the purchase or for the complexity of the evaluation task. The first-time purchase of a minor supply such as light bulbs (a new task) would involve a more elaborate decision-making process than the replacement of the firm's automobile fleet (a modified rebuy) under the buyclass framework (Johnston 1981). In other words, the model overstates the role of newness as a summary descriptor of purchase tasks.

Some controversy has arisen as to when the prospect will consider new alternatives seriously. The RFW model focuses on certain task characteristics (to the exclusion of other personal and organizational characteristics) and predicts that more alternatives will be considered more carefully along the continuum from straight rebuy to new task. Other research indicates that marked variation in the seriousness of consideration of alternatives will occur within points on the continuum.

RFW note that new task situations are perceived as much more risky than straight rebuys. RFW expect purchasers to reduce that risk by pursuing a rational strategy of actively evaluating many alternatives. However, some research suggests that industrial purchasers can reduce *perceived* risk by pursuing precisely the opposite strategy of seriously considering

only known, preferred suppliers. These suppliers may be reputable market leaders (the "IBM effect," according to Peters and Waterman 1982) or the consideration set may be weighted heavily toward suppliers who have dealt with the purchaser previously for other products.

McMillan (1972) surveyed several members of each buying center and found a common perception that current suppliers (a known quantity) are less risky than prospective suppliers (an unknown quantity). This finding suggests that risk perceptions can be reduced, *even in new tasks*, by giving the edge to current suppliers. Cardozo and Cagley (1971), in an experimental simulation, found more search for information as risk increased (presumably paralleling the progression from straight rebuy to new task). However, contrary to the RFW model's prediction, Cardozo and Cagley found greater reliance on known and "in" suppliers in high risk than low risk situations. Puto, Patton, and King (1985), also in a simulation, found strong source loyalty in modified rebuys, particularly when purchase risk was high. These findings suggest that avoiding (rather than considering) alternatives is a risk-reduction strategy practiced by some buyers in new task situations.

Possibly consideration of alternatives is affected not only by buyclass category (which is based on task characteristics) but also by personal and organizational factors (Webster and Wind 1972; Wilson 1971). Peters and Venkatesan (1973) examined a risky new task, adoption of a computer, and found demographic and personality features of the decision makers, as well as aspects of the purchasing organization, systematically related to purchase decisions. In particular, closed-minded, less educated decision makers with less computer experience and less confidence in their ability to evaluate computers were less likely to purchase. This finding suggests that some individuals in the decision-making unit will not actively consider new alternatives even in new task situations. Sweeney, Mathews, and Wilson (1973) examined personality traits of purchasing agents. They found that individuals with a low tolerance for ambiguity and a desire to simplify complex situations (avoid facing their inherent complexity) systematically avoided active consideration of many aspects of alternative suppliers. Bubb and van Rest (1973) point out that considering alternatives places a heavy burden on purchasers, a burden they may avoid for at least some new tasks.

The studies cited establish the possibility that, contrary to the buyclass model, some new task situations do not involve extensive consideration of alternatives. Another question is whether alternatives are seriously considered in straight rebuys. The answer, accordingly to RFW, is usually no. Unless a supplier commits a major error or a prospective sup-

plier can induce discontent (an unlikely event), the "in" supplier has a great advantage. Reported research tends to support this contention (Ferguson 1979; Saleh et al. 1971; Sheth 1977; Wind 1970). Nonetheless, other evidence suggests some firms force suppliers to "prove themselves" or "re-win the bid" for every purchase (Arndt 1979; Bubb and van Rest 1973; Ross 1985).

Related Studies of Industrial Purchases

The buyclass theory, developed by observing transactions in two large firms, has been tested empirically on a small scale via interviews (Doyle, Woodside, and Michell 1979; Matthyssens and Faes 1985). These studies provide in-depth descriptions of small numbers of purchases based on information obtained in interviews of personnel involved in the purchases. The descriptions are summarized in table or flowchart form rather than in the form of a model subject to statistical tests.

These descriptive studies provide mixed support for the buyclass model, though the sample sizes make their findings merely suggestive. Matthyssens and Faes (1985) summarize eight first-time purchases of components in an unspecified number of firms. Their descriptions fit closely the buyclass expectations of new task behavior. In particular, new alternatives were actively sought and evaluated, though prior experience with a supplier was a significant asset. Doyle, Woodside, and Michell (1979) interviewed 14 managers representing firms predominantly engaged in straight rebuys (7), modified rebuys (2), or new tasks (5). They found some support for the RFW description of buyer behavior in each buyclass.

In a novel approach involving a larger sample, Leigh and Rethans (1984) solicited salespeople's cognitive scripts, which are learned stereotypic action sequences for categories of events. In phase one, elicitation, 36 purchasing agents were asked to describe what happens in a modified rebuy. Their descriptions, which match the RFW predictions well, were used to develop statements. In phase two, 109 purchasing agents reacted to these statements, indicating how typical they are. The elements of the RFW modified rebuy script were rated highly typical in these purchasers' experience.

Some research has focused on specific predictions of the buyclass model, particularly the relative influence of members of the buying center. Pingry (1974) found, as expected, that purchasing agents dominate straight rebuy decisions whereas engineers dominate new tasks. Bellizzi and McVey (1983) surveyed 140 contractors, operationalizing buyclass as purchase frequency (high is straight rebuy, low is new task). They found the RFW model did not predict the relative influence of various buying center members. Jackson,

Keith, and Burdick (1984), using purchasing agents in a role-playing exercise, found perceived influence varies across product classes but not across buyclasses. Brand (1972) found that management and technical people had more influence than purchasing agents in a broad range of new tasks and modified rebuys (consistent with RFW); contrary to the model, Brand found the same pattern in many straight rebuys as well. In sum, the RFW predictions about relative influence have not received strong support.

An important issue in the literature on relative influence in the buying center is whom to believe in assessing influence. Johnston (1981) reviews several studies demonstrating that perceptions of influence vary greatly across members of the buying center, producing a conflicting composite. Interestingly, these studies have been limited to within the buying center, rather than employing reports of influence by outside observers of the purchase process (e.g., salespeople). Though salespeople are not perfect observers or reporters, they may have the widest and most balanced perspective on purchases because of their need to develop an understanding of the customer's decision processes (Weitz 1978).

Research Strategies in Organizational Buyer Behavior

A very high ratio of conceptualization to empirical testing typifies the organizational buyer behavior literature (Sheth 1977). Further, much of the empirical work that has been done is coupled only loosely with available conceptualizations (Johnston 1981). One explanation is the abstractness of most available models, which makes them difficult to operationalize (Anderson and Chambers 1985; Moriarty 1980), yet even the relatively specific RFW model has received little empirical attention.

We suggest the primary explanation for the lack of empirical work is the data requirements. Surveying one member of the decision-making unit (DMU) is widely considered to give a very incomplete picture (Johnston 1981; Wind 1978). However, collecting data from the entire DMU is so difficult and demanding of resources as to be impractical; indeed, the one published article to survey the entire DMU (Moriarty and Spekman 1984) required another article simply to describe how it was done (Moriarty and Bateson 1982). Further, once surveyed, the DMU apparently does not agree anyway (Silk and Kalwani 1982).

In an effort to resolve these disagreements, many researchers have resorted to the intensive interview method wherein DMU members are probed about inconsistencies, which are cross-checked by interviewing other DMU members and even checking available records. Sometimes the interviews are supplemented by firsthand observation. Aside from the considerable

difficulty of obtaining cooperation, the resource demands force the researchers to report small numbers of observations (purchases). The research "strategy" is to trade the insights provided by detail (often "minute" detail according to Johnston 1981) for the insights provided by generality and statistical testing.

Even this approach has been criticized for lack of completeness because of its emphasis on the buyer. According to the "dyadic" or systems viewpoint (Bonoma, Bagozzi, and Zaltman 1978), no study is appropriate unless it incorporates at least one individual representing the other party to a transaction, in this case the seller(s).² Zaltman and Bonoma (1977) acknowledge the difficulty of studying dyads and call for new methodologies to facilitate the study of exchange systems (rather than individuals) as the unit of analysis. Neither the methodologies nor the data (hence the empirical research) have appeared.

We take a novel approach to the study of organizational buying behavior. Our "research strategy" was to collect information on a very large number of transactions across a very broad range of circumstances in a manner amenable to statistical analysis. To do so, we did not query the member(s) of the buying center or the member(s) of the selling center (or the dyad/system). We questioned sales managers.

The salesforce must diagnose its customers (learn their decision-making processes); otherwise salespeople could be effectively replaced by advertisements to present information and clerks or computer terminals to take orders (as in simple selling situations where learning each customer's decision process is unnecessary). Hence, salespeople are constantly observing customer behavior. Because our main interest is in observed behavior, we collected data about salespeople's observations of customer behavior.

For purposes of model development, we initially reduced the impact of unmeasured sources of variation by concentrating on one industry. In phase 2, model replication, we shifted to a multi-industry approach to learn whether the findings of phase 1 can be replicated under a variety of circumstances.

Phase 1. Model Development

For phase 1, the electronic components industry was selected because of its large size, importance in the U.S. economy, and variety (Electronic Industries Association 1981). The industry has many sectors, which differ in competitive composition and sell products ranging from mature commodities to high technology

²Imagine the impact on consumer behavior research should the paradigm shift to a dyadic viewpoint. The study of a consumer would become unacceptable without the simultaneous study of the seller(s).

customized products. In spite of its variety, the industry has a common vocabulary and a powerful trade association, which facilitated data collection.

Model Development Method

Our objective was to ascertain whether the buyclass categories (new task, modified rebuy, and straight rebuy) describe industrial purchase behavior well. To do so, we asked whether the situations a salesforce confronts fit the buyclass categories. Further, we asked whether salesforces find that customers behave as expected in each of the three categories. Hence, our data were collected at the level of a salesforce.

Respondent selection. To test the generality of the RFW framework, we needed large numbers of observations on a broad range of purchase situations. In an organization there is one individual, the district sales manager, whose job it is to know what a salesforce is facing and what it is doing. Hence, querying sales managers about the experiences of their district salesforces is a feasible way to cover a broad range of purchase situations. Alternatively, one could capture this range of experience by querying all the salespeople in a district individually. This micro-level approach would eliminate the need to ask sales managers to summarize and report their observations. However, it demands a much higher level of commitment from the company. Our preliminary investigations uncovered a distinct reluctance on the part of national sales managers to permit surveying all salespeople (a large request and one that reduces available selling time), but a greater willingness to permit surveying all sales managers (a smaller request and one that does not reduce selling time.)³

The value of the sales managers' reports depends on how well they know their districts. In the final sample (discussed shortly), the managers (former salespeople themselves) spent 40% of their time (median) in the field and had served in their district six years (average). Thus, their knowledgeability made them good "key informants."⁴

Questionnaire development. A questionnaire to be administered to the district sales managers was developed by a procedure recommended by Churchill (1979). First, the academic and trade literatures were used to develop a large pool of easy-to-answer items.

³The district sales manager, in responding, is aggregating over his/her salespeople. Prais and Aitchison (1954) show that such aggregation does not bias our estimators but does render those estimators inefficient. Hence, aggregating from salespeople to sales managers increases the likelihood that our results will not be statistically significant.

⁴Campbell (1955) demonstrates that knowledgeable people, when answering well-designed questionnaires within their area of expertise, provide high quality data.

Next, the proposed questionnaire was pretested sequentially with one sales manager at a time for clarity, interpretation, and ease of answering. After each pretest, the questionnaire was revised and another manager selected for another pretest. Pretesting continued until no more objections were raised and the managers found the questionnaire easy to answer, phrased in their vocabulary, and clear. The process lasted several months and involved a dozen managers.

Data collection. Next, a set of component manufacturers was selected by consulting an annual survey of purchasing agents, who listed the three companies they would consider in selecting a vendor for given components. For a broad range of components, the top vendors overall were listed.⁵ Only top vendors were selected to avoid fly-by-night manufacturers and to ensure that the salesforces contacted had enough acceptance to cover a wide range of customers (hence buyclasses). For convenience, only West Coast firms were considered.

A random sample of 21 of these firms were contacted. Because of the endorsement of the Electronic Industries Association (EIA), the vice presidents of sales agreed to a personal visit, wherein the researchers asked for the cooperation of district sales managers in return for a customized report on some aspects of the study. Overall, the study was positioned as an examination of the usage of direct (employee) and manufacturer's representative salesforces, a subject of interest in the industry and the focus of the report. Sixteen firms agreed and 11 have participated to date. To offset the West Coast bias, nine non-western firms suggested by EIA were contacted by telephone and letter and five participated.

Of 30 manufacturers approached, 16 participated. To assess the degree of response bias, the 16 participants and the 14 nonparticipants were compared on three important descriptors of electronic component firms: size, product line sophistication, and the degree of usage of rep and direct salesforces. The firms had little in common on these grounds; the profile of each nonparticipant was roughly matched by that of at least one participant. This balance may be due to EIA's endorsement, which carries considerable weight in the industry.

The national sales office of each participating firm sent the questionnaire to each of its district sales managers with a cover letter instructing the respondent to return the form directly to the researchers in a pre-addressed envelope. Each questionnaire was marked prominently with a code. To preserve confidentiality, the national sales office assigned the codes and did

⁵Operationally, top vendors are those mentioned by at least 10% of purchasing agents; a sharp dropoff occurs after the 10% level.

not reveal them to the researchers, who reported all nonreturned codes to the head office. That office, in turn, followed up by letter. The response rate was virtually 100% per company. Complete questionnaires were returned by 169 sales managers.

Each questionnaire contained an instruction sheet telling the district sales manager that his/her responses would be viewed only by the researchers and would be kept confidential. Further, the report to management on rep/direct salesforce usage would focus on the aggregate results across districts and companies and would give only broad descriptive information from the sales manager about the district itself.

Developing a Measure of Buyclasses

A pool of items (listed in Tables 1 and 2) was generated to assess the frequency with which salespeople encounter a purchase situation that is relatively new to the customer (4 items), in which the customer needs to gather more information (5 items), and in which the customer is willing to consider many alternatives (5 items). All questions were answered in the format indicated by the following instructions.

The following statements describe circumstances which might exist when one of your salespeople is trying to make a sale. Please indicate *how frequently* the salesperson would face the situation described in the statement. This can be indicated by circling the number that most accurately indicates the percentage of sales situations that fit the statement. Each question is independent: your answers do not need to add to 100% or any other number.

EXAMPLE: It is hard to get an appointment to see the account.

Percentage of Situations

0% 10% **30%** 50% 70% 90% 100%

This manager indicates that in 30% of selling situations, the salesperson has difficulty getting an appointment. Notice that "account" means customer or prospect. Those 30% of selling situations that are difficult could be cold calls, followups with a regular customer, or some combination of prospects and customers.

If the situations a salesforce encounters fit the buyclass framework, we would expect these three dimensions (and their underlying measures, the items) to be collinear rather than independent. In other words, salesforces that frequently sell to customers whose buying task is new should also frequently sell to customers who need more information and consider more alternatives (new task). In contrast, salesforces working largely with routine tasks should also work largely with customers who need less information and consider fewer alternatives (straight and modified rebuy). Doyle, Woodside, and Michell (1979) note that for practical purposes the distinction between straight and modified rebuy is difficult to make nonarbitrarily. We

concentrate on the new task versus routine aspect of the buyclass framework, as most of the predictions generated by the framework are based on this distinction.

A factor analysis was performed to test the hypothesized unidimensionality of the newness, information, and alternatives items (Table 1). Contrary to the prediction of the buyclass model, two factors rather than one predominate. These two factors account for 41% of the variance in the 15 items. A scree test indicates a satisfactory pattern: the percentage of variance accounted for by each factor is high for the first (23%) and second (18%) and drops sharply thereafter (Stewart 1981). This finding suggests that one factor is an inadequate representation of the information in the items but that two factors perform well.⁶

Factor 1 captures two elements of the buyclass framework: the degree of newness of the purchasing problem and the need to gather and consider information in making the decision. Items representing the third buyclass element (how seriously the buyer considers new alternatives) do not load highly on factor 1. Instead, they load on factor 2.⁷

Given the apparent multidimensionality of the three buyclass characteristics, two measures (shown in Appendices A and B) were developed according to the

⁶Examination of the smaller factors indicates they are either uninterpretable or reflect nuances of wording.

⁷Rotation did not increase the interpretability of the factors in this case.

procedure recommended by Nunnally (1978). In particular, reliability was assessed formally. This step seldom is performed in empirical research on organizational behavior (Johnston and Spekman 1982).

Measure of newness and information needs. Appendix A is a measure that reflects most of the spirit of the RFW taxonomy by incorporating two of the three dimensions of classification. The measure is scaled such that higher values represent greater frequency of encountering new tasks and lower values represent greater frequency of encountering more routine purchases. Coefficient alpha is .73, an adequate level of reliability for basic research (Nunnally 1978).

Four of the nine questions in the measure pertain to the newness of the purchasing task. According to RFW (1967, p. 25), "this characteristic alone is sufficient to differentiate among the three types of buying situations." The other five questions reflect the need to gather information. RFW, in their discussion of the buyer's need for information, frequently do not distinguish between the need for information as perceived by an observer and the need as perceived by the purchaser. Consistent with their treatment, the information needs items include three statements from the buyer's perspective and one ("the purchase decision demands a lot of information") from the observer's perspective. These items all contribute to coefficient alpha, consistent with RFW's finding that these concepts need not be treated separately in classifying buying situations. Hence, we label the measure "NEWNESS + INFO."

TABLE 1
Limited Theory Test Phase: Factor Analysis, Unrotated

	F1	F2
Newness of Problem Items		
The account seldom purchases this type of product	.56	-.24
The product is the first purchase of its kind for the account	.78	-.23
The account has not dealt with this product class or requirement before	.65	-.36
This is still a rather new purchase for the account	.79	-.21
The account's requirements have changed since the product was purchased last	.31	.13
Information Needs Items		
The account has complete knowledge about what product characteristics are needed to solve the problem	-.24	.71
The account knows exactly what is needed	-.43	.55
The purchase decision demands a lot of information	.57	.41
The account is willing to gather and consider a lot of information before deciding	.64	.41
The account is willing to consider new information in making a decision	.05	.33
Consideration of Alternatives Items		
The account has considerable experience with the product class but is considering new options, new suppliers, or new products	.14	.65
The account is open to suggestions for change in the current purchase pattern	.18	.49
The account wants to consider all the alternatives carefully	.38	.49
The account is seriously interested in alternatives to the present supplier	.33	.38
The account is interested if salespeople call to propose changing suppliers	.21	.29
Variance Explained	23%	18%

Measure of consideration of alternatives. RFW's discussion treats "alternatives" in a general way, most often in reference to alternative suppliers. In our measure (Appendix B), two items refer specifically to suppliers and three items are more general (consideration of alternative purchase patterns, products, or options). The coefficient alpha of .57 indicates modest reliability, consistent with much of the research reported in major marketing journals (Churchill and Peter 1984) and adequate by the basic research standards of Nunnally (1967). However, it does not meet Nunnally's more stringent recommendations (1978).

Validity

The *face validity* of the NEWNESS + INFO and alternatives (ALT) measures is established by their correspondence to the RFW descriptions. Further, the NEWNESS + INFO and ALT measures are significantly and positively correlated (.14, $p < .05$), which is consistent with the RFW framework. However, their correlation is small.

Nomological validity (correspondence of the measures with theory) can be assessed further by examining the relationship of buyer behavior and purchase task. What we expect, based on the RFW framework, is that buyer behavior will vary systematically with both NEWNESS + INFO and ALT, because each reflects facets of the buyclass construct.

Buyer behavior. According to RFW, *the purchase situation determines buyer behavior, regardless of the product's features.* In operational terms, the more frequently a new task occurs, the more likely are certain behaviors. The relationship between buyclass and behavior is the heart of the RFW theory. Were it not for these predictions, the framework would merely add vocabulary to the marketing literature.

In Table 2 is the simple correlation between NEWNESS + INFO and how frequently a particular behavior is observed.⁸ Also reported is a partial correlation coefficient, which shows the relationship between buyer behavior and buyclass (as represented by NEWNESS + INFO), controlling for the effect of the product line's technical sophistication. The product lines sold in each sales district differ considerably in their technical complexity, ranging from simple commodity items to high technology components. The degree of technical sophistication was assessed by using a very reliable 7-item measure (Appendix C). In spite

⁸NEWNESS + INFO is the independent variable and behavior is the dependent variable. This is equivalent to separate regressions for each NEWNESS + INFO/behavior prediction, which can be summarized by the correlation coefficient (Dhrymes 1974).

of the variance in the technical sophistication of the products sold, the partial and simple correlations are very similar, indicating the predicted relationships are not spurious effects of the products' features.⁹ Hence, the results in Table 2 support the buyclass framework well, suggesting that the nomological validity of the NEWNESS + INFO measure is high.

Table 2 indicates that the more frequently salesforces confront new tasks, the more frequently they observe that decisions take more time (statement A) and involve more people (statement B). These findings reflect the complicated decision-making process posited by RFW to characterize new tasks. Further, salesforces that engage in more new tasks observe more frequently that the customer is unsure (C) and that the product specifications are ambiguous (D). The situation is one of uncertainty and flux. Hence, finding a solution is paramount and economic considerations are secondary (E). The "mundane" concerns of the straight rebuy—price and assurance of supply—are not of primary interest (F). As expected, the more frequently new tasks are encountered, the less frequently the customer is completely satisfied with the present supplier (statement G). Conversely, the more common are routine tasks, the more often the customer is happy with the "in" supplier.

We do not have a theory to predict the relationship between consideration of alternatives *per se* and buyer behavior. Nonetheless, for exploration, Table 2 includes correlations between the buyer behavior statements and how seriously buyers consider alternative suppliers and solutions to their needs. We expected results similar to those obtained with NEWNESS + INFO, because consideration of alternatives is also a facet of RFW's buyclass theory.

Contrary to our expectations, most correlations are insignificant, with three exceptions. Consideration of alternatives, like NEWNESS + INFO, appears to be associated with larger purchasing committees (statement B) and with customers that are not sure what is the best decision (C). Interestingly, search for alternatives also is associated with the account's emphasis on price and supply criteria (F). RFW portray such decisions as straight rebuys in which confident, time-pressured decision makers give serious consideration

⁹As a further check, 16 firms generated the sample of 159 sales districts. Most firms contributed only a few observations. However, seven firms each accounted for 15 or more districts. To check the possibility that company-specific effects account for the buyclass-buyer behavior correlations in Table 2, a regression was run adding dummy variables for the large firms. The relationships between buyclass and buyer behavior were unaffected. In general, the company dummies were insignificant. Further, the pattern of dummy variable significance was sporadic; different dummies were significant in different equations. Thus, it appears unlikely that company effects are an alternative explanation.

TABLE 2
Model Development Phase Correlations: NEWNESS + INFO and ALT Scores with Statements About Buyer Behavior

Statements About Buyer Behavior	Correlation with NEWNESS + INFO Score ^a	Correlation with ALT Score ^a
A. The purchase decision is made quickly	-.29 ^b (-.27) ^b	-.08 (-.09)
B. Several people are involved in the purchase decision	.33 ^b (.33) ^b	.14 ^d (.14) ^d
C. The account is somewhat unsure what is the best decision	.49 ^b (.46) ^b	.16 ^d (.18) ^d
D. The specifications for the product are not completely defined	.47 ^b (.47) ^b	.09 (.10)
E. Finding a solution to the problem is more important to the account than the economic considerations	.25 ^b (.27) ^b	-.09 (-.10)
F. The account is most interested in price and assured supply	-.18 ^b (-.15) ^d	.18 ^d (.17) ^d
G. The account is completely satisfied with the present supplier	-.17 ^c (-.14) ^d	-.05 (-.07)

^aIn parentheses are partial correlations between the NEWNESS + INFO or ALT score and buyer behavior statements, holding constant the effect of the technical sophistication of the product line being sold.

^bp < .01.

^cp < .05.

^dp < .10.

to the "in" supplier only. However, our exploratory results are in accord with those of Bubb and van Rest (1973), who suggest that price-conscious buyers regularly consider many alternatives seriously in order to bargain the price down on each order.

Phase 2. Model Replication

Though the electronic components industry is a broadly representative one, the generality of the preceding results may be limited by the single-industry focus. Further, though many sales districts are represented, the fact that the number of companies is small may limit the range of variation in buyer behavior observed by district salesforces. Hence, it is important to validate the model across a wide range of settings (Campbell and Fiske 1959).

Model Replication Method

Data collection. In phase 2, requests to participate were mailed to 750 senior sales managers of a broad range of manufacturing firms with annual sales of more than \$50 million. Each firm was offered, as an incentive to participate, a summary of findings pertaining to the study's major focus, compensation plans. Though the questionnaire was extensive, about 250 firms agreed to participate.

A field-pretested questionnaire (drawn up in the same way as the phase 1 instrument) was sent to each firm's contact person to be filled out by the sales manager. The manager responded for each salesforce paid

under one compensation plan.¹⁰ After two weeks, a followup questionnaire was sent. After 10 weeks, the study was closed. A total of 158 complete questionnaires were returned.¹¹ Table 3 shows that the sample is quite varied. In particular, respondents indicated what percentage of their sales is from each of the major product categories (capital equipment, components, MRO, etc.). More than half the sample sold in more than one major product category.

The replication sample is much larger and more varied in terms of firms and industries than the model development sample. Therefore many more sources of variation may be left uncontrolled. Further, the unit of analysis is a salesforce/pay plan combination, which is broader than the sales district used in the model development phase. Hence, the sample for phase 2 is considerably more heterogeneous than the sample for phase 1. For validation and replication, it affords a

¹⁰In a few cases, one manager filled out multiple forms, one for each salesforce/pay plan combination. However, in all but a few cases, the manager answered only for the largest single salesforce. Other analysis on the respondents who answered for two salesforces indicates that their answers for each salesforce are very different, suggesting the managers responded independently for each salesforce.

¹¹Though the response rate among the 250 firms agreeing to participate is high, the rate when weighed against the 750 firms approached is low. A likely explanation is that the questionnaire was very long and contained some potentially sensitive questions about pay practices. It is unlikely that any variables corresponding to a systematic reason not to respond would also be correlated with the variables relevant to the buyclass model.

TABLE 3
Replication Phase: Descriptive Statistics

Product Type	Number of Observations ^a
Capital equipment	31
Components	24
MRO	4
Services	5
Other	94
Total	158

Average order size in 1984: \$340,000
(range \$200 to \$3 million)
Minimum order size in 1984: \$2
Maximum order size in 1984: \$20 million
Average price of a single product sold: \$80,000
(range \$.10 to \$9 million)

^aNumber of companies selling predominantly (at least 75%) in this product category. The "other" category represents firms with sales balanced among two or more product categories.

strong test of the results found in the relatively controlled (homogeneous and micro) phase 1 setting.

Data Analysis and Results

Development of measures. The items developed in phase 2 are in the same format as those in phase 1. To test for robustness, variations in wording as well as some new items were employed.

Factor analysis was performed on a pool of items on task newness, information requirements, and consideration of alternatives (Table 4). As in phase 1, a scree test indicated that two factors dominate rather than one, though they explain a smaller fraction of the total variance. Factor 1 (task newness and information requirements) explains 29% of total variance and fac-

tor 2 (consideration of alternatives) explains 14%.¹² The results replicate the separation of consideration of alternatives from the other buyclass dimensions (newness and information).

The measure of *NEWNESS + INFO* (newness of task and amount of information required to decide) is given in Appendix D. Items similar to those in phase 1 are marked by an asterisk. The measure shows reasonable reliability (coefficient alpha is .71), in spite of the differences between the model development and model replication samples and items. The *consideration of alternatives (ALT)* measure is given in Appendix E. As in phase 1, the number of items is small and the reliability is modest (.54).

Validity. The face validity of the *NEWNESS + INFO* and *ALT* scales is buttressed by their correspondence to the RFW descriptions. Encouragingly, the variation in items introduced in model replication does not appear to alter substantially the results of the model development stage. The correlation between *NEWNESS + INFO* and the measure of consideration of alternatives is again positive and statistically significant (as expected from the RFW framework), but small (.21, $p < .01$).

The nomological validity of the *NEWNESS + INFO* measure is examined in Table 5, where the results shown in Table 3 (the nomological validity test of the model development phase) are replicated and

¹²A third factor, which overlaps the first, explains 10% but merely reflects the wording of one item. All remaining factors are very small and reflect one or two items and wording nuances.

TABLE 4
Model Replication Phase Factor Analysis: Quartimax Rotation

	F1	F2
Newness of Problem Items		
The customer seldom purchases this type of product	.82	-.18
The customer has not dealt with this product class or requirement before	.68	-.02
The customer's requirements have changed since the product was purchased last	.31	.04
The customer has routinized the purchase decision so that it no longer requires a lot of attention (reverse scaled)	-.43	-.20
The customer considers the purchase decision to be routine (reverse scaled)	-.61	-.09
Information Needs Items		
The customer has complete knowledge about what product characteristics are needed to solve the problem (reverse scaled)	-.24	.02
The customer needs a lot of information before making a purchase decision	.58	.16
Consideration of Alternatives Items		
The customer is seriously interested in alternatives to the present supplier	.19	.46
The customer has considerable experience with the product class but is considering new options, new suppliers, or new products	.09	.77
The customer is not interested in new suggestions on ways of meeting his requirements (reverse scaled)	-.24	-.19
Variance Explained	29%	14%

TABLE 5
Model Replication Phase Correlations: NEWNESS + INFO and ALT Scores with
Statements About Buyer Behavior

Statements About Buyer Behavior	Correlation with NEWNESS + INFO Score ^a	Correlation with ALT Score ^a
A*. The purchase decision is made quickly	-.63 ^b (-.56) ^b	-.18 ^c (-.08)
A1. The purchase decision evolves over a long time period	.61 ^b (.52) ^b	.15 ^c (.07)
B ⁻ . A number of people are involved in the purchase decision	.49 ^b (.38) ^b	.18 ^c (.13) ^d
D*. The specifications for the product are not completely defined	.42 ^b (.25) ^b	.17 ^c (.10)
E [^] . The purchase decision is based primarily on the product's function in the application	.18 ^c (.23) ^c	-.18 ^c (-.17) ^c
F ⁻ . The customer is most interested in price and assured supply	-.28 ^b (-.29) ^b	.04 (.05)
G ⁻ . The customer is completely satisfied with the present supplier(s)	-.29 ^b (-.32) ^b	-.09 (-.11)
H. The purchasing agent is the key decision maker	-.43 ^b (-.37) ^b	.08 (.11)
I. Technical people have a major role in the purchase decision	.44 ^b (.34) ^b	.09 (-.00)

* Same item used in model development. - Similar item used in model development. ^ Analogous item used in model development. All other items (A1, H, I) are new to the model replication phase.

^aIn parentheses are partial correlation, controlling for percentage of sales in various product categories.

^bp < .01.

^cp < .05.

^dp < .001.

extended. Both simple and partial correlations are shown; the partial correlations control for what percentage of sales was made in each product category. The similarity of the simple and partial correlations indicates that product class effects do not account for these results.

Table 5 shows that the more frequently salesforces confront new tasks, the more frequently they observe that decisions take more time (statements A and A1), involve more people (statement B), involve undefined specifications (D), and are based on performance (E) rather than price and supply (F). Further, the customer is less likely to be completely satisfied with the present supplier (G).

The model replication phase explores the importance of various decision influencers. As predicted by RFW, the more frequently salesforces encounter new tasks, the more frequently technical personnel are major influencers (statement H) and the less frequently purchasing agents are key (statement I).

Table 5 also gives, for exploration, the correlations of buyer behavior and how seriously the account considers alternative solutions to purchasing needs. Very few strong associations appear. As in phase 1, most correlations are not significant. Further, three of the five significant simple correlations are not significant when allowance is made for the product category

(statements A*, A1, and D*). Serious consideration of alternatives is associated significantly and positively, after controlling for product class effects, with the number of people in the buying center (B⁻). This result is expected from RFW's theory and also is found in the model development phase. However, contrary to our expectations, buyers appear to consider fewer rather than more alternatives when the product's function in the application is the primary consideration (E[^]). A possible interpretation is that some of the applications are so specific that they constrain the buyer to one (known) alternative.

In both the model development and model replication stages, ALT seems largely unrelated to buyer behavior. Where significant relationships do occur, the results for consideration of alternatives in phase 2 generally do not replicate the results of phase 1 very well. Unlike those of phase 1, phase 2 results for alternatives are influenced more by the product category. Further, the only significant finding on consideration of alternatives that is replicated across the two studies is that in more open-minded buying centers, more people are involved in the purchase decision. In contrast, the results involving NEWNESS + INFO are replicated, suggesting that the construct "seriousness of consideration of alternatives" does not operate entirely as suggested by RFW.

Summary

For the most part, the model development and model replication phases yield similar results. This finding is encouraging, given the multi-industry and multi-firm nature of the replication sample. Further, in the replication sample senior sales managers were the respondents, whereas in the development sample district sales managers, who are closer to the field, responded. In spite of these differences in the level of aggregation, the results converge on the following items.

1. Purchase newness and information needs are related, consistent with theory.
2. The seriousness of consideration of alternatives is related only weakly to newness and information needs, contrary to theory.
3. Newness and information needs appear to represent the buyclass construct well and are associated with buyer behavior, regardless of the product class, in accord with RFW's predictions.
4. The seriousness of consideration of alternatives is related less strongly to buyer behavior and is not related consistently in the manner predicted by RFW's theory. Further, the relationship between the buyer's open mindedness and buyer behavior may be affected by the product category under consideration.

Discussion

Robinson, Faris, and Wind (1967, p. xii) state their basic objective as the development of an operationally useful classification system applicable to the entire industrial procurement process. Our results suggest that this ambitious objective was largely realized. In a departure from prior research, we asked what *observers*, not members, of the buying center see. We sacrificed detail (e.g., the researcher's observations of a laboratory simulation or the salesperson's observations of a single transaction) for range (the salesforce's observations of its customer base) to test the generalizability and explanatory power of the buyclass theory. We did so first in a relatively controlled, homogeneous setting (one industry, few firms, one sales district) and then in a replication and extension across greatly varied circumstances (many industries, many firms, salesforces under one compensation scheme). On the whole, the results are robust to changes in setting and wording.

Our results offer support for a modified version of the RFW model of buyer behavior, a version wherein task newness and information needs, but not consideration of alternatives, define the buyclass. Across a

wide range of circumstances we find correspondence between the RFW expectations of buyer behavior and the buyer behavior salesforces observe. Specifically, salesforces that frequently encounter new tasks (defined by the newness of the purchase and the extent of the buyer's need for more information) commonly observe the buying center to be:

- large,
- slow to decide,
- uncertain about its needs and the appropriateness of the possible solutions,
- more concerned about finding a good solution than getting a low price or assured supply,
- more willing to entertain proposals from "out" suppliers and less willing to favor "in" suppliers,
- more influenced by technical personnel, and
- less influenced by purchasing agents.

Conversely, salesforces facing more routine purchases (straight and modified rebuys, the most common selling situations) more often observe buying centers that are small, quick to decide, confident in their appraisals of the problem and possible solutions, concerned about price and supply, satisfied with "in" suppliers, and more influenced by purchasing agents. This picture is consistent with RFW's depiction of the new task as open and fluid and of routine tasks as more closed and fixed.

In a departure from the then-conventional wisdom of industrial buyer behavior theory, RFW sought to develop a model that would apply to any product class sold to industrial buyers. Their premise was that the features of *the purchase situation* (the newness of the problem to the buyer, the buyer's need for more information) are the most important determinants of industrial buyer behavior. Hence, RFW believed that these situational features, rather than product characteristics, should be the basis of a useful taxonomy. This approach is akin to attempts in consumer behavior to develop theories based on a consumer's involvement level (Sheth 1977) rather than theories based on a product's physical specifications.

Taken as a whole, our results tend to support RFW's claim of generality across product classes. In contrast, two articles have reported product class effects to be stronger than buyclass effects. The difference in results may be due to different operationalizations of the buyclass construct. Bellizzi and McVey (1983) measured buyclass as frequency of purchase, thus losing some of the richness of the construct. Jackson, Keith, and Burdick (1984) manipulated buyclass in an experimental setting, asking purchasing agents to role-play. This large difference in setting may account for

some of the differences in results. Further, those authors found no buyclass effect on only one issue: the relative influence of members of the buying center. As noted before, relative influence is an area where disagreement among buying center members is likely to be high.

Johnston's (1981) review criticizes the RFW model for ignoring the importance and complexity of the purchase. Our phase I findings suggest that the RFW model is valid even when the product's technical complexity is taken into account. Perhaps complexity is intertwined with newness, which is the most important dimension of buyclass. However, the importance of the purchase, which we did not address, may explain the separation we find between buyclass and how seriously the prospect considers alternatives (discussed hereafter).

The implications of the buyclass model for salesforce effectiveness are considerable. Because of the nature of new tasks, adaptive selling (Weitz 1978) is very effective. Salespeople should play a consultant's role and concentrate on winning bids by influencing specifications and product perceptions rather than by "lowballing" the price. In contrast, in more routine tasks, salespeople will have more difficulty getting the customer to process actively about their products and will find it difficult to avoid emphasizing price and supply, given the customer's preoccupation with those attributes. "In" suppliers should concentrate on account maintenance, that is, avoiding dissatisfaction (rather than concentrating on improving quality or further reducing price without evidence of customer dissatisfaction). "Out" suppliers have a low probability of making a sale unless they can make the customer aware of deficiencies in the current supply arrangement. "Out" salespeople must be alert to signs of dissatisfaction if confronting straight rebuys (a brief window of opportunity) and must seek to become "in" suppliers quickly when confronting a task that is losing its newness.

We also observe some deviations from the RFW predictions. Specifically, we find indications that some new task buyers do *not* consider a range of alternatives seriously and that some straight rebuy buyers *do*. Both of these circumstances contradict the RFW model but agree with expectations generated from other marketing literature, particularly the source loyalty research.

The tendency of some buyers to consider alternatives *less* rather than more seriously in new task situations appears irrational. However, Bubb and van Rest (1973) point out that source loyalty (a tendency, not explained otherwise, to buy repeatedly from the same supplier) can benefit the purchaser by facilitating a valued long-term relationship, which the supplier will hesitate to abuse. Williamson (1985) also emphasizes

the importance of valued relationships in preventing "opportunism" (abuse) by either party, particularly in the case of experience goods (goods that cannot be evaluated until they are purchased and used). Hakansson (1984) stresses the potential for long-term benefits, such as improved information flow, better product customization, and preferred customer treatment in case of shortages or other crises. Hence, loyalty may indeed be a rational way to approach some new task purchases. Ross (1985) notes interest in research addressing the question of when such behavior is optimal and when it is practiced. Prior research suggests that characteristics of key decision influencers or of the organization are possible explanations.

The arm's length approach (win the business anew every time) characterizes some straight or modified rebuys. This approach indicates that some buyers perceive the benefits of extensive information processing (consideration of alternatives) to outweigh the cost. Arndt (1979) proposes that such behavior is on the wane, being replaced by "domesticated" markets (long-term relationships). Nonetheless, some buyers do rigorously scrutinize each decision, even routinized ones. An interesting avenue for future research is the determination of what differentiates the scrutinizers from the RFW-style buyers, who avoid processing alternatives in straight rebuys. A possible explanation is the importance of the purchase (Johnston 1981). Very large or critical purchases, even when routinized, may merit the effort to scrutinize alternatives every time.

Limitations

The exploratory nature of our research creates two significant limitations, which imply that the results should be interpreted with caution. The first limitation is the error in measurement issue. Many of our measures are single questions (of unknown reliability) and our consideration of alternatives measure fails to meet current standards of reliability for basic research. Extensive scale development was outside the exploratory scope of our research. The results, obtained in spite of the attenuating effect of measurement error, tend to support and extend much of the RFW framework, but future research will profit from better measurement.

A second limitation is the level of measurement. We asked how frequently salespeople encounter a given circumstance and correlated the frequencies over several circumstances. The results are what we would expect if customers behave as predicted by the buyclass framework. However, we did not ascertain whether these results hold in any given transaction.

Corroborating our results at the micro level would require a major research commitment, for it would entail collecting information transaction by transaction. Our results, combined with *a priori* reasoning, sug-

gest that a useful and valid way to do so is to ask salespeople to act as reporters on buying centers. To cover a reasonable number of transactions, researchers may elect to (1) ask a few salespeople about each of a large number of transactions or (2) ask many salespeople about each of a few transactions. The latter strategy is more feasible, as a smaller request is more likely to be granted.¹³ As in all field studies, obtaining respondent cooperation is a formidable task.

Conclusion

The buyclass framework is one of the most used theories in organizational buyer behavior. A major reason is that it links a parsimonious, easy-to-recognize taxonomy with specific rules about the major aspects of buyer behavior, in particular, the importance of product attributes (e.g., price). Our results suggest that a simplified version of the framework (in which the buyclass is identified only by task newness and information needs) holds in a broad variety of circumstances. We also find evidence of some low search in new tasks and some high search in routine tasks. Research is needed to develop a theory of when such unexpected behavior occurs and why. In more general terms, we need to study whether the heuristics individuals use to simplify complex tasks, such as evaluating risks (Kahneman, Slovic, and Tversky 1982), also apply to buying centers. The findings should provide significant insight into one of the most fundamental problems in marketing: the nature of organizational buyer behavior.

APPENDIX A

Model Development Phase: NEWNESS + INFO Measure

Newness of Problem Items

The account seldom purchases this type of product.
The product is the first purchase of its kind for the account.

The account has not dealt with this product class or requirement before.

This is still a rather new purchase for the account.

The account's requirements have changed since the product was purchased last.

Information Needs Items

The account has complete knowledge about what product characteristics are needed to solve the problem (reverse scaled).

The account knows exactly what is needed (reverse scaled).

¹³The drawback is the possibility that unrepresentative transactions will come to the respondent's mind.

The purchase decision demands a lot of information.
The account is willing to gather and consider a lot of information before deciding.

The account is willing to consider new information in making a decision.

Coefficient alpha: .73

APPENDIX B

Model Development Phase: Measure of Consideration of Alternatives

The account is seriously interested in alternatives to the present supplier.

The account wants to consider all the alternatives carefully.

The account is interested if salespeople call to propose changing suppliers.

The account is open to suggestions for change in the current purchase pattern.

The account has considerable experience with the product class but is considering new options, new suppliers, or new products.

Coefficient alpha: .57

APPENDIX C

Model Development Phase: Technical Sophistication of Product Line Carried in District

On each scale below, please circle the most appropriate rating for your product line taken as a whole.

1. Technical _____ Nontechnical (1 to 7) (reversed)
2. Low engineering content _____ High engineering content (1 to 7)
3. Fast changing _____ Slowly changing (1 to 7) (reversed)
4. Unsophisticated _____ Sophisticated (1 to 7)
5. Commodity _____ Customized (1 to 7)
6. Unique _____ Common (1 to 7) (reversed)
7. Complex _____ Simple (1 to 7) (reversed)

Coefficient alpha: .88

APPENDIX D

Model Replication Phase: NEWNESS + INFO Measure

Newness of Problem Items

The customer seldom purchases this type of product.*

The customer has not dealt with this product class or requirement before.*

The customer's requirements have changed since the product was purchased last.*

The customer has routinized the purchase decision so that it no longer requires a lot of attention (reverse scaled).

The customer considers the purchase decision to be routine (reverse scaled).

Information Needs Items

The customer has complete knowledge about what product characteristics are needed to solve the problem* (reverse scaled).

The customer needs a lot of information before making a purchase decision.

Coefficient alpha: 71

*Similar item used in model development phase.

APPENDIX E

Model Replication Phase: Measure of Consideration of Alternatives

The customer is seriously interested in alternatives to the present supplier.*

The customer has considerable experience with the product class but is considering new options, new suppliers, or new products.*

Coefficient alpha: .53

*Similar item used in model development phase.

REFERENCES

- Anderson, Paul F. and Terry M. Chambers (1985), "A Reward/Measurement Model of Organizational Buying Behavior," *Journal of Marketing*, 49 (Spring), 7-23.
- Arndt, Johan (1979), "Toward a Concept of Domesticated Markets," *Journal of Marketing*, 43 (Fall), 69-75.
- Bellizzi, Joseph A. and Phillip McVey (1983), "How Valid is the Buygrid Model?," *Industrial Marketing Management*, 12 (February), 57-62.
- Bonoma, Thomas V., Richard Bagozzi, and Gerald Zaltman (1978), "The Dyadic Paradigm with Specific Application to Industrial Marketing," in *Organizational Buyer Behavior*, Gerald Zaltman and Thomas V. Bonoma, eds. Chicago: American Marketing Association, 49-66.
- Brand, Gordon T. (1972), *The Industrial Buying Decision*. New York: John Wiley & Sons, Inc.
- Bubb, Peter Lawrence and David John van Rest (1973), "Loyalty as a Component of the Industrial Buying Decision," *Industrial Marketing Management*, 3, 25-32.
- Campbell, Donald T. (1955), "The Informant in Quantitative Research," *American Journal of Sociology*, 60, 339-42.
- and Donald W. Fiske (1959), "Convergent and Discriminant Validity by the Multitrait-Multimethod Matrix," *Psychological Bulletin*, 25 (March), 81-105.
- Cardozo, Richard N. and James W. Cagley (1971), "Experimental Study of Industrial Buyer Behavior," *Journal of Marketing Research*, 8 (August), 329-34.
- Choffray, Jean-Marie and Gary L. Lilien (1978), "A New Approach to Industrial Market Segmentation," *Sloan Management Review*, 19 (Spring), 17-30.
- Churchill, Gilbert A., Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research*, 16 (February), 64-73.
- and J. Paul Peter (1984), "Research Design Effects on the Reliability of Rating Scales: A Meta-Analysis," *Journal of Marketing Research*, 21 (November), 360-75.
- Dhrymes, Phoebus J. (1974), *Econometrics: Statistical Foundations and Applications*. Heidelberg: Springer-Verlag.
- Doyle, Peter, Arch G. Woodside, and Paul Michell (1979), "Organizations Buying in New Task and Rebuy Situations," *Industrial Marketing Management*, 8, 7-11.
- Electronic Industries Association (1981), *Electronic Market Data Book*. Washington, DC: Electronic Industries Association.
- Ferguson, Wade (1979), "An Evaluation of the BUYGRID Analytic Framework," *Industrial Marketing Management*, 8, 40-4.
- Hakansson, Hakan, ed. (1984), *International Marketing and Purchasing of Industrial Goods*. New York: John Wiley & Sons, Inc.
- Jackson, Donald W., Janet E. Keith, and Richard K. Burdick (1984), "Purchasing Agents' Perceptions of Industrial Buying Center Influence," *Journal of Marketing*, 48 (Fall), 75-83.
- Johnston, Wesley J. (1981), "Industrial Buying Behavior: A State of the Art Review," in *Review of Marketing 1981*, Ben M. Enis and Kenneth J. Roering, eds. Chicago: American Marketing Association, 75-88.
- and Robert E. Spekman (1982), "Industrial Buying Behavior: A Need for an Integrative Approach," *Journal of Business Research*, 10, 135-45.
- Kahneman, Daniel, Paul Slovic, and Amos Tversky, eds. (1982), *Judgement Under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press.
- Leigh, Thomas W. and Arno J. Rethans (1984), "A Script-Theoretic Analysis of Industrial Purchasing Behavior," *Journal of Marketing*, 48 (Fall), 22-32.
- Lilien, Gary L. and M. Anthony Wong (1984), "Exploratory Investigation of the Structure of the Buying Center in the Metalworking Industry," *Journal of Marketing Research*, 21 (February), 1-11.
- Matthyssens, P. and W. Faes (1985), "OEM Buying Process for New Components: Purchasing and Marketing Implications," *Industrial Marketing Management*, 14, 145-57.
- McMillan, James R. (1972), "The Role of Perceived Risk in Industrial Marketing Decisions," in *Proceedings of the American Marketing Association*, Series #34. Chicago: American Marketing Association, 412-17.
- Moriarty, Rowland T. (1980), "Conceptual Models of Organizational Buying Behavior," Harvard Business School Working Paper 80-36.
- and John E. G. Bateson (1982), "Exploring Complex Decision Units: A New Approach," *Journal of Marketing Research*, 19 (May), 182-91.
- and Robert E. Spekman (1984), "An Empirical Investigation of the Information Sources Used During the Industrial Buying Process," *Journal of Marketing Research*, 21 (November), 137-47.

- Nunnally, Jum C. (1967), *Psychometric Theory*, 1st ed. New York: McGraw-Hill Book Company.
- (1978), *Psychometric Theory*, 2nd ed. New York: McGraw-Hill Book Company.
- Peters, Michael M. and M. Venkatesan (1973), "Exploration of Variables Inherent in Adopting an Industrial Product," *Journal of Marketing Research*, 10 (August), 312-15.
- Peters, Thomas J. and Robert H. Waterman (1982), *In Search of Excellence*. New York: Warner Books.
- Pingry, Jack R. (1974), "The Engineer and Purchasing Agent Compared," *Journal of Purchasing*, 10 (November), 33-45.
- Prais, S. J. and J. Aitchison (1954), "The Grouping of Observations in Regression Analysis," *Review of the International Statistical Institute*, 22, 1-22.
- Puto, Christopher P., Wesley E. Patton, and Ronald H. King (1985), "Risk Handling Strategies in Industrial Vendor Selection Decisions," *Journal of Marketing*, 49 (Winter), 89-98.
- Robinson, Patrick J., Charles W. Faris, and Yoram Wind (1967), *Industrial Buying and Creative Marketing*. Boston: Allyn & Bacon.
- Ross, William T. (1985), "Managing Marketing Channel Relationships," Marketing Science Institute Working Paper 85-106.
- Saleh, Farouk A., Bernard J. LaLonde, James R. Riley, and John R. Grabner (1971), "Modeling Industrial Buyer Behavior: The Purchase of Motor Carrier Services," in *Proceedings of the American Marketing Association*, Series #33. Chicago: American Marketing Association, 402-7.
- Sheth, Jagdish N. (1977), "Recent Developments in Organizational Buying Behavior," in *Consumer and Industrial Buying Behavior*, Arch G. Woodside, Jagdish N. Sheth, and Peter D. Bennett, eds. Amsterdam: North-Holland Publishing Company, 17-34.
- Silk, Alvin J. and Manohar U. Kalwani (1982), "Measuring Influence in Organization Purchase Decisions," *Journal of Marketing Research*, 19 (May), 165-81.
- Stewart, David W. (1981), "The Application and Misapplication of Factor Analysis in Marketing Research," *Journal of Marketing Research*, 18 (February), 51-62.
- Sweeney, Timothy W., H. Lee Mathews, and David T. Wilson (1973), "An Analysis of Industrial Buyers' Risk Reducing Behavior: Some Personality Correlates," in *Proceedings of the American Marketing Association*, Series #35. Chicago: American Marketing Association, 217-21.
- Webster, Frederick E. and Yoram Wind (1972), "A General Model for Understanding Buying Behavior," *Journal of Marketing*, 36 (April), 12-19.
- (1979), "Effectiveness in Sales Interactions: A Contingency Framework," *Journal of Marketing*, 45 (Winter), 85-103.
- Weitz, Barton A. (1978), "Relationship Between Salesperson Performance and Understanding of Customer Decision Making," *Journal of Marketing Research*, 15 (November), 501-16.
- Williamson, Oliver E. (1985), *The Economic Institutions of Capitalism*. New York: The Free Press.
- Wilson, David T. (1981), "Industrial Buyers' Decision-Making Styles," *Journal of Marketing Research*, 8 (November), 433-6.
- Wind, Yoram (1970), "Industrial Source Loyalty," *Journal of Marketing Research*, 7 (November), 450-7.
- (1978), "The Organizational Buying Center: A Research Agenda," in *Organizational Buyer Behavior*, Gerald Zaltman and Thomas V. Bonoma, eds. Chicago: American Marketing Association, 14-21.
- Zaltman, Gerald and Thomas Bonoma (1972), "Organizational Buying Behavior: Hypotheses and Directions," *Industrial Marketing Management*, 6, 53-60.