ON THE MEASUREMENT OF INTERFIRM POWER IN CHANNELS OF DISTRIBUTION

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Summary

Based, in part, on previous work by various marketing channels researchers, an indirect approach to measuring interfirm power is developed centering on its functional relationship with dependence. The dependence of a target firm on a source firm is considered driven by the source's role performance at two dimensions of their dyadic business relationship (i.e., corporate and boundary personal dimensions). Empirical results from a study in the automobile distribution channel are presented in evaluating the reliability and construct validity of the dependence measures.

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INTRODUCTION

The concept of interfirm power, typically defined in the marketing channels literature as a characteristic of the dyadic business relationship which provides a "source" firm potential influence on a "target" firm's marketing strategy and/or general decision making (c.f., El-Ansary and Stern 1972, Etgar 1976), is considered central to the understanding of business firm interaction within a distribution channel (El-Ansary and Stern 1972, Hunt and Nevin 1974). Its study has been a major focus within empirical research in the marketing channels literature (El-Ansary and Stern 1972, Hunt and Nevin 1974, Wilkinson 1974, El-Ansary 1975, Etgar 1976; 1978, Lusch 1976; 1977).

While our understanding of the role of power in interfirm relationships has been substantially increased by this research stream, many important issues remain. One of the more significant issues which needs to be addressed is the measurement of interfirm power. Three basic approaches have been utilized in measuring levels of interfirm power within marketing channels. El-Ansary and Stern (1972), Hunt and Nevin (1974), Wilkinson (1974), and Etgar (1978) have used "attributed influence" measures. In this approach, a target evaluates the degree of influence or control that a source firm has attained on elements of his marketing strategy and/or decision making. A second approach, devised by Etgar (1976), utilizes an objective index of influence to reflect a source's power. This index is based on whether a target firm must perform certain behaviors or meet certain standards in their relationship. Finally, indicants of power based on its hypothesized sources have been devised by El-Ansary (1975) who used a dependence
approach and Lusch (1976, 1977) who considered power to be a function of a firm's bases of power. As indicated by Reve and Stern (1979), little measure validation has been performed in these studies. Validation of power measurement procedures represent a critical issue considering Reve and Stern's (1979) contention that some of the weak relationships found in previous empirical studies on interfirm power (e.g., between power and its hypothesized sources) may be due, in part, to insufficient operationalizations of power.

This paper has three main purposes. The first purpose is to briefly provide a perspective on the previously mentioned measurement approaches of interfirm power. The second purpose of this paper is to present an extended measurement approach of interfirm power based on its functional relationship with dependence. This study builds on previous research by Thibaut and Kelley (1959), Emerson (1962), and El-Ansary (1975) by providing an underlying rationale based on a source firm's role performance to explain how a target's dependence is driven in a dyadic channel relationship. The final purpose of this paper is to evaluate the reliability and construct validity of the dependence measures developed herein. Empirical results from a study in the automobile distribution channel are used in this evaluation.

PREVIOUS MEASUREMENT APPROACHES OF INTERFIRM POWER

The "Attributed Influence" Approach

The "attributed influence" approach is based on a target evaluating the degree to which a source influences or controls certain elements of
his behavior and/or decision making. For example, El-Ansary and Stern (1972) asked dealers and sales managers of distributorships in a heating and cooling equipment channel to rate the degree to which channel contacts influence a number of their strategy variables (e.g., inventory policy, order size). Hunt and Nevin (1974), Wilkinson (1974), and Etgar (1978) have also used attributed influence or control measures to reflect levels of a source firm's power in a distribution channel.2

While this method is considered to have some advantages (e.g., simplicity from the researcher's point of view) and has some precedent in the social psychology literature (c.f., Lippitt, et. al. 1952), a number of researchers have mentioned possible problems with this general approach (c.f., March 1955, Simon 1953, Etgar 1976). March (1955) indicates that the respondent may have considerable difficulty in responding to such items based on their abstract nature. The target may not even be completely aware of being influenced based on certain cognitive selective processes (e.g., selective perception and retention). Also, the multitude of possible influences on any decision can make attributions of influence to any one party a complex task.

March (1955) also suggests that considerable response bias may result when measuring attributed influence. A target may be unwilling to admit any influence has occurred in the relationship for this carries connotations of weakness and/or exploitation. This logic is supported by Kotter (1977) who indicates that the terms "influence" or "control" are normally looked upon negatively by most people. March (1955, p. 445) concludes, "One has a certain hesitancy in accepting an individual's self-evaluation of personal motivation in view of the distortions, conscious and unconscious, that may be ordinarily anticipated."
Simon (1953) contends that a construct must not be measured by another construct if there is a chance they are imperfectly related. As indicated by Tedeschi, et. al. (1973), Wilkinson (1974), and Etgar (1977), defining power as "potential influence" allows a clear distinction between it and influence (i.e., actual effect on another's perceptions, behavior, and/or decision making). This is important considering that a source firm may not utilize all of its power at any point in time due to situational circumstances (e.g., costs of applying power are high, the firm's interests center elsewhere) (El-Ansary and Stern 1972). Additionally, Tedeschi, et. al. (1973) contend that power may be inappropriately applied in certain instances with no influence resulting from its application. As such, it appears that levels of power and influence may not be equivalent in any specific interfirm relationship. Furthermore, to study the relationships between a firm's power, its usage of that power, and its achieved influence, independent measures of these constructs must be developed.

An "Objective Influence" Approach

Etgar (1976) develops an objective measurement approach of influence in a study dealing with independent property and casualty insurance agents. This approach is based on the target's need to perform certain behaviors (e.g., consult with their current insurers as to the choice of additional insurers, commit a minimum annual premium volume to their insurers) or meet certain standards (e.g., maintain a given risk mix of customers) in a channel relationship with a source firm. Such forms of influence are normally created when channel relationships are initially established.
While overcoming the problems with utilizing subjective judgments, this approach still equates achieved influence with power. Moreover, these items center only on influence gained through formalized means, legitimized through the existence of verbal agreements and/or contractual requirements in the channel relationship. Absent from this approach are factors relating to the target's autonomous decision making over time which is another major component of the power-influence process in a distribution channel.

The "Sources of Power" Approach

The source or origin of power concerns how power is attained and subsequently maintained by a firm in a dyadic channel relationship. Simon (1953) originally suggested that if a measure of a source's resource base relevant to its relationship with a target can be devised, it can be used to infer the magnitude of the source's power in that relationship. Two main sub-approaches have subsequently developed along these lines. Thibaut and Kelley (1959) and Emerson (1962) theorized that a measure of a target's dependence on a source can be used to infer the level of the source's power in their relationship. On the other hand, French and Raven (1959) developed the "bases of power" approach which provides a rationale for why a target may comply with source demands at given points in time. Each of these approaches will be discussed individually even though it is rather difficult to distinguish between "bases of power" and the "elements of dependence." Emerson (1962, p. 34) highlights this possibility when, in referring to the French and Raven (1959) paper, he states, "Careful attention to
our highly generalized conception of dependence will show that it covers most if not all of the forms of power listed in that study."

Bases of Power. The "bases of power" rationale was developed by French and Raven (1959) in the social psychology literature. Five primary bases or sources of power are typically seen to exist: (1) the reward base of power (i.e., based on the target's belief that the source has the ability to mediate rewards for him); (2) the coercive base of power (i.e., based on the target's belief that he will be punished by the source if he fails to conform to the influence attempt); (3) the legitimate base of power (i.e., based on the target's belief that the source has the right to prescribe certain behavior); (4) the expert base of power (i.e., based on the target's belief that the source has superior knowledge or information); and (5) the referent base of power (i.e., based on the target's desire to be identified with the source). Hunt and Nevin (1974) propose that the above bases reflect either "coercive" or "noncoercive" (i.e., the reward, legitimate, expert, and referent bases) elements in a channel relationship.

Lusch (1976) adopts the basic rationale that Hunt and Nevin (1974) develop to measure certain noncoercive and coercive sources of power within dyadic channel relationships. To reflect its noncoercive sources of a firm's power, he identifies sixteen assistances that manufacturers provide their dealers in the automobile distribution channel (e.g., executive training, sales promotion kits, service manuals). "To the extent that these assistances are of high quality, they establish the franchisor as an expert in the eyes of the franchisee; they establish the franchisor as someone with the ability to reward; they legitimize
the franchisor's efforts to gain power; they help to get the franchisee to willingly yield power to the franchisor" (Lusch 1976, p. 385). The higher the quality of assistance on these issues, the more noncoercive power that was predicted for the manufacturer.

Lusch (1976) identifies six coercive sources of power: (1) slow delivery of vehicles; (2) slow payment on warranty work; (3) unfair distribution of vehicles; (4) turndowns on warranty work; (5) threat of termination; and (6) bureaucratic red tape. The greater the perceived likelihood of a manufacturer utilizing each of these sources, the greater the "coercive" power predicted for the manufacturer.

Dependence. A firm's dependence on another firm represents its need to maintain the relationship in order to achieve its desired goals. Emerson (1962, p. 33) notes possible determinants of dependence, "The dependence of actor P on actor O is (1) directly proportional to P's motivational investment in goals mediated by O, and (2) inversely proportional to the availability of those goals to P outside the O-P relation." The higher a target firm's dependence on a source firm, the more power that would be predicted for the source under this rationale.

El-Ansary (1975) within a heating and cooling supply and equipment channel used a factor analytic approach in an attempt to determine the structure of interfir dependence. He concludes that two generic types of dependence determinants exist somewhat different from what Emerson (1962) predicted. The first is a target's "stake" or concern for sales and profits in the relationship based on the importance of (1) the source's product line to the target's total sales, (2) the source's product line to the target's air conditioning and heating system sales,
(3) the source's product line to the target's net profits, (4) the availability of alternative sources of supply, and (5) the cost of switching to alternative sources of supply. The second is the target's "motivational investment" or "commitment" to the source's marketing mix programs. This concerns the importance to the target of such factors as promptness of delivery, cooperative advertising, product sales meetings, and participation in industry associations. As El-Ansary (1975) indicates, these results suggest that the two dimensions Emerson (1962) proposes will drive a target's dependence are not independent (i.e., goal mediation and perceived availability/attractiveness of alternatives). Given a target has a high level of sales and profits from a source firm's product lines, the costs of replacing the source may be perceived as being high and thus an impediment to switching relationships.

A Relative Evaluation of the Measurement Approaches

The "sources of power" approach appears more attractive than basing the measurement of power on influence or control measures for conceptual as well as operational reasons. Conceptually, power is inferred based on measures of variables which supposedly originate or drive the level of a firm's potential influence rather than on outcomes achieved through power's successful application (i.e., influence on a target's behavior). As such, this approach facilitates the development of independent measures of power and influence. Operationally, the difficulties which appear to exist when deriving measures of a source's influence on a target's behavior are avoided. While importance and/or
quality of assistance (performance) ratings are based on the target's perceptions, they certainly appear to be less sensitive issues which involve relatively objective and well defined evaluations on the part of the target.

DEPENDENCE IN THE INTRACHANNEL EXCHANGE PROCESS

Dependencies arise among firms because of task specialization and functional differentiation within the marketing channel (Reve and Stern 1979). Within a dyadic channel relationship, the channel position of each firm contributes to the set of inherent tasks or responsibilities that each party must perform to facilitate the other's goal attainment (Gill and Stern 1969). Responsibilities may be related to channel positions over time through tradition (Stern 1977), cost tradeoffs (Rubin 1973), managerial preferences (Cort and Stephenson 1978), or legal considerations (Hunt and Nevin 1975). They may also be negotiated in certain business situations according to Robicheaux and El-Ansary (1975). The inherent responsibilities of a business firm define its channel role in dyadic relationships with other firms (Gill and Stern 1969).

As discussed earlier, Lusch (1976) indicates that a source firm's performance in providing assistances (e.g., excellent training programs and operation manuals) to the target firm will drive the level of the source firm's power. This together with the preceding discussion suggests that a firm's performance on elements of its channel role or its role performance (i.e., its ability to carry out expected or inherent tasks based on its position in the channel as perceived by members of
another firm) will drive the level of the other firm's dependence in their relationship. This relationship is based on the manner in which a source's role performance impacts levels of the target's goal attainment.

The concept of role performance is consistent with and can be interpreted in terms of Emerson's (1962) two determinants of dependence. Within a dyadic channel relationship, the targets' motivational investment in goals mediated by the source can be driven by the source's performance on elements of its channel role. Additionally, if the source's performance is compared in a relative sense to industry average performance or the performance of a primary competitor, a notion of the alternatives available to the target within the industry in question and their relative attractiveness can be gained. Although the target may have other investment alternatives in other industries, if a source firm's level of role performance is high, the likelihood of the target locating more attractive investments elsewhere appears lessened. This reasoning is supported, in part, by El-Ansary (1975) whose findings suggest that the "motivational investment" and "availability of alternative" dimensions are not independent.

A Model of the Intrachannel Exchange Process

Figure 1 presents a model describing the basic elements of the intrachannel exchange process between two firms. The model and its subsequent description provides the conceptual framework for understanding a target firm's dependence based on a source firm's role performance, thereby laying the groundwork for the development of
operational measures of dependence. Within the model and subsequent discussions, the source firm represents a manufacturer while the target firm represents a wholesaler or retailer/dealer. A manufacturer's dependence in a relationship could be specified with the same general approach by identifying elements of the wholesaler's (or retailer's) role where its performance may aide the manufacturer's goal attainment.

[Place Figure 1 About Here]

Two Dimensions Within the Exchange Process. Within the intrachannel exchange process with a target firm, two main dimensions of the source firm may be distinguished as exhibited in Figure 1. The corporate body of the source firm represents its decision making, planning, and operations center which has little, if any, direct personal contact with the target. As such, this dimension forms the impersonal basis of their business relationship. On the other hand, as Ridgway (1957) indicates, the boundary personnel of the source firm represent it in contacts with the target firm. They form the personal basis of the business relationship. The source's relative performance on elements of its channel role at each dimension appears to drive the nature of the target's dependence in their relationship. Furthermore, the relative importance of each element to the dealer's goal attainment should also be considered as suggested by El-Ansary (1975). This will determine the impact that high or low levels of source firm performance on specific elements will have on the target's dependence.

Role Performance at the Impersonal Dimension. At the corporate level, a source firm's performance in two basic areas may be important in driving the level of a target's dependence. The first area concerns
the source's perceived ability to generate a level of consumer demand (C8 in Figure 1) at the target's business. A source's performance on
the traditional marketing strategy variables (C1) will determine, in
large part, its relative position in the market and thus largely affect
a target's ability to meet sales goals. This, in turn, will largely
establish the target's ability to meet profit goals for sales volume
can be seen as a surrogate for the scope of a firm's overall business
opportunity wherein costs can be controlled to maximize profits.
El-Ansary and Stern (1972) and El-Ansary (1975) have noted the impor-
tance of sales and profit variables in driving the level of a target's
dependence in a relationship. As suggested above, a measure of the
source's performance in generating demand at the target's business
would indirectly reflect its contributions to the target's sales and
profit levels. Bucklin (1973) lists a source firm's demand generating
ability as a primary way to affect the middleman's payoff function and,
therefore, his dependence in the relationship.

The second area which appears important at this dimension concerns
the source's perceived ability to provide assistances to the target to
increase the efficiency of its own business operations. Assistances
(C2) (e.g., operation manuals, sales promotion displays) are not the
inherent responsibility of the source firm. Rather, they bear on tasks
which are the target's obligations in the exchange process with con-
sumers. The source assumes that by creating and maintaining such assis-
tances, the probability of meeting its channel objectives may increase
due to better task coordination in the exchange process and both firms
may benefit. The target's dependence in the relationship may be enhanced
if he feels the assistances aid his business and, therefore, facilitate his goal attainment. Assistances may help the target (1) better meet the demand directly generated by the source firm, (2) generate additional demand based on his business strategy and operations (indicated by the line segment from firm i to market sales potential in Figure 1), and/or (3) reduce the costs of operating his business. As evident from previous discussions, Hunt and Nevin (1974) and Lusch (1976) indicate that interfirm assistances are important in this context. Webster (1976, p. 15) states, "Most manufacturers have developed a variety of training programs and supporting services to make the distributor as effective as possible, thus strengthening the distributor and the commitment to him."

Note that while assistances may be transmitted to the target by boundary personnel or other agents (e.g., sales training or other technical personnel), they are planned and developed at the corporate level. As such, they are properly placed at the impersonal rather than the personal dimension.

Role Performance at the Personal Dimension. At the personal dimension of the business relationship, three general areas of the source's role appear to have a critical impact on the target's dependence. First of all, the boundary personnel's performance in coordinating the flow of products and/or services needed to meet generated demand will affect the percentage of potential sales and profit goals the target actually achieves in the channel relationship. Customer service issues (C3) are interfirm tasks (e.g., product allocation and delivery, order processing, warranty specification) within the source's jurisdiction which must be
properly executed by the firm's boundary personnel in order to meet the target's needs in the exchange process. For example, if a boundary person's performance on allocating its firms products to the target's business is perceived as being poor, the target may feel sales are lost as a result of its customers' inability to inspect an appropriate assortment of models. El-Ansary and Stern (1972) and Etgar (1976, 1978) have included a number of customer service variables (e.g., prompt delivery and service, speed of underwriting service) in their measures of a firm's bases of power.

Secondly, the boundary personnel's ability to advise the franchisee on business matters (C4) may be very important in their business relationship. Based on boundary personnel training and ability to see similar firms in operation, the target may expect a good deal of guidance from them. If the boundary personnel are perceived as providing quality advice to aide the target's marketing strategy (V6) and business operations (C7), the target's goal attainment would be facilitated. Expert advice can also enhance the target's goal attainment by improving his business operations and strategy, thereby stimulating additional demand from the target's business. This will further affect the target's dependence on the source firm. French and Raven (1959) originally discuss the applicability of expertise as a source of power. Beier and Stern (1969) indicate that expertise is an important source of power in a channels context.

The final area concerns the general manner in which the source's boundary personnel interact with the target firm in interfirm contacts (C5). This involves the boundary personnel's perceived ability to create
a business climate conducive to the joint goal attainment of each party. When problems arise on issues in the business relationship, the target may expect the boundary personnel to cooperate in order to resolve the problems. If the source’s boundary personnel promote congenial and cooperative interaction when discussing interfirm problem areas, this would likely be seen as facilitating the target’s goal attainment. On the other hand, if the target feels the performance of the boundary personnel is poor based on selfish motivations, he may perceive them to be maximizing their firm’s goals and objectives at the expense of his own. Alderson (1965) indicates that the level of cooperation in channel relationships is an extremely important managerial issue. He suggests that the level of cooperation within a relationship will affect (1) the operating efficiency of the relationship and (2) the chances of the relationship prospering and continuing into the future. Such considerations will certainly impact the target’s level of dependence in a business relationship.

Interaction of the Impersonal and Personal Dimensions. While the impersonal and personal dimensions are conceptually distinct, it does appear they will interact to a degree. Boundary personnel behavior is based, in part, on directives and policies from the corporate level. The boundary personnel may be constrained in their performance on customer service issues if the corporate body does not possess adequate production, inventory, order processing, and delivery functions. Additionally, the corporate body’s ability to hire, train, and then retain quality people will certainly affect role performance at the personal dimension of the business relationship.
Performance at the personal dimension can also affect the target's perceptions of the source firm's performance at the impersonal dimension. By working with the target closely in explaining and implementing certain interfir assistance, boundary personnel can enhance the target's evaluation of their quality.

METHOD

Research Setting and Sample

To operationalize and test the measurement model of dependence, a franchise system, the automobile distribution channel, was selected as the setting for an empirical study. Because manufacturer's have high power relative to dealers within each channel dyad (Lusch 1976), questions concerning whether power exists as a construct or which member has the greatest power within each dyad are alleviated.

A mail survey of new car dealers utilizing an eight page, self-administered questionnaire was used to gather the data. Unstructured, personal interviews with approximately forty new car dealers and a literature review of (1) previous research in this channel and (2) the general channels literature provided the basis for the questionnaire.

The questionnaire centered on the interaction between the manufacturer, its boundary personnel, and its new car dealers. Each dealer was asked what their primary make of new automobile was in 1978 (i.e., the make which the dealership sold the most units of in 1978). The dealers were instructed to answer the questionnaire based on interactions with their primary make of vehicle.

The sample frame of domestic new car dealers in Indiana, Illinois, and Ohio was obtained from the Indiana Automobile Dealer's Association.
and a private consulting firm. Questionnaires were sent to 944 dealers in a three stage mailing process designed to enhance the response rate attained for the study. Initially, a letter introducing the project was sent to each dealer in mid-February, 1979. A few days later the first wave of questionnaires were sent along with a cover letter. A follow-up questionnaire was sent two weeks later to those who had not responded to the original questionnaire. Each questionnaire was directed to the one member in each dealership having the most important personal contact with the manufacturer and its representatives (i.e., owner, general manager). The final response rate was 46.1% (i.e., 435 returned questionnaires out of 944 dealers in the intended sample) which compares very favorably with those reported in previous empirical studies on interfirm relationships in distribution channels (e.g., Lusch 1976, 47%; Rosenberg and Stern 1971, 35%; Hunt and Nevin 1974, 26%; Brown 1978, 21%; Etgar 1976, 19%; Michie 1978, 16%). Only 12 of the returned questionnaires were unusable due to an obvious lack of involvement on the part of the respondent (i.e., incomplete information). Of the 423 useable questionnaires, 92 were produced on the second wave.

The dealers in the achieved sample parallel the nationwide distribution of dealers on manufacturer make very closely. Additionally, Armstrong and Overton (1977) contend that if first and second wave respondents are similar, the chances of non-response bias clouding a study's results are relatively small. As such, dealers from the two waves were compared on certain dealer demographies (e.g., manufacturer make, sales volume, single or multiple point) and general attitudes and perceptions (e.g., dealer satisfaction, perceived intrachannel
conflict, dealer cooperation) as well as the primary constructs in this study. Based on computing Hotellings $T^2$ statistic for each variable set, no significant differences exist (i.e., $p < .1$) between first and second wave respondents. Thus non-response bias does not appear to be a serious problem in this study.

Operational Measures of Dealer Dependence

Previously, a target's dependence was defined to be a function of a source firm's role performance at two dimensions of the business relationship: (1) the impersonal dimension; and (2) the personal dimension. Manufacturer generated demand and assistances were considered at the impersonal dimension based on pre-study interviews. At the personal dimension, pre-study interviews identified (1) car allocation and delivery and (2) reimbursement for warranty claims and vehicle preparation (i.e., dealer expenses incurred in making a car ready for sale) as two dominant and general customer service issues. Dealers also indicated that the boundary personnel's quality of advice and cooperativeness were important factors in driving their dependence in the channel relationship.

Each dealer indicated how well his manufacturer performs compared to industry average performance on each of the following elements: (1) manufacturer generated demand for the make; (2) cooperativeness of the manufacturer reps; (3) car allocation and delivery; (4) interfirm assistances (e.g., operation manuals, training programs, promotional assistances); (5) quality of advice from the manufacturer reps; and (6) reimbursement for warranty claims and vehicle preparation. Eleven
point scales ranging from -5, "Very Poor," through 0, "Average Performance," to 5, "Very Good," were utilized. Such relative evaluations alleviate the need to ask the dealers separately about the attractiveness of other channel alternatives. Each dealer also indicated the relative importance of each element to its goal attainment on an eleven point scale ranging from 0, "Not Important At All," to 10, "Extremely Important." Each elements' performance score, after weighting by its respective normalized importance rating (Wilkie and Pessemier 1974), is the basic input into the analysis section which follows. 4

EVALUATING THE DEPENDENCE MEASURES

Previously, little attention has been given to reliability and validity considerations surrounding measures used to reflect interfirm power in marketing channels. Only Lusch (1976, 1977) explicitly analyzed the validity (i.e., content and discriminant validity) of his power measures.

In this study, the construct validity of the dependence measures (i.e., whether they actually reflect a dealer's dependence in a dyadic channel relationship with a manufacturer) is of primary interest. As such, the reliability and content, discriminant, convergent, and nomological validity of the dependence measures will be evaluated.

Reliability

Reliability refers to the degree to which measures are free from random error and, therefore, yield consistent results (Peter 1979). A necessary but not sufficient condition for validity of measures is that
they are reliable. As indicated by Peter (1979) and Churchill (1979), Cronbach's (1951) coefficient alpha is the most commonly accepted formula for assessing the reliability of a measurement scale with at least three items. Alpha was calculated to be .789 for the four items posited to reflect role performance at the personal dimension of the interfirm business relationship (i.e., car allocation and delivery, renumeration for warranty claims and vehicle preparation, boundary personnel advice, boundary personnel cooperation). In terms of the two items utilized to reflect role performance at the impersonal dimension, the split-half reliability coefficient after full scale adjustment was .658. In early stages of research, modest reliability in the range of .5 to .6 will suffice (Peter 1979, Nunnally 1967). Thus these results are interpreted to indicate reasonable levels of internal consistency among the items designed to reflect role performance at each interfirm business dimension.

Validity

Content Validity. As indicated by Zaltman, et. al. (1973), content or face validity is the degree to which an operationalization represents the concept about which generalizations are to be made. Nunnally (1967) provides two standards of ensuring content validity: (1) the items used to measure the construct of interest should be representative of the domain of content; and (2) the instrument should be designed using "sensible" methods of questionnaire construction.

The final questionnaire was rigorously constructed based on unstructured personal interviews with approximately 40 new car dealers.
These dealers confirmed that the role performance of their manufacturer at both the impersonal and personal levels was extremely important in driving the level of their dependence in the channel relationship. They also helped to identify the primary elements of manufacturer role performance utilized in the questionnaire. Thus a strength of this research appears to be the content validity of the dependence measurement model.

**Discriminant Validity.** "Discriminant validity refers to the extent to which a concept differs from other concepts" (Lusch 1976). As Campbell and Fiske (1959) indicate, a measure can be invalidated by too high correlations with other measures from which they were intended to differ. Theory suggests two distinct components of a target firm's dependence on a source based upon the source's role performance at the impersonal and personal dimensions of the business relationship. Through use of factor analysis, if the six elements of role performance load on only one factor, halo effects may dominate the measurement. If the six elements load on more than two factors, a more complex conceptualization may be implied or measurement error may dominate.

Confirmatory factor analysis (Joreskog and Sorbom 1973) was employed to assess the discriminant validity of the performance elements. In order to test the nature of the interaction between the impersonal and personal dimensions, orthogonal and nonorthogonal solutions were examined. When non-zero covariances are allowed between the factors, the hypothesized two-factor structure provides an acceptable fit to the data ($X^2 = 11.77$ with 8 d.f., $p < .162$). In the orthogonal solution, the hypothesized factor structure failed to represent the data to an acceptable degree ($X^2 = 60.84$ with 8 d.f., $p < .000$).
These findings indicate, as expected, that a significant degree of correlation exists between the role performances at each dimension. More importantly, based on the nonorthogonal solution, the discriminant validity of the dependence measures is established. The performance elements can, indeed, be distinguished depending upon whether they center at either the impersonal or personal dimension of the business relationship.

To attain operational measures of role performance at each dimension for each dealer, a nonorthogonal factor analysis was utilized. Through a comparison of a number of nonorthogonal solutions, the best solution in terms of the clearest distinction in loadings between the two factors occurred when correlated at .49. Table 1 presents the factor pattern matrix with the loadings of each performance element on each factor which resulted from this solution. It explains 67.4% of the variance in the original six performance elements. At this point, the standardized score on each role performance element was multiplied by its respective factor score coefficient on each factor in computing the operational measures of role performance at the impersonal and personal dimensions.

Convergent Validity. Convergent validity is indicated when maximally different measures of the same concept are highly correlated (Campbell and Fiske 1959). Thibaut and Kelley (1959) indicate that a target's willingness to sever a relationship is an indicator of dependency as it is presumably determined by the value of the current relationship relative to the value of its available alternatives. Cadotte and Stern (1979) also suggest that this may be a reasonable indicator
of a target's dependence. As such, the following item was included in the questionnaire: "What are the chances out of 10 that you would switch to another make if you had the opportunity?" It was expected a priori that this item would be most highly related (in a negative sense) to role performance at the impersonal dimension because this includes the generated demand variable. While not maximally different, at least these alternative dependence measures are substantially different.

The correlation coefficients between this item and role performance at the impersonal and personal dimensions are -.55 and -.40 respectively. Each coefficient is significant beyond the p < .001 level. In each case, the more dependent a dealer is in the relationship based on manufacturer role performance, the lower the chances of the dealer wanting to switch to another make (i.e., sever the present relationship). As expected, the strongest relationship is exhibited between "chances of switching" and role performance at the impersonal dimension. Assurances and, especially, generated demand appear to be the most important factors in driving the relative attractiveness of a particular make.

While the correlations are certainly not as high as one might desire, behavioral measures of complex constructs rarely produce high correlations. Furthermore, as Lusch (1977) suggests, one cannot expect the correlations of multiple item scales with mere single item scales to be extremely high in convergent validity tests. Being the coefficients are of moderate strength, they are interpreted to demonstrate adequate levels of convergent validity for the dependence measures.
Nomological Validity. Nomological validity refers to how well a measure relates to measures of other constructs to which the primary construct is theoretically related (Campbell 1960). As Churchill (1979) points out, although the observables may all relate to the same construct, this does not prove that they relate to the specific construct that motivated the research in the first place. Thus an analysis must be undertaken to determine if the dependence measures developed herein behave as expected in a theoretical sense.

Churchill (1979) also indicates that because the items related to the major constructs in the nomological validity test ordinarily are not validated themselves, an evaluation of measure's nomological validity is based on the consistency of relationships across a group of items. As such, five items were included in the questionnaire to test the nomological validity of the dependence measures. Dealer's responded to the following statement on a seven point scale ranging from 1, "Strongly Disagree," to 7, "Strongly Agree": "I am generally satisfied with my dealership's overall relationship with the manufacturer." By definition, a target who is highly dependent on a source has a relatively high level of goal attainment through their relationship. Given a target's goal attainment is high, the chances that he is satisfied with the overall business relationship would also appear to be high as suggested by Hunt and Nevin (1974) and Lusch (1977).

Dealer's also responded to the following item: "The manufacturer is very interested in helping me make my dealership profitable." A dealer who is highly dependent in a relationship based on high levels
of goal attainment may perceive a relatively high level of goal compatibility to exist in the relationship. At the very least, any goal incompatibility which exists in such cases would not have the impact that it would in situations where dealers have low levels of goal attainment (i.e., low dependence). As Stern (1977) indicates, given relatively high levels of goal compatibility, the source firm may be perceived as being interested in the target firm's profitability as a result.

Finally, dealers indicated the degree to which they agreed or disagreed with manufacturer or manufacturer representative recommendations on three dealership decision issues: (1) new car inventory levels; (2) percentage of parts purchases from the manufacturer; and (3) warranty claims. Seven point scales ranging from 1, "Strong Disagreement," to 7, "Strong Agreement," were used in their measurement. As explained by Pfeffer and Salancik (1978, p. 195), "The target's dependence reflects how much the source firm must be taken into account and, also, how likely it is that it will be perceived as important and considered in the target's decision making." As such, the probability of relatively congruent opinions existing on dealer decision issues may be high in cases where the dealer is highly dependent on the manufacturer. Additionally, a source who facilitates relatively high levels of target goal attainment may attain a high degree of credibility thereby promoting relatively congruent perceptions and/or opinions of appropriate marketing strategies in the relationship (Bonoma 1976).

A priori, it was felt that dependence based on role performance at the personal dimension would exhibit the most dramatic relationships
with these variables. Each primarily centers at considerations surrounding interfirm interaction where the boundary personnel's job responsibilities are centered.

Table 2 exhibits the partial correlation coefficients between the "satisfaction," "interest," and "congruence of opinion" variables and the dependence components. Each coefficient is in the expected direction (positive), significant at the $p < .001$ level or beyond, and at a moderate level especially in relationships involving dealer dependence based on manufacturer role performance at the personal dimension. As expected, dealer dependence based on role performance at the impersonal dimension has relatively weak relationships with such "personal centered" variables. Even though the consistency of these results are encouraging, until the theoretical basis underlying these relationships becomes well established, no conclusive claims concerning the nomological validity of these measures can be made.

[Place Table 2 About Here]

CONCLUSIONS

Previous measurement approaches used to reflect levels of interfirm power in the marketing channels literature were reviewed. Given the importance of distinguishing between power (i.e., potential influence) and influence (i.e., actual effect on behavior) in a channels context, the dependence approach appears relatively attractive.

A measurement model of a source firm's power based on a target firm's dependence in their dyadic channel relationship was next developed. A source firm's role performance at the impersonal and personal
dimensions of a channel relationship were seen to drive the level of a target's dependence and thus the source's power in the channel dyad.

The measurement model was tested empirically in the automobile distribution channel. Operational measures of dependence based on role performance at the impersonal and personal dimensions were shown to be adequate in terms of internal consistency and appear to have reasonable levels of content and discriminant validity. Promising levels of convergent and nomological validity were also indicated for these measures, although based upon (1) shared method variance resulting from comparisons of self-report measures from the same subjects and (2) an unproven theoretical framework, these results are certainly not conclusive.

Emerson (1962, p. 32) is certainly correct when he suggests... "there is no one proper operational definition for a theoretical concept." However, the general logic of basing measures of dependence on a firm's role performance appears widely applicable to a variety of channel systems as well as varying levels within a channel. Only the specific elements of a firm's channel role may vary across situations. Needless to say, however, future research in this area must further evaluate the measurement rationale of dependence developed herein while testing and developing new and extended measurement approaches. One improvement would be to have a true dyadic focus by attaining the perceptions of each party on the other's respective role performance. Another extension is suggested by Stern and Heskett (1969, p. 303) "... current power is a function of the use to which previously held power has been put in the process of managing vertical relationships in a
channel (interorganization) system." By adopting a longitudinal focus, the impact of the use of power on its subsequent levels could be analyzed.

Ray (1979, p. 5) states, "Each measurement study in an area only contributes to the development of measures rather than either proving or disproving their value." This is an excellent summary statement of the nature and basic contribution of this paper. While this paper has raised several conceptual issues and presented measures which may prove useful in future studies, hopefully its primary contribution will be to serve as the basis for future measurement studies on interfirm power. As Ray (1979) indicates, by adopting this exploratory or more open point of view (i.e., each measurement study in an area merely contributing to the development of measures), more measurement studies may be performed and a tradition of measurement research in marketing may be established.
FOOTNOTES

1 Within the paper, the "source" represents a firm which is making a specific influence attempt on another firms' behavior and/or decision making. The "target" represents the recipient of this influence attempt. It is recognized that each firm within any dyadic channel relationship may attempt to attain influence on the other's behavior and/or decision making over time (Beier and Stern 1969, Etgar 1976).

2 Influence and control are seen as synonymous constructs in this research.

3 Guiltinan (1977) recognizes a degree of overlap exists between the bases of power rationale and dependence theory. Like Emerson (1962), he suggests that dependence theory is the more encompassing and general approach. This reasoning is also supported, in part, by Heskett, et al. (1970) who indicate that the strength of a source firm's various bases of power may be positively related to the level of a target firm's dependence in their dyadic channel relationship. El-Ansary (1975) uses items to reflect a target firm's dependence which were originally included in El-Ansary and Stern (1972) to reflect a source firm's bases of power.

   Because of this apparent overlap, the measurement model of a source firm's power developed in this study and described later in the paper is built solely around dependence theory. Such an approach has considerable precedent in the organizational behavior literature (c.f., Thompson 1967, Benson 1975, Pfeffer and Salancik 1978).

4 Through prior analyses, it was determined that the addition of importance weights to the performance ratings consistently increased the explanatory power of the dependence measures.

5 In relating these variables to the dependence measures, it was necessary to control for five variables in the analysis. Channel policies may vary across manufacturers based on such factors as market position, tradition, mores in an organizational system, and personnel policies. Thus manufacturer make may have an important effect on the quality of the boundary personnel and their use of varying influence strategies with dealers. Dealers who are located in multiple point trade areas primarily in or around large metropolitan areas may be pressured by boundary personnel to a greater extent than single point dealers due to volume considerations and intramake competitive factors. If a dealer has more than one manufacturer make, each with relatively equal sales volume, he may not be very dependent on any one make and may, therefore, resist influence attempts to a great extent. High sales volume dealers may have more potential influence over the boundary personnel than low volume dealers. Finally, a dealer who belongs to a twenty dealer group (i.e., a number of similar dealers from across the country who get together to discuss business operations and marketing strategy) may be relatively progressive and have group support in his resistance to various manufacturer policies. The items used to measure these variables are available upon request.
FIGURE 1
A Model of the Intrachannel Exchange Process
Between Two Firms: The Basis for Interfirm Dependencies

The Corporate Body of Firm J;
The Impersonal Dimension:

Marketing Strategy (C1)
- Product
- Price
- Place
- Promotion

Assistances (C2)
- Operations oriented
- Promotional aids
- Training programs
- Financial oriented

The Boundary Personnel of Firm J;
The Personal Dimension

Customer Service Issues (C3)
- Product allocation
- Product delivery
- Order Processing

Advice on Decision Making (C4)

Cooperation in Contacts on
Interfirm Problem Areas (C5)

Market Sales Potential (C8)

Firm I

Marketing Strategy (C6)
- Product
- Price
- Place
- Promotion

General Operations (C7)
- Financial
- Personnel
- Management

Demand Generation

Product, Service, and Assistance Flows

Behavioral Contacts Between the Firms

Product, Service, Assistance, and Communication flows between Corporate Headquarters and Boundary Personnel.
TABLE 1

RESULTS OF A NONORTHOGONAL FACTOR ANALYSIS
OF THE ROLE PERFORMANCE ELEMENTS

<table>
<thead>
<tr>
<th></th>
<th>Factor Pattern Matrix</th>
<th>Communalities&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 2</td>
</tr>
<tr>
<td>Manufacturer Generated Demand</td>
<td>0.93</td>
<td>-0.09</td>
</tr>
<tr>
<td>Interfirm Assistances</td>
<td>0.75</td>
<td>0.16</td>
</tr>
<tr>
<td>Cooperativeness</td>
<td>0.03</td>
<td>0.83</td>
</tr>
<tr>
<td>Quality of Advice</td>
<td>0.04</td>
<td>0.83</td>
</tr>
<tr>
<td>Car Allocation and Delivery</td>
<td>-0.06</td>
<td>0.78</td>
</tr>
<tr>
<td>Reimbursement for Warranty</td>
<td>0.02</td>
<td>0.73</td>
</tr>
<tr>
<td>Claims and Vehicle Preparation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>The square of a pattern coefficient represents the direct contribution of a given factor to the variance of a variable. On the other hand, the commonality of a variable consists of their direct as well as indirect or joint contributions (Nie, et. al. 1975).
# TABLE 2

A TEST OF THE NOMOLOGICAL VALIDITY OF THE DEPENDENCE MEASURES

<table>
<thead>
<tr>
<th></th>
<th>Dependence Based on Role Performance at the Impersonal Dimension</th>
<th>Dependence Based on Role Performance at the Personal Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealer Satisfaction</td>
<td>.28&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>.57&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Manufacturer Interest</td>
<td>.36&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.50&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

**Agreement with Recommendations on:**

<table>
<thead>
<tr>
<th></th>
<th>Dependence Based on Role Performance at the Impersonal Dimension</th>
<th>Dependence Based on Role Performance at the Personal Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Levels</td>
<td>.14&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.34&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Parts Purchases</td>
<td>.16&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.29&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Warranty Claims</td>
<td>.20&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.47&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>To be read: The partial correlation coefficient between the dealer's satisfaction with the overall business relationship and role performance at the impersonal dimension is .28.

<sup>b</sup>p < .001.
REFERENCES


Ray, Michael (1979). "Introduction to the Special Section: Measurement and Marketing Research--Is the Flirtation Going to Lead to a Romance?" Journal of Marketing Research, 16 (February), 1-5.


