Control in a Distribution Channel: a Field Study.

Robert A. Robicheaux

Louisiana State University and Agricultural & Mechanical College
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CONTROL IN A DISTRIBUTION CHANNEL:
A FIELD STUDY

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The Department of Marketing

by

Robert A. Robicheaux
B.S., Louisiana State University, 1969
August 1974
DEDICATION

To my Sister

Celeste "Tudy" Robicheaux

(1951 - 1969)

The lovliest of persons.
This study has given me the opportunity to enlist the advice and guidance of six scholars who served as my dissertation committee. To them all I offer a sincere expression of gratitude. The chairman of that committee, Dr. Adel I. El-Ansary, provided the initial impetus and continuing guidance for this dissertation. Drs. James Underwood, Fred Endsley, Gary Ray, Raymond Lesikar and Michael Peters each offered his individual expertise throughout my graduate studies.

Expressions of gratitude are due to:

Mrs. Nancy Wax -- a skilled secretary for typing this manuscript and for constantly reminding me of the realities of life;

Mr. Roy H. Gonzales -- for the use of his copying machines which reproduced the many drafts of this study and for the many fishing trips which were enjoyable and relaxing.

Above all others, however, my warmest expressions of love and gratitude are extended to the three people who have had and continue to have the greatest influence upon my life:

To my wife, Cynthia -- for her unwavering faith, love, inspiration and patience throughout the last four years;

To my mother, Celeste -- who reared five children with more love and selflessness than would seem possible to most; whose first concern always was for her children's future happiness; her devotion will never be forgotten;
To my father, Dalferes Frank -- who truly sacrificed throughout his lifetime to give opportunities to his children which were far and above what was expected; who instilled in his family a driving quest for education and accomplishment; his sense of duty and personal inspiration can never be forgotten.

By all which is right, these last three names should be on the title page of this dissertation.
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ABSTRACT

The purpose of this study was to contribute to the marketing scholar and practitioner a better understanding of the nature of control in distribution channels. First, a conceptual model which explains the nature of control over marketing variables between firms on different levels in distribution channels was developed. Second, a methodology was proposed for empirically examining the relationships hypothesized in the proposed model of channel control. Finally, independent carpet retailers were surveyed to examine the methodology and to verify the middleman portion of the conceptual model of control.

Control in distribution channels results from a complex process of member interaction. The level of control achieved by one firm over specific marketing activities of another firm on a different channel level is determined by the former's power (potential to exert influence) as well as its desire to influence the latter. The level of control that is achieved is also dependent upon the controlled firm's tolerance or willing acceptance of the controlling firm's influence. Levels of organizational performance and key executive satisfaction are both affected by the amount of control achieved in enterprise channel relationships. Key executive satisfaction with channel relationships and organizational performance are two interdependent variables, however. Finally, the
controlled firm's tolerance for other control is affected by the satisfaction of its key executives with and the firm's performance that results from its enterprise channel relationships.

The model of channel control upon which this study was based is dyadic and consists of payoff and tolerance functions for each channel member. It is an extension of the work of Professor Louis P. Bucklin. A payoff function defines a channel member's perceptions of the profits that would accrue to him at each of several levels of relative control over a marketing variable; e.g., resale pricing. A tolerance function defines the maximum level of relative control by another firm in the channel to which a channel member willingly accedes at each level of payoff. The intersection of each member's payoff and tolerance functions defines the maximum level of relative control that can be achieved by the controlling firm.

The model was tested among a group of carpet retailers in south Louisiana who sold a well known, national brand of carpet and were supplied by a common independent carpet and rug distributor. A single channel issue, resale price control, was examined. The dealers surveyed did not, on the average, believe that their profits would be significantly affected if the carpet distributor adopted a more restrictive resale pricing policy. However, there were significant differences among individual dealer's average payoff perceptions. This suggests that certain classes of dealers had payoff perceptions significantly different from the perceptions of other classes of
Measures were also obtained of the dealers' attitudes toward hypothetical enterprise channel situations. For each situation the dealers were asked to assume that: (1.) the supplier adopted a particular resale price policy (five policies were used); and (2.) their annual net profits before taxes rose, fell or stayed the same (five levels of dealer annual net profit changes were used). The study found the dealers to be favorably disposed to opportunities to increase their profits, but negatively disposed to situations of greater distributor resale price control. Dealer resistance to distributor control of retail carpet pricing was found to increase at an increasing rate at successively higher levels of distributor relative control. This finding suggests that the dealers surveyed would resist distributor demands for retail price control beyond a relatively high level of control no matter what economic rewards the supplier offered.
Chapter 1

CONTROL IN A DISTRIBUTION CHANNEL: AN OVERVIEW

Increased attention was given during the 1950's and 1960's to the examination of the distribution channel as a social organization with behavioral as well as economic dimensions. Behavioral concepts that received the greatest attention by social scientists interested in channel systems included power, control, conflict, cooperation and communication. After more than a decade of armchair theorizing, empirical research is currently being undertaken to verify theories of behavioral dimensions of distribution channels.


This study focused upon the operationalization and verification of a conceptual model of channel control relationships. Based upon theory and empirical research in many disciplines, a conceptual model was developed which relates (1.) middleman and supplier perceptions of payoff at various levels of relative supplier control of marketing strategy issues and (2.) middleman and supplier feelings of burden and sacrifice incurred from acceding to the other’s relative control. A unique research methodology was developed to operationalize and test the conceptual model. Finally, the model was subjected to empirical testing among a group of retail carpet dealers.

A Brief Historical Synopsis of Control in Distribution Channels

To place this study in perspective, it is first appropriate to highlight a number of major strands of thought dealing with the concept of control in distribution channels. Chapter 2 provides a much more detailed analysis of the relevant literature than is warranted in this preview.

Concern for control among economic organizations participating in channels of distribution first emerged in the drug industry with manufacturer and reseller interest in resale price maintenance during the late nineteenth century. The development of branded drugs

weakened the positions of pharmacists vis-a-vis drug manufacturers and led to demands by drug manufacturers that they control retail prices to ensure spatial availability.³ A series of disputes over manufacturer control of territories, customers, resale pricing, brokerage fees, and other strategic issues in many other industries took place during the early twentieth century.⁴

Second, growth of mass retailers in the 1940's and 1950's resulted in challenges to the manufacturer's traditional role as channel leader. The development of chain and department stores as well as retailer trade associations led to "battles for channel control."⁵ The changing structure of power and control within industries became a topic of interest to researchers.⁶

The third major strand of distribution channel thought emerged in 1949 when Ralph Breyer investigated the distribution


channel as a total system or group. Although mainly concerned with channel cost analysis, Breyer's conceptual analysis of the distribution channel focused upon control of the channel as a group. Breyer defined control as "...the exercise of governing influence." He emphasized the possibility for achieving channel efficiency through channel management. Further, he recognized that channel control is needed for channel management and coordination. "Certainly, if we are to improve the coordination of marketing, such control must be pushed well beyond the confines of the single ownership whenever the opportunity presents itself."

A fourth approach was initiated by Wroe Alderson in 1957. He indicated that some mechanism for coordination is essential for even the simplest behavior system if the system is to function efficiently. Alderson conceived of distribution channels as organized behavior systems since they are preplanned and coordinated, and he contended, as did Breyer, that the effective building and managing of distribution channels require the emergence of system leadership through the exercise of control.

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8 Ibid., p. 49.

9Ibid., p. 270.

"The exploration of behavioral and economic theories as a basis for obtaining the necessary system coordination represents the final literature theme relevant to channel control."\(^{11}\) Stern and others laid the conceptual foundations for the exploration of channel system power, conflict and communication.\(^ {12}\) More recently, researchers have begun to propose and test methodologies for the empirical verification of distribution channel theories.\(^ {13}\)

Power and its measurement in distribution channels has recently attracted the attention of several researchers. In 1971, El-Ansary proposed and tested a methodology for measuring power in a distribution channel. His research indicated that in a heating and air-conditioning equipment supply channel, power was dispersed and a locus of power did not exist.\(^ {14}\) Wilkinson used a different methodology to measure power relations between firms in a channel system.\(^ {15}\) He obtained measures of channel members' self-perceived and attributed power and usual constraining influence. Like El-Ansary, he related measures of dependence and sources of power. Using a slightly modified version of El-Ansary's methodology, Hunt and Nevin

\(^ {11}\) Bucklin, op. cit., p. 40.
\(^ {12}\) Stern, op. cit.
\(^ {14}\) El-Ansary, op. cit., p. 167.
\(^ {15}\) Wilkinson, op. cit.
in 1974 attempted to measure power in a franchise channel system. They concluded that an identifiable power structure did exist in the franchise system.

Control is a more nebulous concept than power and has been largely ignored by students of management and marketing. Control is a general and underlying concept that helps bring together a wide variety of issues which are traditionally treated as discrete topics; e.g., leadership, power, authority, conflict and cooperation. Only recently have organization theorists begun to deal with the concept of control. The "human-relationists" avoided explicit references to social power and control "...partly because these terms carried connotations that were inconsistent with the ideal of the harmonious, conflict-free organization." The sociology, political science and organization theory literature on control and its measurement blossomed during the 1960's.

At this point, there is little theory and less empirical research dealing with control in distribution channels. In 1973, Bucklin proposed a theory of channel control which represented an initial conception in this area of marketing theory. However, his model was incomplete and suffered from several fallacious

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16 Hunt and Nevin, op. cit.
17 Tannenbaum (ed.), Control in Organizations, p. vii.
18 Ibid., p. 7.
19 Bucklin, op. cit.
assumptions about the nature of middleman-supplier control relationships. Bucklin's model of channel control is critically reviewed in the second chapter.

As yet, no other efforts have been made to operationalize the concept of channel control. This study goes beyond the measurement of control, however, and examines the relationship between channel control and perceived channel member performance and satisfaction.

The Objectives of this Study

The objectives of this study were:

1. to develop a conceptual model which explains the nature of control between middleman on different levels in a distribution channel;

2. to develop a methodology for empirically testing the relationships hypothesized in the conceptual model of retailer-supplier control;

3. to apply the methodology to a group of distribution channel members to:
   a. examine the methodology;
   b. verify the middleman portion of the conceptual model.

The research methodology was designed to measure the perceived payoff (profit) of a group of middlemen (retail dealers) at various levels of relative middleman-supplier control of a crucial marketing strategy issue. The methodology also measured the middlemen's tolerance for relative supplier control at various levels of payoff.
or profit.

The Scope of the Study

The conceptual scope of this study was delimited by the objectives stated in the previous section. The study was designed to develop a conceptual model which explains the nature of control in a distribution channel, to develop a methodology to test the conceptual model and to apply the methodology to an enterprise channel group.

The results of this study are not generalizable beyond the channel group surveyed. The empirical results explain the nature of control over a single marketing strategy issue, resale pricing, and are not indicative of an aggregate model of control over all marketing strategy variables.

The research was conducted in a carpet and rug supply channel. The market area surveyed was Baton Rouge and New Orleans, Louisiana. The product of the channel studied was a nationally branded line of carpets of a major carpet and rug manufacturer sold to ultimate consumers. The channel group was comprised of retail carpet and rug dealers in the market area who carry the carpet and rug manufacturer's branded merchandise.

Research data includes responses from all retail carpet

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20 The concepts of payoff and tolerance are defined later in this chapter. A detailed discussion of each of these concepts is presented in the third chapter along with a full discussion of the proposed conceptual model of channel control. The concepts are operationally defined in Chapter 4.
dealers who agreed to participate in the study. All dealers in the
market area who carried the major manufacturer's brand of merchandise
were asked to participate. Responses were sought from the retail
store owner or manager, whichever had the greatest interaction with
the carpet supplier. The data was obtained through a structured-
direct questionnaire. The details of the sampling procedure are
presented in the fourth chapter.

A Brief Indication of the Justification
for this Study

An investigation of distribution channel control has both
theoretical and practical value. It contributes to the development
of marketing theory, a more efficient allocation of scarce economic
resources, the viability of small businesses and the ability of
businessmen to achieve their profit and control objectives. In the
following sections, evidence is presented which indicates the
justification for attempts to develop channel control theory and to
empirically examine the theory for validity and relevance.

Marketing Theory Needs. As a relatively young discipline,
marketing lacks a rich body of theory. Marketing theory is needed
by marketers to guide them in their complex decision-making activi-
ties which depend upon their ability to describe, explain and predict
market behavior.21 The paucity of marketing theory provides justifi-
cation for serious efforts to develop theory in marketing.

21George Fisk, "The Role of Marketing Theory," in George
Fisk (ed.), New Essays in Marketing Theory (Boston: Allyn and
Marketing channels are the only organizations which are uniquely designed and operated to serve the purposes of marketing. The structure and operating characteristics of the organizational sets which comprise marketing channels are, therefore, central topics which must be recognized in the development of marketing theory.\(^\text{22}\)

Administration and organization theories have too long been relied upon to guide decision-makers in their interorganizational relations. Administration and organization theorists have concentrated on the single organization and have largely ignored the need to provide unique and relevant guidelines to administrators of systems of separate organizations.\(^\text{23}\) It is suggested that some of the contributions by administration and organization theorists may not be relevant for administering superorganizations or systems of separate organizations.

New theories which deal with organizations (e.g., channel groups) as social systems rather than as hierarchies of authority relationships are sorely needed. Paradigms are needed to explain how autonomous social systems and organizations affect one another. Specifically, theories concerning the exercise of power to achieve control and coordination where formal authority is absent must be developed.\(^\text{24}\)

\(^{22}\)Ibid., p. 3.


Stern indicated the very crucial need to develop theory for interorganization relations.

The use of current management theories and modern decision tools which contribute to rational intrafirm management decisions: (a) fosters narrow, self-oriented goal-definitions, and (b) often results in decisions which impair the performance of individual firms within a group of inter-related firms, thereby diminishing the performance of the entire system.25

Bucklin also has indicated that, at least with regard to channel control, current marketing theory lags current needs.26 To some extent, all channel systems are administered or managed — even if the system operates in an environment in which influence is dispersed equally among all participants. However, there are few contributions by marketing theorists that yield a better understanding of channel phenomena.

Resource Allocation Benefits. The exercise of channel control affects the channel's economic performance. The earlier review of the works of Ralph Breyer and Wroe Alderson indicated that channel coordination through control offers the potential for increased efficiency. This implies an improvement in the allocation of scarce economic resources.27

It is important to consider the possible effect of channel


27Supra, pp. 3-4.
control and coordination upon channel performance and the resulting allocation of scarce resources among channel members and consumers in a society. Slater investigated the impact of market process coordination in underdeveloped countries upon the level and distribution of income within a community. Based upon research in San Juan, Puerto Rico, Recife, Brazil, and La Paz, Bolivia, Slater concluded that market coordination contributed to the twin goals of economic development; i.e. it increased real income and redistributed real income to yield a broader base of effective demand.28 Thus, study of the exercise of potential influence (authority and/or power) to achieve channel control and coordination is crucial if one is to achieve an optimum or even satisfactory allocation of scarce economic resources.

Survival and Viability. Theory and research which seeks to describe, explain and/or predict the effects of channel control is justified to the extent that it contributes to the survival of the small business firm. Supplier control of certain marketing strategy issues throughout a channel system can be justified on the grounds that the exercise of governing influence may actually protect smaller firms from vicious intra-channel competition and provide them with better programs for inter-channel competition. Inasmuch as the relationship between manufacturers and channel middlemen is one of

mutual interdependence, the survival and viability of the channel and its members is also interdependent.

Manufacturers desire control over the marketing practices of middlemen for several reasons. First, when a manufacturer perceives that his middlemen cannot make decisions to best serve their own much less the manufacturer's interests, then the manufacturer may perceive his control to be justified. Second, because most channel systems are comprised of middlemen with different goals, resources and capabilities, independent decisions of the middlemen to optimize their individual objective functions may yield suboptimal system performance. Finally, whenever strong inter-channel competition (e.g., inter-brand competition) threatens the very survival of the manufacturer as well as his middlemen, manufacturers may perceive their control over middlemen to be necessary. For example, the development by Schwinn and Company of a distribution system characterized by a high degree of manufacturer control of distributors and retailers was based upon a desire "...to enable its independent dealers to compete on an equal basis with the other brands of bicycles on the market." The objective of this control by the manufacturer was to minimize competition among the Schwinn

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dealers and to encourage them to compete with middlemen who carried other brands.

There is also a desire among channel middlemen (especially large wholesalers, large retailers and retailer cooperatives) to control marketing strategy issues throughout the channel. A particular middleman resists control by manufacturers and other middlemen to the extent that he perceives such control to limit his ability to achieve his unique objectives. Some middlemen prefer to control marketing strategy variables at several channel levels because they are physically closer to the consumer and believe, therefore, that they have a better opportunity to monitor the consumers' changing wants and needs. Craig and Gabler earlier argued that in a long-run buyer's market, a retailer-guided system would be most effective in satisfying consumer wants. To the extent that market success depends upon the ability of retailers to modify their marketing mix elements to satisfy rapidly changing consumer desires, their desire for control is justified.

The decision by a particular middleman or manufacturer to control or to be controlled with regard to any specific marketing strategy issue should be based upon some analysis of differential capability. Whichever channel member can make decisions which

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31 Little, op. cit., p. 33.


contribute the most to the achievement of all members' objectives should lead the others in their decision-making. Such leadership should contribute to the viability of organizations which are incapable of making effective independent decisions.

**Profit and Control Objectives.** Business organizations typically strive to achieve profits that will at least enable them to maintain the organization's existence. A secondary objective of business organizations is to maintain organizational autonomy or self-control so as to be in a position to protect the organization's future. These two objectives are often in conflict, however. To achieve the first, entrepreneurs sometimes must relinquish control.

In economic theory, market structure (concentration ratios, the relative sizes of competing firms and the number of competing firms) has served as an indicator of market control. With regard to channel systems, economic theory implies that in the absence of monopoly power throughout a channel system, open market forces would determine business practices and should also prohibit the establishment of a locus of control at any one channel level. Stern's research of the wood household furniture industry led to a different conclusion, however. That industry is bilaterally competitive; i.e. low concentration ratios at all channel levels. Stern found that a locus of channel control does exist at the retail level "...because furniture retailers have gained the greatest influence over the

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final sale of products in the industry." This finding reflects the tendency of firms to exercise their potential to achieve control; they exercise their power as well as their limited authority to accomplish both profit and control related objectives.

On an individual channel group level, there are advantages to be gained by all channel members by channel control and direction. Prehoda has indicated that there are basically two possible approaches to achieving goals given basic technological or economic capabilities. One is an evolutionary or "trial and error" approach. The second is a conscious, planned effort to achieve optimal results. Applying this conception to distribution channel systems, Bowersox and McCarthy postulated that peak system performance can be achieved faster in planned (and coordinated) channel systems. In addition to proposing that planned systems achieve peak performance faster, Bowersox and McCarthy cited evidence that a planned and more integrated distribution channel operates at from one-third to one-half the cost of channels using an evolutionary and less integrated approach. These findings parallel Stern's assertion that "...inter-

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35 Ibid., p. 17.
organization management, once accomplished, can achieve effective
cchannel performance and a more efficient allocation of resources
among channel members." 39

The Basic Definitions for this Study

It is necessary to briefly define the terms used throughout
this study. The concepts of control, payoff and tolerance are
defined in greater detail in the third chapter and their operational
definitions are presented in the fourth chapter.

Distribution Channel. Several authors’ conceptions of the
distribution channel are incorporated in the following definition.

A channel of distribution is a superorganization or a system
made up of interdependent institutions and entities that
evolve and interact under technical-economic, social-
behavioral and societal constraints in order to perform
the marketing flows -- ordering, physical possession,
ownership, negotiation, payment, financing, promotion, and
risking -- needed for the transfer of goods from the
producer to the final consumer. 40

Marketing Channel Type. This is the traditional view of a
channel as an ordered series of specialized marketing units. 41 For
example, if a manufacturer sells directly to mass retailers and also
to regional wholesalers, then the manufacturer utilizes two marketing
channel types.

39 Louis W. Stern, "Channel Control and Inter-Organization

40 Adel I. El-Ansary, Distribution Channels: The Management
of Socioeconomic Systems, to be published in 1975.

41 Breyer, op. cit., p. 279.
Enterprise Marketing Channel. A channel which is conceived in terms of specific independently-owned business or economic units is referred to as an enterprise marketing channel. 42 A manufacturer who sells directly to 250 large retailers and to 2000 smaller retailers through twenty wholesalers has 2,250 enterprise marketing channels.

Channel Level. Channel levels refer to the number of agency types in a particular channel sequence. 43 For instance, a manufacturer-consumer type channel has two levels. A manufacturer-wholesaler-retailer-consumer type channel, on the other hand, has four levels.

Channel Group. For the purpose of this study, a channel group was defined as any group of independently owned enterprises that have a common interaction with a firm on another channel level. For example, if twenty retailers are all supplied directly from a single manufacturer, then the twenty retailers comprise a channel group.

Influence. An act of influence was defined as any behavior that produces an effect in behavior, psychological state, or any

42 Ibid., p. 19.

other condition. This definition of influence recognizes that an attempt to influence another person or group may have an effect that is contrary to the intent of the influencing agent.

**Control.** Control was defined as the ability to predict events and achieve desired outcomes. In terms of influence, one person or group has control over another if influence is sufficiently strong that the cycle of desired behavior will be completed and any resistance or counterinfluences will be overcome in the process.

This conception of control is consistent with three major marketing theorists' earlier conceptions. Helmy Baligh described channel control in the following manner:

A firm on one level of the channel...is said to control a firm in another level...if it makes, participates in or influences some decisions of that firm... The extent to which one firm controls another is determined by the proportion of the latter firm's decisions which the former makes, and by the amount of influence on those decisions that it has.

Louis W. Stern offered a narrower conception of channel control. He defined channel control as "...the ability of a member of a marketing channel for a given product (or brand) to stipulate

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45 Ibid.

marketing policies to other channel members."\(^7\)

Most recently, Louis Bucklin defined channel control as "...the extent of middleman compliance to the supplier's commands."\(^8\) This conception narrowly defines control from a supplier's perspective but is most consistent with the definition of control that was used throughout this study; i.e. control is the ability to predict events and achieve desired outcomes.

**Relative Control.** Relative control was defined as the amount of control achieved by a single channel member over the activities of another member compared to the total amount of control achieved by both in the enterprise marketing channel. This definition of relative control is consistent with the views of several social scientists who suggest that the total amount of control in a system is not fixed in amount and system members are not engaged in a zero sum bargaining game for control.\(^49\) Several authors indicate specific "mechanisms" that can be utilized to increase the total amount of control.

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\(^8\) Bucklin, *op. cit.*, p. 42.

control in a system.  

The relevant feature of a dyadic channel relationship for the purpose of this study is not total control. Rather, the relative amount of control achieved by channel members engaged in an enterprise channel relationship is more indicative of the channel member's ability to predict events and achieve desired outcomes. In a middleman-supplier enterprise marketing channel, if the middleman's control increases by some absolute amount but is matched by an equivalent increase in the supplier's absolute amount of control, then there is no change in either's ability to influence the other.

**Power.** Power was defined as the capacity to exert influence. This definition clearly distinguishes power and control in terms of influence. Control includes those influence attempts which result in the effect intended by the influencing agent. Power, on the other hand, is the potential to exert influence. Power is characteristically backed by the means to coerce compliance. If a channel member has the potential for making an influence

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^51 Katz and Kahn, op. cit., p. 220.
attempt and the means to coerce compliance or punish noncompliance, then he has power.

**Authority.** Authority is legitimate power.\(^{52}\) It is the prescribed right to affect behavior which is accepted by organization membership.\(^{53}\) This definition is consistent with Barnard's concept of authority which minimizes the influence of the organization hierarchy in defining authority. Barnard defined authority as "...the character of a communication in a formal organization by virtue of which it is accepted by a contributor to or 'member' of the organization as governing the action he contributes."\(^{54}\)

**Channel Leadership.** Channel leadership was defined as the exercise of authority and/or power to intentionally affect the behavior of other channel members to cause them to act in a manner that contributes to the maintenance or achievement of a high level of channel efficiency. This definition of channel leadership is synonymous with Breyer's concept of channel coordination.\(^{55}\)

The concepts of power, authority, control and leadership were crucial to this study and required clear differentiation.

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\(^{52}\) Ibid.


\(^{55}\) Breyer, *op. cit.*, p. 270.
Figure 1.1 presents a graphic representation of the interrelationships among the four concepts. It is shown in this process model that power and authority are inputs to the process of channel leadership which results in some degree of channel control.

![Diagram of Figure 1.1](image)

Figure 1.1
A Process Model of Power, Authority and Control

Authority is a subset of power in terms of channel member influence. A channel member's power reflects his capacity to influence other channel members. Authority is defined as legitimate power or the prescribed right to affect behavior which is accepted by organization members. Thus, a channel member's authority over other members will always be less than or equal to his power over them. When a channel member's authority is equal to his power over another or others, then an increase in his authority will increase his power. However, his power can be increased via sources of power other than authority; e.g., coercion, reward, referent and/or expert bases of power.

Channel control, which was defined as the ability of a
channel member to predict events and achieve desired outcomes in his relations with other channel members, is achieved through the exercise of his authority and/or power. In other words, the process of channel leadership results in some degree of channel control.

**Power Structure.** Emerson defined the power structure of a system as the rank order of system members' respective power or capacity to influence one another. The power structure of a distribution channel was defined for this study as the rank order of channel members' respective capacities to influence each other.

**Power Domain.** The set of persons or organizations over whom some other person or organization exercises power is the domain of the latter's power. If a manufacturer exercises his power over all retailers in his manufacturer-retailer type marketing channel, then those retailers represent the domain of the manufacturer's power.

**Channel Issue.** Cartwright defined a power scope as a specific issue over which one system member may exercise his power over other members. A channel issue was defined for this study as a specific area of marketing strategy over which the power of one channel member

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58 Ibid.

may be exercised over other channel members.

**Issue Weight.** For the purpose of this study, issue weight referred to the perceived importance of each channel issue to the individual firm.

The concepts of power domain, channel issue, and issue weight are best explained through an example. A particular supplier may have the ability to influence certain marketing strategy decision variables of his middlemen. The strategy areas over which he has power may include resale pricing, length of order cycle and minimum order quantity. The middlemen represent the supplier's power domain. The three strategy areas represent channel issues. If the middlemen feel, on the average, that on an importance scale of one to five: (1.) the resale pricing issue is most important (score of 1); (2.) the minimum order quantity issue is second in importance (score of 3); and (3.) the length of the order cycle is least important (score of 5), then the scores represent the issue weights.

**Payoff.** Payoff was defined as the profits that are perceived to accrue to an individual middleman or supplier as the result of engaging in an enterprise marketing channel relationship. Payoff may be stated in absolute dollar terms (e.g., gross or net dollar profit), as a ratio (e.g., percentage return on inventory investment or percentage return on total investment, or as a change in the dollar or ratio measures. In any dyadic channel relationship (i.e. a single supplier and a single middleman), the two parties receive some economic reward, payoff or profit, which may be positive or
negative. An individual's behavior is a consequence of his perceptions of situations, however. Therefore, perceived payoff was deemed a crucial characteristic that affects enterprise as well as individual behavior. 59

**Tolerance.** In this study, tolerance reflected the individual firm's feeling of burden and sacrifice incurred from acceding to control by another firm at a different channel level. 60 Channel member A's tolerance was defined as the maximum level of relative control by channel member B at a different channel level that A was willing to accept at each level of payoff to A.

The concept definitions presented above are highly abstract. Operational definitions of the concepts are presented in the fourth chapter.

**The Questions that Were Answered**

Several questions were examined throughout this study. The questions were related to two major issues: (1.) retailers' perceptions of the effect a change in a supplier's channel issue policy would have upon retailer's profits; and (2.) retailers' tolerance for relative supplier control over that channel issue at

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60 This definition was based upon Louis P. Bucklin's definition of the middleman tolerance construct in Bucklin, op. cit.
different levels of retailer payoff. The following six questions were answered.

1. Did retailers think that their profits would be affected if their supplier adopted a different marketing policy which would have given the supplier greater relative control over a crucial channel issue?

2. How did the retailers think their profits would be affected by each of several different supplier policies which represented a wide range of relative supplier control of a crucial channel issue?

3. Were the retailers' attitudes toward their enterprise channel relationships affected by different levels of relative supplier control of a channel issue and by different levels of retailer profits?

4. How did proposed increases in retailer profits affect the retailers' attitudes toward their enterprise channel relationships?

5. How did proposed increases in the supplier's relative control of the retailers' channel issue decision affect the retailers' attitudes toward their enterprise channel relationships?

6. What was the nature of the relationship between the maximum level of relative supplier control over a channel issue tolerated by retailers and retailers' profits?

These six questions were derived from the conceptual model of channel control which is presented in Chapter 3. Testable hypotheses based upon these questions and the statistical criteria
utilized to test the hypotheses are presented in Chapter 4.

**Plan of Presentation**

The purpose of this initial chapter was to introduce very briefly the concept of distribution channel control and to indicate the justification for the proposed research. The basic definitions, objectives and questions to be answered were presented to provide an overview of the problem. The second chapter presents a more detailed justification for this study based upon an expanded review of the existing literature which deals with the concepts of power, control, performance and satisfaction. In particular, Bucklin's theory of channel control is critically examined.

The third chapter is devoted to the development of a model of channel control which serves as the conceptual foundation upon which the empirical research is based. The model is an extension of the model proposed by Bucklin and is a more complete conceptual representation of the nature of channel control relationships.

The fourth chapter includes a presentation of the operational definitions of the constructs utilized in the conceptual model presented in the third chapter. Also, this chapter presents a discussion of the research methodology. Hypotheses are stated and the statistical tests utilized to determine whether or not to reject each hypothesis are indicated in Chapter 4. The fifth chapter is devoted to a presentation of the research results and the general conclusions drawn from the results.

The sixth and final chapter is comprised of a brief review
of the objectives, scope and methodology of the study. A summary is also presented of the conceptual model of channel control. Research results, conclusions and a critical analysis of the study are briefly highlighted. Finally, the chapter closes with a discussion of the implications of the findings of this study for future channel research.

**Summary**

The general nature of the problem investigated in this study was presented in this initial chapter. The concept of channel control was introduced and the theoretical, practical and moral justification for this study was highlighted. The basic definitions, objectives and scope of the study were presented along with a brief review of the marketing channel control literature.

Chapter 2 contains an expanded examination of the literature that is relevant to this investigation of channel control. Particular attention is devoted to recent conceptual and empirical research dealing with control in organizations and distribution channels. Louis P. Bucklin's theory of channel control is critically reviewed.
Chapter 2

THE PROBLEM IN ITS SETTING:
A LITERATURE REVIEW

The purpose of this chapter is to review literature that is relevant to this study of distribution channel control. This study focused upon two relationships: (1.) retailers' perceptions of the impact of control by a single firm on another channel level upon the retailers' profits (payoff); and (2.) retailers' tolerance for control by another firm on another channel level. Literature of relevance to this study includes conceptualizations, methodologies and research findings related to influence, power and control in organization and interorganization settings.

A simple model of some crucial channel relationships is first presented which serves as a guide for the literature review that follows. Second, prior research and theory related to the interrelationships among power, control, performance, satisfaction and tolerance are reviewed. Third, Kendall A. Adams' study of retailers' willingness to comply with wholesaler requirements in voluntary retailer cooperatives is cited as a contribution to the development of channel control theory. Finally, the chapter concludes with an evaluation of the theory of channel control espoused by Louis P. Bucklin in 1973.
A Model of Enterprise Channel Relationships

A few crucial relationships identified in organizational and channel literature as being pertinent to the development of channel control theory are summarized graphically in Figure 2.1. As depicted in the diagram, the relative amount of control exercised by one firm over another firm in a channel setting is in large measure determined by: (1.) the first firm's power or ability to influence the second; and (2.) the second firm's tolerance or willing acceptance of the influence attempts by the first. The performance of a channel member is shown to be significantly related to the amount of control achieved by other firms in the distribution channel.

Organizational satisfaction, measured perhaps by interviewing "key organization members," is influenced directly by both the amount of relative control exercised by other channel members and the level of performance (e.g., sales, profits, etc.) achieved by the organization. A two-way relationship is shown to exist between performance and organizational satisfaction, however. In other words, it is suggested in Figure 2.1 that a channel member's performance influences and is influenced by the level of organizational satisfaction which results from the channel relationship.

Tolerance reflects an individual firm's feeling of burden or sacrifice incurred from acceding to control by another firm on a different channel level.¹ Figure 2.1 indicates that a firm's tolerance for control by another firm is affected by the level of

¹Supra, p. 26.
Figure 2.1

A Simplistic Model to Guide the Literature Search
satisfaction which results from the channel relationship.

Clearly, organizational performance is affected by a myriad of factors in addition to control by another firm at another channel level and organizational satisfaction as perceived by key organization members. Indeed, market conditions and production, financing, and marketing capabilities as well as other factors obviously affect performance. The model depicted in Figure 2.1 is not suggested as a theory of channel control or organizational performance.² It is presented simply as a graphical guide to the literature review which follows.

**Power, Control, Performance, Satisfaction and Tolerance: Key Interrelationships**

The social science literature is replete with discussions of the concepts of influence, power, authority and control as they relate to individuals in organizations. Little theory and even less empirical evidence, however, have appeared with regard to these concepts as interorganization behavioral phenomena. In the following sections, pertinent literature which relates to the key interrelationships of the behavioral concepts indicated in Figure 2.1 is reviewed.

Much of the following review focuses upon theory and research that is related to the investigation of intraorganizational phenomena.

²The model in Figure 2.1 is similar in nature to the behavioral models used by March and Simon to explain human behavior. See for example, James G. March and Herbert A. Simon, *Organizations* (New York: John Wiley and Sons, 1966), pp. 49, 87-88, 106.
While organization theory and research provide valuable assistance to marketers in their efforts to build distribution channel theory, the danger of careless transplantation of organization findings to channel situations cannot be overlooked. The key concept literature review which follows does suggest directions for distribution channel conceptualizations and research, however.

**Power and Control.** Figure 2.1 shows control to result from the exercise of power. As discussed in Chapter 1, a firm achieves control over the marketing strategy issues of another firm on another channel level by exercising its power in the channel relationship. Since control results from the exercise of power (which can be interpreted as the potential to control), the measurement of power and control is necessary for empirical research.

1. **Control measurement.** Organization researchers have investigated alternative methods to measure control within organizations. The three major methods used are discussed below. Four additional measures which could be used to measure control in a channel setting are also presented. This is followed by a discussion of the uses of control graphs to depict organizational control measurements and their potential for channel studies.

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4Supra, pp. 22-24.
a. **Common control measures.** Most studies of control in organizations have relied upon one or more of three control measures: (1.) individual compensation; (2.) the span of control or structural character of the formal organization; (3.) perceptions of interpersonal influence recorded on a questionnaire. Each of these three measures of control is based upon a different concept of the process of control in organizations.

The compensation (reward) paid to individual members of an organization has been used to infer the control structure of the organization. Control in this case is viewed as a "contribution" made by individuals to the organization and their compensation is viewed as the inducement given to them from the organization's output to preserve their continued contribution.

The span of control or structural character of the formal organization is a second possible measure of organizational control. This measure is based upon the conception of control as *formally defined* or intended interpersonal influence. The span of control measure can be used in a two-level hierarchy to approximate the share of total control exercised by the superior and the subordinates. "The average individual share is inversely proportional to the number-sharing. Thus, increasing the span of control reduces the

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relative control of the superior, ceteris paribus.**

Finally, scaled perceptions of individual influence have been used to measure control. This measure is appropriate when control is defined as a process of interpersonal influence. Since control is achieved only to the extent that it is perceived as being achieved by members of an organization, this measure is particularly relevant. This measure of control is obtained by asking an organization's members to indicate on a scale the amount of influence they think they and others possess within the organization. A semantic differential scale ranging from "no influence" to "a great deal of influence" in general and over specific issues is used.

If all three measurement techniques measure the total amount and distribution of control in an organization, then researchers could select the method which is easiest or most efficient for a given set of circumstances. The relative ease of applying each of the three techniques might also be used to select the most appropriate measure of control in an interorganizational setting.

Formal organization charts which indicate spans-of-control and compensation data are relatively accessible within organizations (if one has access to confidential organizational information). Questionnaire data, however, is often relatively more costly and

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6 Ibid., p. 12.
7 Ibid., p. 11.
difficult to obtain for intraorganizational control research.

On an interorganizational basis, compensation for the several organizations of a channel network might be represented by profits or gross revenues. Formal organization charts might be approximated in a channel setting by distribution channel structures or the channel network charts. Measures of perceived interpersonal control might be gathered by questionnaires.

Profit data is typically difficult to obtain from several firms. Further, reported net profits for independent businessmen are not always indicative of their real net profits. Many independent businessmen withdraw higher salaries than their efforts would demand in the labor market and many charge personal expenses to the business. Therefore, in terms of ease as well as accuracy of data collection in an interorganizational study, the network structure (which refers to the intensity of distribution and the number of hierarchical levels of the channel system) and the influence questionnaires might be the more appropriate alternatives for the researcher.

Analysis of the distribution channel network allows one to speculate with regard to the amount of relative control achieved by the various levels of the channel hierarchy. On the one hand, it might be hypothesized that control is centralized in channels

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characterized by exclusive territorial distributorships. By granting exclusive distribution privileges, a supplier usually hopes to gain more direct control over intermediaries' policies on prices, promotion, credit and various other services. On the other hand, it might be hypothesized that control is decentralized in intensive (broadcast) channels. An intensive distribution system might be compared to a large span of control (a high subordinate-to-superior ratio) within an organization.

Distribution intensity is often a misleading criterion of control centralization, however. A supplier who grants exclusive territorial distributorships, for example, may limit his available alternatives and over time become very dependent upon the middlemen granted the exclusive privileges. Since a middleman's power over a supplier increases as the supplier becomes more dependent upon him, the middleman might be able to achieve a high level of relative control over the supplier in an exclusive distribution system.

Gathering data from representatives of several organizations which are members of a particular enterprise channel group would pose the problem of gaining the cooperation of the independent individuals whose perceptions were desired. Also, if the organizations were geographically dispersed and the questionnaires of a

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complicated nature so that personal interviewing was required, the process would also be expensive.

In interorganizational control research, the use of structures of distribution channel networks appears generally to be the easiest way to measure (at least to infer) the degree of control decentralization (although, as shown above, the structures may be misleading). However, research has shown that ease of data collection is not a sufficient criterion to use in the selection of the most appropriate control measuring device.

Whisler, et. al. collected compensation, span-of-control and perceived influence data from seventy-three departments within a large insurance firm and computed indices of centralization of control. Their findings showed that the three measures of control were highly correlated (simple correlation coefficients from |.64| to |.86|) only when the organizations had a highly routinized or programmed task. Conversely, whenever the organization task was relatively unprogrammed, the three measures tended to diverge (simple correlation coefficients from |.16| to |.38|).\footnote{Whisler, \textit{et. al.}, \textit{op. cit.}, p. 22.} Where tasks are not highly routinized (as in most channel systems), surrogate measures, or measures which allow researchers only to infer the perceived distribution of control, are inadequate.
While the channel structure might be easy to ascertain, there is an additional problem associated with the use of this measure to determine the total amount and distribution of control in an inter-organizational setting. All that can be inferred from an inspection of the channel structure is an approximation of the relative amount of total control achieved by organizations at different channel levels. However, the amount of control actually attained by members of the channel system may vary for the several marketing strategy issues. For example, a supplier might exercise a great deal of power and as a consequence achieve a high degree of control over the physical product quality and pricing issues. However, the middlemen may have a high degree of control over inventory and service levels to the final consumer. Therefore, both the supplier and the middlemen can achieve different degrees of control over several strategy issues.

A major limitation, therefore, of the use of the channel network structure as an indicator of control distribution is that it yields only a global measure which might conceal more than it reveals. This problem is also associated with the use of profits (compensation) as a measure of control distribution in a channel system. Firms with equal levels of profits may in fact have varying degrees of control over different strategy issues.

The use of the influence-questionnaire enables the researcher to overcome this problem by obtaining respondents' perceptions of influence over specific issues. In a distribution channel, the
respondents may be asked to indicate their perceptions of the influence exercised by the various channel members upon final customer pricing, inventory requirements, customer service requirements, etc.

Patchen analyzed data from studies of a manufacturing company and a set of automobile dealerships that included both global measures of influence within the organizations and indices based upon influence in specific areas. His analysis showed that there was more agreement among non-supervisory persons of the same organizational level when influence is measured by an index of questions concerning specific areas of influence than when it was measured by a global question. "In other words, the index measure is more reliable than the global measure in this respect." \(^{11}\)

b. Additional control measures. In addition to the three methods commonly used to measure control in organizations, three other methodologies could be used to measure channel control. Kaduskin suggests that control be measured by studying participation in decisions. The procedure is outlined here and presented in a channel context. \(^{12}\)

Step 1. Using documented evidence and knowledgeable informants, develop a list of important recent decisions. The objective is to identify the main channel decision areas.

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Step 2. List all of the firms and key organizational personnel who are thought to have participated in making the decisions.

Step 3. Interview the personnel identified to assess the role(s) each played in the decision making activities and to identify additional people who participated.

This procedure is time-consuming, complex and may not yield valid measures. For example, a particularly powerful channel member may suppress an issue so that no decision is ever made. Also, since no formal hierarchy exists in most channel systems, it is usually necessary to differentiate between participation in decision-making and actual influence. For example, power exercised indirectly by a manufacturer through wholesalers to achieve control over retailers may be ignored by this method. This procedure seems particularly well suited for preliminary investigations to determine key channel issues and to identify potentially influential channel members.

A second possible methodology for measuring control is suggested by Goldhammer and Shils. Although they proposed the method to measure power, it actually measures control or the extent to which power is exercised to achieve desired outcomes. Goldhammer and Shils suggest that the ratio of an individual's (organization's) successful attempts to exercise power to all of his (its) attempts to exercise power is a measure of the person's (organization's) power. Since power is defined as the potential to exert influence, this measure is inadequate to measure power because it measures

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power exercised and ignores the capacity to achieve additional control.

This method, like the one suggested by Kaduskin, requires a complex analysis of past behavior of channel members if channel control is to be measured. Such analysis will identify the extent to which channel members perceive themselves and others to have influenced decisions. However, it suffers the same two serious limitations associated with Kaduskin's procedure.

Hopkins suggests a third methodology that could be used to measure channel control.¹⁴ The method, developed for use in small group experiments, involves determining each person's initial position on an issue and comparing this with the final group decision. The major limitation of this method is that persons (or organizations) who initially hold a middle-of-the-road position and who have little control may appear to be most influential if a compromise is made by two powerful members who held extreme positions initially.

The last three methodologies discussed above offer some potential for measuring control over specific issues in channel decisions. In each case, however, total control exercised could only roughly be approximated. To measure total control over marketing strategy issues in a channel relationship, the researcher would have to specify all the issues and weight them to reflect the organizations' perceptions of the importance of the issues.

The use of control graphs to depict the measures of organi-

zational control is discussed in the following section. The applicability of control graph analysis to distribution channel control analysis is highlighted.

c. Control graphs. Control graphs were first proposed by Tannenbaum and Kahn to depict the amount and distribution of control in organizations. The horizontal axis of the control graph shown in Figure 2.2 represents the hierarchical levels of an organization and the vertical axis represents the amount of control perceived to be attained by the respective hierarchical levels.

Control graphs are used to depict the total amount and distribution of control perceived within a system with measures of the heights and slopes of the control graph curves. The curves are usually developed from responses to influence questionnaires. Organization members are asked to indicate their perceptions of the level of control achieved by various echelons of the organizational hierarchy over single issues or in general. Members generally respond along a semantic differential-type scale. An example of the type of question used is:

In general, how much do you think the president has to say about how things are decided in this local? The questions are answered with checks on a five-point scale ranging from "a great deal of say" to "no say at all."


16 Ibid., p. 131.
Figure 2.2

The Control Graph: The Amount and Distribution of Organizational Control as Perceived by Different Hierarchical Levels
Control graphs can be used to plot individuals' and groups' perceptions of the amount of control achieved by themselves and/or others. The graph provides a more accurate depiction of the total amount and distribution of control than does the traditional democratic, autocratic, etc. typology. Curve A in Figure 2.2 represents a situation of autocracy while curve B represents a situation of democracy. Different slopes of the curves would clearly indicate, however, greater or lesser degrees of democracy and autocracy.

The control graph provides a vehicle for demonstrating the essence of the fixed versus variable control argument. If the total amount of control in a system is fixed in amount, then any increase in one hierarchical level's control would require a decrease in some other level's control. However, if this is true, there are truly conflicting arguments regarding organizational control. One argument is that organizational effectiveness can be increased by enhancing the control exercised by lower level members because involvement in decision-making is necessary to foster identification, motivation, and loyalty. Others argue that a high degree of leader control is necessary for the efficient direction and administration of organizations. Curve C in Figure 2.2 shows that it is conceivable to increase the amount of control exercised by the lower organizational levels and, at the same time, to increase the control exercised by the upper levels. Within an organization, for example, a department manager and his subordinates may both possess some power or potential to influence working conditions. Neither may exercise that power, however. Therefore, control over that issue...
would be little or none. If the subordinates begin to exercise their power and achieve some control, then the manager may exercise his power. In the end, both may achieve higher levels of control over employee working conditions. If control were viewed as fixed in amount, this would be a contradiction.

Early studies utilizing control graph analysis were not without limitations, however. Some early users constructed overall control graphs by simply averaging all respondents' perceptions. Oftentimes the overall control curve was found to be very similar to the average control curve for the lower echelon of the several hierarchical levels included in the studies and quite different from the higher levels' average control curves. The obvious reason for this is that usually more responses were obtained from lower echelon personnel and a disproportionate weight was attached to their perceptions in the construction of the overall control curve.  

There is often a great deal of difference in the amount and distribution of control perceptions of different hierarchical levels in organizations. McMahon and Perritt proposed that analysts compare the degree of concordance (similarity) and divergence (difference) of the respondents' perceptions of their own and others' influence in organizations to measure the differences in perceptions. Concordance is operationalized by measuring the extent to which control

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curves based upon the perceptions of each organizational level coincide. ¹⁸

It is possible to use control graph analysis to determine and depict the total amount, distribution and concordance of control as perceived by channel members at different levels of a channel system. Figure 2.3 presents three hypothetical control graph curves for a channel group comprised of a manufacturer and his wholesalers and retailers. In this figure, the perceptions of the channel group members are relatively concordant.

2. Power measurement. Power is a key concept in understanding channel control. Several approaches have been proposed by researchers to obtain valid measures of power (defined here as the potential to achieve control). Valid measures of power are difficult to obtain, however, for several reasons. First, power represents the potential to achieve control and, therefore, manifests itself only when exercised. Latent power potential may be much greater than that which is exercised. Second, like control, power is issue specific and global measures often hide more than they disclose.

Third, power can be exercised indirectly as well as directly. In other words, A may be able to influence C by exercising his power over B. If B has power over C, then, even if A has no direct power over C, A has indirect power over C through B. Finally, power, as potential to influence, is subject to the frailties of perception. For example, A has power over B to the extent that B perceives A to

¹⁸ Ibid., p. 335.
A M O U N T O F
CONTROL

A V E R Y G R E A T
A M O U N T

S O M E

L I T T L E

N O N E

M A N U F A C T U R E R  W H O L E S A L E R S  R E T A I L E R S

O R G A N I Z A T I O N
L E V E L

M A N U F A C T U R E R  W H O L E S A L E R S  R E T A I L E R S

F i g u r e 2 .3
H y p o t h e t i c a l C o n t r o l G r a p h s f o r a M a n u f a c t u r e r
a n d H i s W h o l e s a l e r s a n d R e t a i l e r s
possess power over him. In a given situation, however, A may actually possess greater power over B than B perceives. Only when A exercises his power does B become aware of its existence. Thus, objective reality and individuals' perceptions of reality are both important in the assessment of power.

Three separate efforts have been undertaken by marketers recently to measure power in distribution channels. Each of the three studies are reviewed below with particular attention devoted to the methodologies used.

a. El-Ansary - 1970. El-Ansary's investigation of heating and cooling supply channels represented the first attempt to measure channel power. El-Ansary measured power directly by obtaining wholesaler and dealer self-perceptions of power and attributed power perceptions. He defined channel power as the ability of one member to influence the decision variables in the marketing strategy of another member at a different channel level. For this influence to qualify as power, however, it must be different from the influenced member's original level of control over his own marketing strategy.

To obtain the attributed measures of power, each dealer was asked to indicate the extent to which his actual marketing policies deviated from what he would have originally planned without a parti-
cicular wholesaler's influence (power). Likewise, each wholesaler was asked to indicate the extent to which his actual marketing policies deviated from what he would have originally planned without a particular dealer's influence (power).

To obtain *self-perceived* measures of power, each dealer was asked to indicate the extent to which a wholesaler's actual marketing policies deviated from what the wholesaler would have originally planned without the dealer's influence (power). Also, each wholesaler indicated the extent to which a dealer's actual marketing policies deviated from what that dealer would have originally planned without the wholesaler's influence (power).

The dealers and wholesalers responded to a Likert-type scale. An example of the type of question used to assess the level of power attributed to a wholesaler by a dealer is:

> This wholesaler's influence on the number of salesmen you employ is:  

1. non-significant or no influence  
2. insignificant influence  
3. some influence  
4. significant influence  
5. very significant influence.

El-Ansary also obtained indirect measures of self-perceived and attributed measures of power. These measures were obtained through self-perceived and attributed measures of dependence and sources of power. While these measures and El-Ansary's findings are significant, the primary significance of his research for this study is his methodology to measure power directly. Subsequent
Researchers investigating channel power used different methodologies and these are reviewed next.

b. Wilkinson - 1972. Wilkinson measured power in a distribution channel for a household durable in the state of New South Wales and the Australian Capital Territory. The channel consisted of three levels: suppliers of components to manufacturers who distributed the finished product through retailers.

A key executive in each firm in the channel group surveyed was asked to rate the "maximum possible" and "usual" constraining influence he perceived his firm (self-perception) to have and each of several named firms (attributed) to have on his firm's marketing policies. Separate questions were asked for each marketing policy area (e.g. pricing, promotion, etc.).

The "maximum possible" effect was designed to reflect self-perceived and attributed power. The "usual" effect was designed to measure self-perceived and attributed influence or control. Respondents rated these effects using a seven point semantic differential scale of the following type.

nil or insignificant effect

\[ \begin{array}{ccccccc}
1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\end{array} \]

very great effect

Like El-Ansary, Wilkinson obtained measures of organizational

dependence and sources of power. What is relevant for this study, however, is that Wilkinson measured control by asking key executives to assess "usual constraining influence."

c. Hunt and Nevin - 1974. In an effort to empirically assess the relationship between power and sources of power in a channel of distribution with a well-defined power source, Hunt and Nevin investigated a franchisor-franchisee channel group. They defined power as "...the ability of the franchisor, as perceived by the franchisee, to control the decision variables of the franchisee." Each franchisee indicated the extent to which he had "responsibility for" each of seven marketing decision areas. For each decision area, the franchisee responded to one of the following six scale positions:

___ (1.) I have almost complete responsibility for this.
___ (2.) I have much more responsibility for this than my franchisor does.
___ (3.) I have a little more responsibility for this than my franchisor does.
___ (4.) My franchisor has a little more responsibility for this than I do.
___ (5.) My franchisor has much more responsibility for this than I do.
___ (6.) My franchisor has almost complete responsibility for this.

22 Shelby D. Hunt and John R. Nevin, "Power in a Channel of Distribution: Sources and Consequences."

23 Ibid., p. 18.
The seven marketing decision areas assessed by the franchisees are:

1. setting retail prices for products and services;
2. determining the number of employees;
3. adding or deleting items from the product line (menu control);
4. specifying the bookkeeping system;
5. approving the content and media for local advertising;
6. determining the hours of operation;
7. determining the appropriate standards of cleanliness.

There are two severe limitations in the Hunt and Nevin analysis. First, those authors measured franchisor control over franchisee operations and not power. The questionnaire utilized asked each respondent to indicate the level of his "responsibility for" seven decision areas. The measures derived from such responses reflect franchisors' ability or potential to influence the decision areas only by chance.

The necessity for clearly distinguishing between power and control has been stressed throughout this study. Because they measured control and not power, Hunt and Nevin did not investigate the relationship between perceived power and sources of power which they proposed to examine.

Second, the researchers developed an index of total power by computing the mean of the franchisee's responses for each of the seven decision areas. The researchers probably did not specify all of the relevant marketing decision areas of importance to the franchisees. (Site location, for example, was not one of the decision areas specified.) If some important decision areas were omitted, then the computed index of power does not adequately estimate the true level of power.
Even if the seven decision areas specified did represent all of the important issues, they are probably not all of equal importance. Since local health authorities specify standards of cleanliness, many franchisees may perceive franchisor control over hours of operation to be a more important issue. Because equal importance was assigned to the seven issues, the computed index of power might not accurately estimate the true level of power.

Throughout the preceding discussion of power and control, primary attention has been given to alternative methodologies. Consideration was also given, however, to the necessity to distinguish between power and control in both conceptualizations and empirical research. The relationship between channel control and performance is discussed in the following section.

Control and Performance. The need to exercise some form of control over individuals in organizations to encourage a degree of unity and common direction of efforts has long been recognized. Chester I. Barnard cited the surrender of control of personal conduct as an essential and universal element of organization.\(^\text{24}\) Control achieved by the application of power is also an important mechanism used to achieve channel organization and coordinated efforts. In Figure 2.1, organizational performance is shown to be affected by the level of control achieved by firms on other channel levels.

There is a plethora of empirical evidence which deals with

\(^{24}\)Barnard, *The Function of the Executive*, p. 84.
the relationship between control and performance. In the following sections, organization theorists', economists' and marketing theorists' studies will be briefly highlighted.

1. Organization theory. McMahon and Perritt summarized the organization theory and research related to control and performance in three hypotheses which are discussed below.25

H_1 Organizational effectiveness is directly related to the amount of total control.

Researchers have consistently concluded that a positive relationship exists between measures of organizational effectiveness and the total amount of control perceived to be exerted by organization members.26 The direct relationship between total control and effectiveness has been explained to be due to the increased satisfaction and psychological integration of individuals in organizations which exhibit a high degree of control. "The exercise of control is indicative of involvement which may enhance motivation, commitment, and loyalty."27

McMahon and Perritt recently surveyed 2537 line managers in twelve geographically dispersed plants of a manufacturing corporation.


27 McMahon and Perritt, op. cit., p. 626.
They concluded that:

The first level managers in manufacturing plants characterized by a high amount of control exerted within the management system report significantly more favorable assessments of communications, performance rating, interunit cooperation, general bureaucratic hangups, cost reduction, and work pressure than those in the low total control plants.  

Based upon these findings, it is possible to speculate that channel effectiveness might be directly related to the level of total control perceived to be achieved in the system.

\[ H_2 \text{ The less negative (more positive) the slope of the control curve, the greater the organizational effectiveness.} \]

There are conflicting theories with regard to the relationship that exists between the distribution of control as perceived by organization members and organizational effectiveness. Some researchers suggest that control should be distributed in a hierarchical fashion with the locus of control rooted in the upper organizational echelons if conformity, coordination and unity of direction is to be achieved.  

An opposite view, taken by other theorists, suggests that a more positive (i.e. democratic) distribution of control is necessary for organizational effectiveness.  


hypothesis suggested above is based upon this latter view.

The intraorganizational research of McMahon and Perritt led those researchers to accept the second hypothesis. That is, the power equalization theories were supported at the first level of management. These findings again suggest that the nature of the distribution of control throughout the various levels of a channel network may be directly related to overall channel effectiveness.

The greater the concordance among the control curves of the various managerial levels, the greater the organizational effectiveness.

Concordance refers to the extent to which perceptions of the amount and distribution of control of different hierarchical levels are in agreement. The third hypothesis is based upon the belief that "...a lack of agreement among organizational members as to who has the control adversely affects the processes of communication, coordination, and integration."32

Mutual understanding and agreement have been cited by Blake and Mouton as important ingredients in the achievement of organizational effectiveness. Further, March and Simon have implied that intergroup conflict may result from disagreement among organization members related to the distribution and amount of control.33 McMahon

31 McMahon and Perritt, op. cit., p. 634.
32 Ibid., p. 627.
and Perritt found in their study of 2537 line managers that a high degree of concordance is associated with favorable measures of organizational effectiveness. Thus, their research offers support for the third hypothesis. These theories and findings suggest that channel effectiveness may be directly related to the degree of concordance among the different channel levels' perceptions of the amount and distribution of control.

The preceding discussion focused upon alternative measures of organizational control and power. Channel power research was highlighted. Also, some intraorganizational researchers' conclusions as to the amount and distribution of control within organizations as well as the concordance of members' perceptions were related to channel systems. The following section focuses upon economic market structure theory as it relates to channel control and channel performance.

2. Economic theory. Market structure theory suggests a general methodological approach to economic analysis of markets. According to the theory, market structure is assumed to determine the conduct of the participants in the market, and the conduct, in turn, to determine the market's performance, i.e. the economic result that flows from the market. Although some question the direction of causation, the general belief is that the primary direction of

34 Ibid., p. 634.
causation is from structure to conduct to performance.

Bain states that the most salient dimensions of market structure are:

(a.) the degree of seller concentration
(b.) the degree of buyer concentration
(c.) the degree of product differentiation
(d.) the condition of entry to the market. 36

Vernon suggests that the degree of vertical integration and other aspects of marketing distribution channels are important aspects of market structure. 37

Market conduct dimensions that are significant in the real world extend beyond price and output decisions. Crucial dimensions of market conduct include:

(a.) methods employed by the firm or group of firms in determining price and output;

(b.) product policy;

(c.) sales promotion policy;

(d.) means of coordination and cross-adaptation of price, product and sales promotion policies among competing firms;

(e.) presence or absence of, and extent of, predatory or exclusionary tactics directed against established rivals or potential entrants. 38

Market performance is believed to result from structure and

37 Vernon, op. cit., pp. 28-29.
conduct. Public policy (antitrust laws, direct regulation, etc.) is designed to improve performance by affecting structure and conduct.

Measures of total market performance include:

(a.) the difference between price and average production cost;
(b.) the relative efficiency of production;
(c.) the ratio of sales promotion costs to production costs;
(d.) product attributes, e.g. quality and variety;
(e.) the rate of company and industry progressiveness. \(^{39}\)

It is clearly evident that the economic market structure-conduct-performance theory supports the relationship proposed in Figure 2.1; i.e. individual firm as well as total industry performance is affected by inter-firm control, one dimension of market conduct. Obviously, however, control is not the only variable which affects performance.

3. **Marketing research.** Marketers, too, have investigated the relationship between channel control and firm and channel performance. Slater investigated the impact of market coordination in underdeveloped countries. He concluded that market coordination contributed to increased real income and wider distribution of income which resulted in a broader base of effective demand.\(^{40}\)

The motives of a single firm to control the marketing strategy of firms at other channel levels are many and varied. A single supplier, for example, may strive to achieve market control for one


\(^{40}\) Slater, "Market Channel Coordination and Economic Development." Supra., pp. 11-12.
or more of the following reasons: 41

(a.) to obtain market access -- in some cases distributors are unwilling to carry a supplier's product unless they are partially protected from intrabrand competition;

(b.) to increase product exposure -- suppliers may wish to limit each outlet to some size and increase the number of outlets to a maximum to maximize exposure;

(c.) to increase distributors' sales effort -- supplier strategies often are designed to limit the geographic coverage by a distributor to encourage in-depth coverage of narrowly defined geographic segments;

(d.) to determine quality and character of distributor service -- restriction of customer groups to specific distributors, for example, may enable distributors to design their product/service offerings to better serve customer wants.

These four motives are by no means exhaustive. They do indicate, however, that control by suppliers over certain distributor marketing issues may yield positive as well as negative effects upon the level of distributor performance.

Not all marketing strategy issues have the same effect upon an individual firm's performance. Therefore, control by suppliers over different distributor strategy issues has different effects upon distributor performance. A retailer's performance may be very positively related to his ability to promise and guarantee delivery within x days. His ability to influence the supplier's order cycle significantly affects his performance. On the other hand, if market prices of all competing products are similar, then the inability of

a retailer to control price at the retail level may not materially affect his performance.

**Control and Satisfaction.** It is almost axiomatic that individuals prefer to have more rather than less control over factors which affect their lives. Many businesses, managed by individuals with a strong desire for independence, are also characterized by a preference for subjecting the organization to a minimum level of control by organizations at other levels in the distribution channel. For this reason, a relationship is indicated in Figure 2.1 between the level of control achieved by one firm over another's marketing strategy issues and the "satisfaction" of the latter organization with the channel relationship.

Organization researchers have proposed several theories that deal with the control-satisfaction relationship. The power-equalization thesis called for management to encourage greater participation by subordinates in decision-making.\(^{42}\) The belief of power-equalization or participative management theorists is that employees become less apathetic, more independent, and have an opportunity to self-actualize when allowed to rely more upon self-control. The increased individual satisfaction which results from self-control is also believed to contribute to increased individual and organizational performance.

Research by Bachman and Tannenbaum led them to conclude that "individuals tend to be more satisfied with those aspects of life or of their jobs over which they have some control than with those over which they have none."\textsuperscript{43} An investigation by Bachman, Smith and Slesinger of the relationship between control and satisfaction in 36 branch offices of a national firm indicated that the total amount of control achieved within an organization also affects member satisfaction.\textsuperscript{44} These results suggest that when control is increased throughout an organization, member satisfaction is increased. Thus, individual satisfaction is affected not only by the relative amount of control achieved by various echelons of the organization hierarchy but also by the total amount of control achieved by the entire organization.

Two basic properties of organizations inhibit individual independence or self-control. These are: (1.) a top-to-bottom hierarchy of authority, and (2.) a unity-of-command which directs the organization toward a specific set of organizational goals. Both of these properties are absent in most distribution channels. Because of the traditional role of autonomy accorded to the independent businessman, distribution channel member satisfaction is


significantly related to the level of control achieved by other channel members over the firm's marketing strategy issues.

Performance and Satisfaction. Performance and satisfaction are not inexorably linked. The literature does not clearly indicate that productivity leads to satisfaction.\(^4^5\) There is evidence, however, that individual employee satisfaction reduces turnover, absenteeism and grievances.\(^4^6\) Within an organization, these latter factors may lead to increased performance.

With inconclusive evidence, it is best to view satisfaction and performance as two interrelated variables which could serve as dependent, independent or intervening variables. Pickle and Rungeling's survey of ninety-seven (97) small business firms identified a positive correlation (significant at the one percent level) between organization profits and psychic rewards perceived by organization owner-managers.\(^4^7\) Owner-manager psychic reward measures were obtained by asking:


1.) How much did they enjoy their work?

2.) How much money would it take to entice them to another job?

3.) What was their self-perceived status image in the community?

4.) What were their motives for continued operation of their business?

Obviously, the significant correlation between profits and psychic rewards did not indicate a causal relationship. But, it does show that there is a strong relationship between satisfaction and performance when measures are taken among key executives of business organizations.

**Satisfaction and Tolerance.** Organizational tolerance for control by another firm on another level of a distribution channel reflects an organization's feeling of burden and sacrifice incurred from acceding to the latter's control. Figure 2.1 shows organizational tolerance for control by another firm to be affected by the organization's satisfaction with its channel relation with the latter firm.

The preceding discussion has indicated that two of the many variables that affect organizational satisfaction in a dyadic channel relationship are the extent of relative control over marketing strategy issues achieved by the two firms and the firms' level of performance. The relationship shown in Figure 2.1, then, recognizes that an increase in Firm A's relative control over Firm B may decrease B's satisfaction with the A-B channel relation. However, if B's perfor-

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mance (i.e. profits, sales) is positively affected by A's control, then the improved performance may positively affect B's satisfaction. The net effect upon B's satisfaction could be positive. If it is positive, then this factor may encourage B to be more willing to accept additional control by A.

Research by Kendall Adams of fifty-four (54) owner-managers of supermarkets showed wholesaler sponsored advertising to be the most effective service provided to retailers in wholesaler sponsored food retailing cooperatives. Further, of several services offered by sponsoring wholesalers, retailers were most satisfied with the wholesaler sponsored cooperative advertising programs. Adams concluded that because the cooperative advertising programs were believed by the retailers to be effective, the retailers were willing to accept (tolerate) assistance from the wholesalers in this decision area.

Control and Tolerance. In this study, control is defined as the ability of one firm to predict events and achieve desired outcomes in channel relations. Tolerance is defined as a firm’s feeling of burden and sacrifice incurred from acceding to control by another

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firm. Figure 2.1 shows Firm B's tolerance for control by Firm A to
directly affect the level of relative control achieved by A over B.
The actual level of relative control by A over B is also shown to be
affected by A's power over B. A more complete model would show the
actual level of relative control achieved by A over B to be dependent
upon a third important factor, i.e. Firm A's desire to control the
marketing strategy issues of B. In summary, if Firm A desires to
achieve a high level of control over Firm B, then the level of control
achieved by A over B will be affected by A's ability to influence B
(power) and B's willing compliance (tolerance) for A's control.

Throughout the preceding sections, literature from the fields
of management and organizations, economics, marketing, sociology and
psychology has been briefly reviewed to show support for the conceptual
model shown in Figure 2.1. The analysis has demonstrated that there
is a complex relationship among channel member control, satisfaction
and performance. In the remaining sections of this chapter, two
attempts by marketers to conceptualize the channel control, satis-
faction and performance relationship are reviewed.

Adams' Indifference Curves Analysis

To explain the relationship between the effectiveness of
wholesaler services provided in voluntary retail cooperatives and
participating retailers' willingness to comply with wholesaler
requirements, Kendall Adams suggested the use of indifference
curves. Participation in wholesaler sponsored retail cooperatives means that retailers give up some of their freedom to make independent pricing, advertising and other marketing strategy decisions. The wholesaler's programs that restrict the retailers' freedom to make independent decisions are satisfactory to the retailers if the specific performance requirements are in equilibrium with returns anticipated by the retailers. (See Figure 2.4.)

The indifference curves (I₁ and I₂) in Figure 2.4 indicate various marginal evaluations which a retailer could place on the twin goals of income and freedom. Assuming the market mechanism would allow him to set retail prices on his goods, a retailer relinquishes freedom if he agrees to adhere to prices suggested by a wholesaler. Income is interpreted as financial or economic return as distinguished from psychic rewards.

The indifference curves (I₁ and I₂) are curved to reflect the diminishing marginal utility of freedom. The curve I₁ in Figure 2.4a shows that to remain "indifferent" between two points along the indifferent curves, income must increase at an increasing rate as retailer freedom is decreased. The income possibility lines (NP and N'P') indicate the rate of income increase anticipated as a result of increased wholesaler control.

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Figure 2.4

Adams' Application of Indifference and Income Possibility Curves to Explain Channel Behavior.

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52Adams, op. cit., p. 27.
Suppose Figure 2.4a represents an individual retailer's indifference and income curves for various levels of wholesaler control of resale pricing. $I_1$ represents the marginal rate at which the retailer would exchange freedom for income. NP represents the income that the retailer would actually receive at various levels of wholesaler control over retailer prices. Complete freedom to price his merchandise would be optimum for this retailer. He could not achieve a higher level of indifference by relinquishing freedom.

If, however, Figure 2.4b represents a retailer's situation, then he would relinquish price control to the wholesaler. At point $P_2$ the marginal rate of substitution between freedom and income would be equal to the marginal return expected by the retailer. Point $P_2$ would represent an equilibrium point for the retailer. "The equilibrium point where the marginal rate of substitution of freedom for income (or some other value) equals the rate of gain of income (or some other value) describes the limits of a retailer's cooperation."53

The use of indifference analysis to depict independent businessmen's behavior suggests that the level of coordination of channel activities achieved through channel control, individual firm performance goals and retailer attitudes toward relinquishing freedom are interrelated. Adams' study results tended to confirm his conceptualizations. However, Adams' methodology did not enable him to

53Ibid., p. 28.
depict the indifference and income curves in his model. In 1973, Louis P. Bucklin proposed a theory of channel control. That theory was based upon a model which is conceptually similar to Adams' model, but it lends itself better to empirical examination.

**Bucklin's 1973 Theory of Channel Control**

In 1968, Bucklin proposed a tentative theory of channel control which consisted of a list of generalizations. In an apparent effort to offer a more complete theory, Bucklin proposed a new theory of channel control in 1973 which is based upon an inter-organizational application of Barnard's concept of authority. That theory is reviewed below and several perceived limitations are cited.

**A Brief Review of the Theory.** According to Barnard, organizational authority is dependent upon member willingness to comply. Bucklin's control theory extends Barnard's concept of authority to interorganization management. That theory is represented in Figure 2.5. The vertical axis depicts profits obtained by a middleman from

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54 Adams, "The Acceptance and Use of Special Services by Selected Supermarket Owner-Managers in Michigan."


56 Bucklin, "A Theory of Channel Control."

doing business with a supplier. The horizontal axis depicts a range of supplier control. Control in this model refers to the extent of middleman compliance to the supplier's commands.

Figure 2.5

Louis P. Bucklin's Model of Channel Control

The model depicts two constructs: tolerance and payoff. The tolerance function depicts the middleman's feeling of burden and sacrifice incurred from acceding to supplier control. The positive slope of the tolerance function reflects the middleman's demand for higher profits at successively higher levels of manufacturer control.

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58 Bucklin, op. cit., p. 42.
The middleman payoff function defines the profits that the middleman thinks he will receive at various levels of supplier control. The payoff function in Figure 2.5 is shown to increase within a range of low supplier control and to decline at successively higher levels of supplier control. This shape reflects the middleman's belief that his profits will increase by following the supplier's instructions up to a level of control indicated by point P. At progressively higher levels of control above P, the middleman believes that his profits become smaller and smaller. Within this range of a declining payoff function, authority (up to A) and coercion (up to C) become the means to achieve supplier control.

The intersection of the payoff and tolerance functions defines the maximum limits of supplier control. In Figure 2.5, the payoff and tolerance functions intersect at point A. However, the supplier may apply coercion to achieve a level of control higher than A, such as C.

The model of distribution channel control proposed by Bucklin represents a significant contribution to the developing body of marketing thought. A critical review of the model yields, however, some important limitations which indicate the need for revising Bucklin's model of channel control.

A Critical Analysis of the Theory. A critical analysis of Bucklin's proposed theory and his conceptual model identifies several limitations. These limitations are specified below.

1. Barnard's theory. Bucklin's theory is based upon an extension of Barnard's theory of authority. It has been repeatedly recognized, however, that intraorganizational management theory may
not apply to interorganizational phenomena. Barnard's theory of authority was developed in an intraorganizational management context. Authority in an intraorganizational context is generally unidirectional. It flows from upper management to lower management levels. Lower management can accept or resist authority.

In interorganizational management, however, attempts to exert power and authority are dyadic. Channel power has been defined and measured in terms of a mutual relationship between entities. The channel researchers who have investigated power in distribution channels have conceived channel member power to be inversely related to channel member dependence. Any model that purports to depict the nature of channel control must recognize that effort to exert power to achieve control is a mutual or dyadic process. The unidirectional depiction of control along the horizontal axis in Figure 2.3 severely restricts the model's ability to explain channel control.

2. **Supplier domination.** Bucklin seems to assume supplier domination of middleman marketing strategy. The theory of control based upon the model of channel control consists of a series of strategies designed to "...shift the middleman's willingness to comply to the point where the manufacturer's marketing program can be implemented." The review of marketing channel control literature, however, demonstrates that the channel firm or level which should

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59 El-Ansary, *op. cit.*
60 Bucklin, *op. cit.*, p. 46.
control may be manufacturers, wholesalers or retailers.

3. **Total control.** Nowhere does Bucklin's theory recognize that control is necessarily issue specific. Stern recognized that the extent of control achieved by a channel member may vary across different marketing strategy issues.

For example, the seller may establish the price discount schedule for various quantities, but the buyer still determines (within the constraints of the seller's policy) the quantity actually purchased, which may or may not be the most profitable from the standpoint of the seller. 61 Also, methodological problems are simplified if one deals with control on an issue by issue basis.

4. **Function shapes and intersections.** Bucklin hypothesizes payoff and tolerance functions which are curvilinear. There is good reason to believe that the payoff function depicted in Figure 2.3 may be positively sloped throughout a broader range of control than indicated. A retailer, for instance, would exhibit a positively sloped payoff function throughout if he perceived the potential for increased channel coordination and the consequent increase in effectiveness that might result from supplier control of some policy (e.g., resale pricing).

Also, the model assumes that the middleman tolerance and payoff functions intersect. The intersection defines the limits of supplier control. However, there is no more reason to assume that the functions intersect than there is to assume that the middleman payoff function lies above the tolerance function at all levels of

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supplier control.

5. Power locus thesis. Finally, Bucklin assumes that a power locus and a channel leader exist and that channel coordination can be achieved only through control. Previous research suggests, however, that when power is dispersed, a locus of power does not exist and channel coordination has to be achieved via avenues other than control.62

Despite the apparent limitations, Bucklin's model and theory of channel control is a valuable contribution to the growing body of marketing thought. In fact, the theory and model is extended in Chapter 3 to yield a revised theory which is offered as a more complete representation of the nature of channel control.

Summary

In the second chapter, some of the literature in marketing and other related disciplines that is particularly relevant for this study was reviewed. Initially, a simplified model of the relations between power, control, performance, satisfaction and tolerance for control in a dyadic channel group was presented. The model served as a guide for the literature review which followed.

The review of the literature dealing with the relationship between power and control included a discussion of alternative methodologies for measuring control and the use of control graphs by organization researchers to depict their control measures. Special

62 El-Ansary and Stern, "Power Measurement in the Distribution Channel."
attention was also devoted to alternative methodologies for measuring power. Power measurement research by El-Ansary, Wilkinson and Hunt and Nevin was highlighted.

Organization theory, market structure theory and marketing research findings provide a wealth of data concerning the relationship between control and performance. Organization theorists have examined the relationship between organizational effectiveness and the amount, distribution and concordance (or agreement) of control perceived to be exercised by various echelons in the organization hierarchy.

Market structure theory suggests that structure determines conduct, e.g., the ability to influence, and that conduct determines market performance. Thus, market structure-conduct-performance theory explains the control-performance relationship depicted in the dyadic model shown in Figure 2.1.

Research by organization theorists generally supports the view that individuals prefer more to less control over factors which affect their lives. The power-equalization or participative management theories are based upon the relationship between control and individual satisfaction. However, satisfaction was shown to be positively related, not only to the relative amount of control achieved by various echelons of an organizational hierarchy, but also

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63 Supra, p. 32.
to the total amount of control achieved throughout the organization.

The relationship between performance and satisfaction was shown to be one of mutual interaction in Figure 2.1. Studies are inconclusive with regard to determining the direction of causation between satisfaction and performance. Research by Pickle and Rungeling did demonstrate that there is a strong relationship between satisfaction and organizational performance as reported by key executives of business organizations.

A channel member's tolerance for control by another channel member on a different channel level was shown to be positively related to the former's satisfaction with the dyadic channel relationship. A study of attitudes of retailers participating in wholesaler sponsored voluntary retail cooperatives led Kendall Adams to conclude that retailers are willing to relinquish personal control over marketing activities to the extent that they are satisfied with the wholesaler's performance of the activities.

The final relationship depicted in Figure 2.1 was between a firm's tolerance for control and the level of control achieved by another firm. The actual level of control achieved by Firm A over Firm B is determined by: (1.) Firm A's desire to achieve control; (2.) Firm A's power or ability to achieve control; and (3.) Firm B's tolerance for control by Firm A.

The second chapter concluded with a brief review of two significant contributions to channel control theory. Kendall A. Adams applied the economic theorists' indifference curve analysis to graphically depict retailer marginal evaluations of different
combinations of income and freedom. The tangency of an income-freedom indifference curve with an income possibility line defines the optimum or equilibrium level of freedom for a retailer.

In a separate effort, Louis P. Bucklin proposed the use of tolerance and payoff curves to develop a model of channel control. The review of Bucklin's effort identified several limitations. The major limitations of the model are:

1.) it depicts control to be a unilateral process;
2.) the model seems to assume supplier domination;
3.) the model deals only with total control by one firm over another firm.

The perceived limitations of Bucklin's model indicate the need to modify the conceptual framework and to test that modification with empirical research. A revised model of channel control which overcomes the weaknesses of Bucklin's model is presented in Chapter 3.
Chapter 3

A CONCEPTUAL MODEL OF CONTROL

A conceptual model of channel control is presented in this chapter. It provides a more complete conceptualization of the nature of control relationships between independent enterprises engaged in an enterprise channel relationship. The conceptual model is an extension of Bucklin's model which was critically reviewed in the second chapter. It incorporates several significant features of the various conceptions of control that were presented in the second chapter. The model of channel control relates middleman and supplier perceptions of payoff at various levels of relative control. It also depicts middleman and supplier tolerance for various levels of relative control at different levels of payoff.

An Underlying Assumption: A Dilemma

The following quotation eloquently states a dilemma which faces most distribution channel members.

We are forever oscillating between two alternatives which seem mutually exclusive -- on the one hand, collective

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A coordinated team effort among organizations on various channel levels implies channel management or channel leadership. However, there is widespread disagreement among scholars and practitioners as to who should lead the channel by exercising authority and/or power.\(^5\) The disagreement is rooted in the fact that channel leadership involves channel control.

This, then, is the dilemma which organizations in a distribution channel face. Member organizations recognize that the total profits (or payoff) for all may be greater if the individual organizations subject themselves to increased relative control by some other organization in the channel. This would contribute to the achievement of one of the fundamental objectives of a business enterprise; i.e. viability through economic profits. Member organizations have another objective, however. That is, they prefer to exercise more rather than less relative control over their marketing strategy variables. Any model of control in channel relations must depict these two conflicting objectives of channel members. This dilemma serves as an underlying assumption for the conceptual model which follows.

**The Basic Relationships of a Channel Control Model**

A critical analysis in the second chapter of Bucklin's proposed model of control in distribution channels resulted in several conclusions. The following three conclusions are crucial to

efficiency won at the price of individual freedom; on the other, individual freedom equally frustrated by collective anarchy. Those who believe in a middle way which is more than a compromise do so in the faith that human beings are capable or can become capable of social organization which is both individually satisfying and collectively effective; and they have plenty of evidence for their faith. On the other hand, our knowledge of the laws involved is still rudimentary.2

There is an abundant amount of social science literature that supports the contention that organization members desire more relative control rather than less control.3 There seems to be little danger in applying these intraorganizational findings to a distribution channel system comprised of interdependent enterprises. The conclusion is that organizations in channel systems prefer more relative control over marketing strategy variables.

Increasingly, however, marketing theorists and business managers are recognizing the economic advantages of cooperation among organizations on different channel levels. In sum, channel members are recognizing that "a team effort to market a producer's product will probably help all involved."4

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4 Bruce Mallen, "A Theory of Retailer-Supplier Conflict, Control and Cooperation," p. 27.
the model of control presented below.

1. Control in distribution channels is more appropriately viewed as a mutual rather than a unilateral process.

2. There is no justifiable reason to assume that supplier domination is appropriate in all channel relationships.

3. Power and control are issue specific.

The model of channel control presented below incorporates the following three features.

1. Control in distribution channels is best depicted as a mutual relationship. The total amount of control is variable.

2. Greater system profits may be achieved if middlemen have more relative control of marketing strategy variables than suppliers.

3. Control in distribution channels is issue specific. A supplier may possess more relative control than a middleman over the length of order cycle variable while the middleman possesses more relative control over the retail shelf space allocation variable.

These features are incorporated below in the form of four functional relationships: a middleman tolerance function, a middleman payoff function, a supplier tolerance function and a supplier payoff function.

**Middleman Tolerance Function.** A middleman tolerance function is depicted in Figure 3.1. The horizontal axis represents a range of relative control possessed by a single middleman and a single supplier over a specific marketing issue or strategy issue (i.e. resale pricing or media selection for middleman advertising). The limits of the horizontal axis are complete middleman control and complete supplier control. The range between the limits represents all the combinations of relative middleman and supplier control. The vertical axis depicts the middleman and supplier's
Figure 3.1

Middleman Tolerance Function
perceptions of payoff or profits from engaging in an enterprise channel relationship.

The middleman tolerance function \( (T_m) \) shown in Figure 3.1 represents the maximum level of relative supplier control over the relevant marketing strategy issue tolerated by the middleman at each level of perceived middleman payoff. Perceived payoff is the independent variable and the maximum level of control tolerated at each level of perceived payoff is the dependent variable. At a perceived level of payoff equal to \( P_1 \), the middleman would tolerate a maximum level of relative supplier control equivalent to \( C_1 \). If the perceived payoff were increased to \( P_2 \), however, this middleman would tolerate a much higher level of relative supplier control, \( C_2 \).

The middleman tolerance function \( (T_m) \) in Figure 3.1 is positively sloped to the left of \( C_3 \). Up to the \( C_3 \) level of relative control, the middleman tolerates increased relative supplier control over the issue as his perceptions of payoff increase. However, at the level of relative control defined as \( C_3 \), the middleman tolerance function becomes vertical. Accordingly, \( C_3 \) is the maximum level of supplier control that this middleman will tolerate. No matter what additional payoff opportunities are perceived by the middleman, he will not tolerate a level of relative control over the relevant issue higher than \( C_3 \).

**Middleman Payoff Function.** The middleman payoff function \( (P_m) \) in Figure 3.2 is placed upon two axes which are identical to those in Figure 3.2. The payoff function depicts a middleman's percep-
Figure 3.2

Middleman Payoff Function
tions of his payoff at various levels of relative middleman-supplier control over the single marketing issue.

The function shown in Figure 3.2 indicates that this middleman believes that his payoff would increase with additional relative supplier control over the issue up to \( C_1 \). This possibility is consistent with the arguments that increased supplier control would result in increased coordination, efficiency and middleman profits. Beyond \( C_1 \), however, this middleman believes that his payoff would decrease at higher levels of relative supplier control. This feature is probable in cases in which local market characteristics require that the middleman exhibit a relatively high level of relative control over the relevant issue.

When placed on the same axes in Figure 3.3, the intersection of the middleman payoff and tolerance functions specifies the upper limit of relative supplier control that this middleman will accept given these functions. The two functions intersect in Figure 3.3 at a level of relative control equal to \( C_2 \). At levels of relative supplier control higher than \( C_2 \), this middleman's payoff function \( (P_m) \) lies below his tolerance function \( (T_m) \). He will not accept any level of relative supplier control greater than \( C_2 \). It was noted earlier that the vertical portion of the middleman tolerance function defines the absolute maximum level of relative supplier control that this middleman would tolerate. The intersection in Figure 3.3 occurs at a level of relative supplier control less than \( C_3 \). Thus, the maximum relative supplier control tolerated by this middleman is less than the level defined by his tolerance function.
Figure 3.3

The Middleman Side of the Control Model
alone. According to these functions, this middleman's payoff is maximized at a level of relative supplier control over the marketing strategy issue of $C_1$.

It must be noted that the two functions ($T_m$ and $P_m$) need never intersect. The middleman payoff function ($P_m$) may lie completely above or below the middleman tolerance function throughout the entire range of relative control over the marketing strategy issue.

If the middleman payoff function ($P_m$) lies above the middleman tolerance function ($T_m$) at all levels of relative control over the strategy issue, then an acceptable payoff level would exist for the middleman at each possible level of relative control over the strategy issue. On the other hand, if the middleman payoff function ($P_m$) lies below the middleman tolerance function ($T_m$) at all levels of relative control over the strategy issue, then no acceptable level of relative control exists. At each possible level of relative control, the middleman would perceive his payoff to be less than the minimum payoff acceptable as defined by his tolerance function ($T_m$).

The middleman payoff function ($P_m$) is a technical function. That is, it depicts the levels of payoff that this middleman believes would accrue to him at each possible level of relative control over a single marketing strategy issue. The middleman tolerance function ($T_m$), on the other hand, is a behavioral function. It depicts the middleman's feeling of burden or sacrifice from acceding to various levels of relative supplier control throughout the entire range of
relative control over the marketing strategy issue.

The middleman payoff and tolerance functions \((P_m \text{ and } T_m)\) together comprise one-half of the conceptual model of channel control. As was demonstrated earlier, the intersection of these two functions defines the maximum level of relative supplier control that is acceptable to the middleman. The highest point on the middleman function \((P_m)\) specifies the level of relative control over the marketing strategy variable that is perceived by the middleman to yield the highest level of middleman payoff. To complete the model, however, it is necessary to incorporate functions that represent the supplier side of the control relationship.

**Supplier Tolerance Function.** A supplier tolerance function \((T_s)\) is depicted in Figure 3.4 on axes that are identical to those in Figures 3.1, 3.2, and 3.3. The horizontal axis represents a range of relative middleman-supplier control over a single marketing strategy variable. The vertical axis represents various levels of supplier payoff. The supplier tolerance function \((T_s)\) is the locus of points which represent the maximum level of relative middleman control over the marketing strategy issue that this supplier would tolerate at each possible level of supplier payoff.

In Figure 3.4, the supplier tolerance function \((T_s)\) is shown to be negatively sloped to the right of \(C_1\). This indicates that there is a positive relationship between supplier payoff and increasing levels of relative middleman control over the marketing strategy issue. At a level of supplier payoff equal to \(P_1\), this
Figure 3.4

Supplier Tolerance Function
supplier would tolerate a very high level of relative middleman control, $C_1$, over the marketing strategy issue. However, at a lower payoff level equal to $P_2$, the supplier would tolerate only a very low level of relative middleman control, $C_2$, over the marketing strategy issue. This supplier tolerance function becomes vertical at the level of relative middleman control of $C_1$. Thus, no matter what supplier payoff opportunities exist at levels of relative middleman control over the marketing strategy issue greater than $C_1$, this supplier would not tolerate relative middleman control greater than $C_1$.

**Supplier Payoff Function.** Figure 3.5 depicts a supplier payoff function ($P_s$) along two axes which are identical to those in the preceding figures. This function represents the locus of points which define the supplier's perceptions of payoff at each possible level of relative middleman-supplier control over the marketing strategy issue. According to the function in Figure 3.5, this supplier feels that he would enjoy a payoff equivalent to $P_1$ at a level of relative supplier control equal to $C_1$. However, at a higher level of relative supplier control equal to $C_2$, the supplier believes that he would receive a payoff equal to $P_2$. At levels of relative supplier control higher than $C_2$, the supplier feels that his payoff would decline from his perceived maximum possible payoff of $P_2$ at $C_2$. The supplier payoff function ($P_s$) shown in Figure 3.5 indicates that this supplier feels that his payoff would be maximized at a very high level of relative supplier control over the marketing strategy issue.
Figure 3.5

Supplier Payoff Function
By placing the supplier tolerance function \( T_s \) and the supplier payoff function \( P_s \) upon the same axes, it is possible to identify the maximum level of relative middleman control over the marketing strategy issue that is acceptable to this supplier. When placed upon the same axes, it becomes apparent that a portion of the supplier's payoff function \( P_s \) is not acceptable to this supplier. At all levels of relative supplier control to the left of \( C_2 \) in Figure 3.6, the supplier payoff function \( P_s \) lies below the supplier tolerance function \( T_s \). At each level of relative control over the marketing strategy issue to the left of \( C_2 \), the supplier perceives his payoff to be less than the minimum acceptable payoff as defined by his tolerance function \( T_s \). Thus, although the supplier tolerance function \( T_s \) defines the absolute maximum level of relative middleman control tolerated by this supplier as \( C_1 \), this supplier payoff function \( P_s \) makes all levels of relative control to the left of \( C_2 \) unacceptable to this supplier. In an effort to maximize his payoff, this supplier would seek to maintain a level of relative control over the marketing strategy issue equivalent to \( C_3 \).

Again, it is appropriate to recognize that the supplier tolerance function \( T_s \) and the supplier payoff function \( P_s \) need never intersect. The supplier payoff function \( P_s \) may lie above or below the supplier tolerance function \( T_s \) throughout the entire range of relative control levels.
Figure 3.6

The Supplier Side of the Control Model
Also, the supplier payoff function \( P_s \) is defined as a technical function. It represents the payoff levels that the supplier feels would accrue to him at each level of relative control over the marketing strategy issue. The supplier tolerance function \( T_s \) is a behavioral function. It depicts the supplier's feeling of burden or sacrifice from acceding to various levels of relative supplier control throughout the entire range of relative control over the marketing strategy issue.

The supplier payoff and tolerance functions represent the second half of the complete conceptual model of channel control. Combined with the middleman payoff and tolerance functions upon a single set of axes, the four functions define the absolute limits of relative supplier and middleman control over a marketing strategy issue and the range of relative control within which the middleman and supplier would bargain to achieve their profit and control objectives.

**The Complete Model of Control in an Enterprise Marketing Channel**

When combined on a single set of axes, the four functional relationships described above for a middleman and supplier and a specific marketing strategy issue comprise the complete model of control in an enterprise marketing channel. The complete model is shown in Figure 3.7. The four functions depicted in the model define the absolute limits of relative middleman-supplier control and the range of relative control within which the two parties would bargain to maximize their respective payoff.
Figure 3.7

A Complete Model of Control in an Enterprise Marketing Channel
The vertical portions of the middleman tolerance function \((T_m)\) and the supplier tolerance function \((T_s)\) in Figure 3.7 define the absolute limits of relative control tolerated by the middleman and supplier respectively over the marketing strategy issue. According to his tolerance function \((T_m)\), the middleman will not tolerate any level of relative control which falls to the right of \(C_6\) along the horizontal axis. Also, the supplier will not tolerate any level of relative control that falls to the left of \(C_1\) along the horizontal axis.

The payoff functions of the supplier and middleman further restrict the relevant range of relative control. The supplier payoff function \((P_s)\) lies below his tolerance function \((T_s)\) at all levels of relative control to the left of \(C_2\). Therefore, because his perceived payoff is less than the minimum required according to his tolerance function, all levels of relative control to the left of \(C_2\) are clearly unacceptable to the supplier.

Similarly, the middleman's payoff function \((P_m)\) falls below his tolerance function \((T_m)\) at all levels of relative control to the right of \(C_5\). All levels of relative control to the right of \(C_5\) are unacceptable to the middleman since his perceived payoff within that range is less than the minimum level required according to his tolerance function \((T_m)\).

According to the payoff functions shown in Figure 3.7 \((P_m\) and \(P_s)\), the middleman perceives his payoff to be maximized at a level of relative control equal to \(C_3\) over the marketing strategy issue and the supplier perceives his payoff to be maximized at a
level of relative control of $C_4$. With their perceived respective payoffs maximized at different levels of relative control over the marketing strategy issue, the middleman and supplier may bargain to reach a compromise level of relative control and payoff, or, the parties may engage in attempts to shift their own or the other party's payoff and/or tolerance functions.

A straightforward middleman-supplier bargaining session might result in the two parties agreeing to a level of relative control over the marketing strategy issue that is between $C_3$ and $C_4$ on the relative control axis of Figure 3.7. This agreement would yield less than maximum payoffs to both the middleman and supplier.

A second group of alternatives is available to the middleman and supplier. Each or both of the members of the enterprise marketing channel could undertake any one of several strategies designed to alter the heights and/or slopes of the other's payoff or tolerance function. The objective, of course, of such strategies would be to enable the channel member to achieve his payoff and relative control objectives.

**Altering the Payoff Functions**

Bucklin has indicated that there are three basic strategies available to suppliers to shift middleman payoff functions.\(^6\) The

\(^6\) This discussion of alternative strategies available to both middlemen and suppliers to alter the heights and slopes of the other's payoff and tolerance functions is an extension of the strategies suggested by Louis P. Bucklin, "A Theory of Channel Control," pp. 43-46.

\(^7\) Ibid., p. 43.
strategies are reviewed below and it is noted in each case that the strategies may be used by a middleman to affect the supplier's payoff function.

Reduction of Competition. Bucklin noted that a "...reduction of competition among a supplier's middlemen permits each to take advantage of the brand's market power in his individual territory, shifting the middleman's payoff function higher."\(^8\) This reduction of intrasystemic competition may be achieved by restraining middlemen to specific geographic territories or by maintaining a common resale price among all middlemen.

A complementary strategy is available to a middleman seeking to shift a supplier's payoff function upward to allow the middleman to achieve a higher payoff level and/or a higher relative control level. The middleman may reduce intersystemic competition by discontinuing competing suppliers' brands or by giving increased attention to the supplier's brands whose payoff function is to be shifted upward.

Enhancement of the Demand-generating Power of the Marketing Programs. This alternative is available to both middlemen and suppliers to shift the other enterprise channel member's payoff function. The supplier may shift the middleman's payoff function upward by either improving his own marketing programs or by offering meaningful suggestions to the middleman to improve his marketing

\(^8\)Ibid.
program. Similarly, the middleman may shift the supplier payoff function upward by improving the demand-generating power of his marketing program or by offering suggestions to the supplier based upon local market knowledge that would increase the demand-generating power of the supplier's marketing program.

**Use of Incentives.** Incentives available to suppliers to improve middleman payoff include margin changes, payments for shelf space, retailer deals for special displays, subsidization of retail fixtures, push money, sales contests, discounts for advance purchase, cooperative advertising allowances, etc. These alternatives provide, perhaps, the greatest flexibility to the supplier's ability to shift the middleman's payoff function.

Incentives are also available to middlemen to use to shift the supplier's payoff function upward. Special sales training programs on the supplier's products, maintenance of an excellent service department to repair minor product defects and special efforts to help a supplier move a particularly slow moving item are only a few of the incentives that a middleman may use.

**Altering the Tolerance Functions**

The middleman and supplier may also utilize any one or several of many strategies available to shift the other's tolerance function. Five strategies that a supplier might use to shift a middleman's tolerance function have been previously indicated by

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*ibid.*, p. 44.
However, a sixth strategy must be recognized.

The Use of Rational Appeals. Oftentimes, a middleman and a supplier do not agree to engage in an enterprise marketing channel relationship simply because they are not aware of the payoff opportunities. Such a situation was represented in grocery supermarkets and drug manufacturers before the two groups entered into enterprise channel relationships. Until the payoff opportunities were acknowledged by both groups, their respective tolerance functions prohibited them from engaging in a channel relationship. Once aware of the payoff opportunities, the tolerance function of the suppliers and/or manufacturers shifted to allow an enterprise marketing channel relationship.

Recognition of the Mutuality of Control. Bucklin suggested that a supplier may shift a middleman's tolerance function to the right by giving the middleman greater influence over some policy developments that affect his behavior.\textsuperscript{11} This suggestion is based upon empirical research which supports the mutuality view of control.\textsuperscript{12}

The same evidence supports the view that a middleman could shift a supplier's tolerance curve to the left by allowing him to exercise greater control over policy decisions which govern his

\textsuperscript{10} Ibid., pp. 44-46.

\textsuperscript{11} Ibid., p. 46.

\textsuperscript{12} Jerald G. Bachman, Clagett G. Smith and Jonathan A. Slesinger, "Control, Performance and Satisfaction: An Analysis of Structural and Individual Effects."
behavior. Since the total amount of control exercised is variable, either the supplier or middleman could allow the other party to increase his absolute level of control over an issue while decreasing his relative control level.

Reduction of the Number and Quality of Alternatives. A middleman's dependence upon a particular supplier is a function of the number and quality of alternatives available to the middleman. A supplier could shift a middleman's tolerance function to the right by reducing the number and/or quality of alternatives available to the middleman. This could be accomplished, for example, by driving competing suppliers out of the market.

Alternatively, the middleman can shift the supplier's tolerance function to the left by reducing the alternatives available to the supplier. This can be accomplished by acquiring a dominant position among all middlemen in the market area or by driving competing middlemen out of the market.

The Improvement of Relative Status. Research by Massy and Frank supports the contention that middleman acquiescence to supplier commands is greatest when the supplier occupies a much higher status position relative to the middleman. In other words, middleman


tolerance for supplier control will be greatest when a large and successful supplier deals with a small and commonplace middleman.\textsuperscript{15}

By improving his status position relative to a middleman as the second member of a two-level enterprise marketing channel, a supplier can increase that middleman's tolerance for relative supplier control. The same evidence supports the contention that a middleman may increase the supplier's tolerance for relative middleman control by improving his (the middleman's) own status position vis-a-vis the supplier. Success, growth and image improvement will help both middlemen and suppliers to increase others' tolerance for their control of marketing strategy issues.

The Development of Strong Role-task Norms. Bucklin hypothesized that the stronger the role-task norms of middleman behavior, the steeper the slope of the middleman's tolerance function. That is, very large increases in profits would be demanded by the middleman to encourage him to accede to higher levels of relative supplier control. While strong norms lead to a nonresponsive middleman tolerance function, they also offer the supplier "...a means of affecting his authority through appeals to specific stereotypes."\textsuperscript{16}

This same hypothesis can be reversed to apply to the slope of the supplier tolerance function. In industries in which strong role-task norms of supplier behavior exist, the middleman can use

\textsuperscript{15} Bucklin, \textit{op. cit.}, p. 45.

\textsuperscript{16} Ibid.
the norms to affect increased supplier tolerance for relative middle-
man control over specific marketing strategy issues by appealing to
supplier stereotypes.

The Establishment of Patterns of Socialization. A supplier
may obtain middleman loyalty and goodwill as well as increased
middleman tolerance for supplier control of marketing strategy issues
by performing small favors that require return benefits. A simi-
larly, a middleman may increase his supplier's tolerance for relative
middleman control over one or several marketing strategy issues by
performing favors for the supplier. Favors in this sense may range
from providing "cocktail parties" for visiting supplier executives to
giving extra promotional support to help a supplier reduce his stock
of slow-moving items.

The preceding sections have indicated several strategies
that may be used by middlemen and suppliers to alter the height and
slopes of the payoff and tolerance functions of the other member in
their two-level enterprise marketing channel relationships. These
strategies are neither mutually exclusive nor collectively exhaus-
tive. They do provide, however, ample evidence to support the con-
tention that payoff and tolerance functions may be affected by a
middleman or supplier seeking to achieve individual payoff and/or
control objectives.

\[17\] Ibid.
Implications for Decision-Makers

Thus far, the model of control has reflected functional relationships that represent the payoff perceptions and feelings about relative control levels of a single middleman and a single supplier for a single marketing strategy issue. It will be shown below that this model can be utilized to deal with at least an approximation of relative total control and with more channel members than a single middleman and a single supplier.

Simon's proposed methodology for measuring authority provides guidelines for extending this model beyond a single issue conception. Simon suggests that a measure of A's authority over B can be stated as an index or authority ratio. If V denotes the set of all possible behaviors that B can perform and S is the subset of V that B will perform at A's command, then the ratio of S to V represents a measure of A's authority over B.

El-Ansary has suggested that V can be interpreted as a finite set of marketing strategy issues. Extending Simon's measurement suggestion, it is possible to weight the finite set of marketing strategy issues in terms of their importance and then compute a weighted index of A's authority over B.

Using the same logic as suggested by Simon and El-Ansary,

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the proposed conceptual model of channel control in an enterprise marketing channel can apply to relative control over all relevant marketing strategy issues. By weighting the issues and aggregating the payoff and tolerance functions across these issues, a model which approximates the relationships of perceived payoff and feelings about relative middleman-supplier control for all issues can be developed.20

As discussed in all previous sections, the proposed model of channel control is dyadic; i.e. it relates payoff functions and tolerance functions for two enterprise marketing channel members. Even as a dyadic representation, the model can be used by a middleman or supplier to achieve individual payoff or relative control objectives. However, a supplier could develop payoff and tolerance functions that are averages for all or specific groups of his middlemen (T_m-avg and P_m-avg). By indicating his own payoff and tolerance functions and analyzing the four relationships (T_s, P_s, T_m-avg, and P_m-avg), the supplier could identify the average upper and lower boundaries of tolerable relative supplier control and design his bargaining strategy to achieve his profit and/or relative control objectives.21 It is proposed that the development of average middleman payoff and tolerance functions for a single, important marketing strategy issue offers greater benefit to an individual supplier

20El-Ansary and Robicheaux, op. cit., p. 20.
21Ibid.
than does an estimate of the relative total control relationship which aggregates a finite list of weighted issues.

A Review of the Control Model Concepts

The major purpose of this chapter was to develop and explicate the conceptual model which forms the basis for the empirical portion of this study. In summary, it is appropriate to review the basic concepts that were initially defined in the first chapter and incorporated in the model throughout this third chapter. Table 3.1 summarizes the important concepts and indicates the sources whose earlier works served as bases for the conceptual definitions.

The model of control in an enterprise marketing channel incorporates the following features which were absent from earlier models of channel control:

1. the model was designed specifically to represent the nature of the distribution channel control relationship;

2. the model is easy to operationalize;

3. the model reflects modern social scientists' conceptions of control which include:
   a.) control is a mutual process,
   b.) the total amount of system control is variable,
   c.) control is issue specific;

4. the model can readily be extended across a wide range of marketing strategy issues;

5. the model provides for the aggregation of payoff and tolerance functions for a group of channel members on the same channel level.

Chapter 4 presents the methodological characteristics of the study. The nature of field studies is discussed and the operational definitions of payoff and tolerance are presented. The sample design and the method of data collection utilized are also presented.
Table 3.1
A Summary of the Key Control Model Concepts

<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>CONCEPTUAL DEFINITION</th>
<th>SOURCE</th>
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<tbody>
<tr>
<td>Control</td>
<td>a channel member's ability to predict events and achieve desired outcomes</td>
<td>Katz and Kahn,</td>
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<td>Stern, Baligh,</td>
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<td></td>
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<td>Bucklin</td>
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<tr>
<td>Relative</td>
<td>the amount of control exercised by a single channel member relative to the total</td>
<td>Homans,</td>
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<td>Control</td>
<td>amount of control exercised in the channel system</td>
<td>Tannenbaum,</td>
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<td>Deutsch, Likert,</td>
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<tr>
<td>Payoff</td>
<td>the profits that are perceived to accrue to an individual firm or group of firms as</td>
<td>Bucklin</td>
</tr>
<tr>
<td></td>
<td>a result of engaging in an enterprise marketing channel relationship</td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>the individual firm's or group of firms' feeling of burden and sacrifice incurred</td>
<td>Bucklin</td>
</tr>
<tr>
<td></td>
<td>from acceding to relative control by another firm or group of firms on another</td>
<td></td>
</tr>
<tr>
<td></td>
<td>channel level</td>
<td></td>
</tr>
</tbody>
</table>
The major portion of the fourth chapter is devoted to the detailed specification of the statistics used to analyze the data collected. Chapter 4 concludes with a discussion of the validity and reliability of the research instrument and an a priori assessment of some perceived limitations of the study.
Chapter 4

RESEARCH METHODOLOGY

The conceptual model presented in the third chapter served as the basis for the hypotheses investigated in this study. In this fourth chapter, the nature of the research is discussed and the operational definitions of the terms used in the hypotheses are identified.

The sampling and data collection procedures are presented and evaluated. Also, the six hypotheses evaluated and the specific procedures used to analyze the hypotheses are indicated. Finally, the validity and reliability of the research findings and the perceived limitations of the research are discussed.

Nature of the Research

This research is classified as a field study. "Field studies are ex post facto scientific inquiries aimed at discovering the relations and interactions among sociological, psychological, and educational variables in real social structures."¹ Field studies can be distinguished from laboratory experiments and field experiments.

A laboratory experiment is characterized by a high level of

control of all or almost all of the possible independent variables deemed impertinent to the problem being investigated. In a laboratory experiment, the research situation is isolated from the real world environment.

"A field experiment is a research study in a realistic situation in which one or more independent variables are manipulated by the experimenter under as carefully controlled conditions as the situation will permit." The distinction between a laboratory experiment and a field experiment is a matter of degree. A field experiment is characterized by less control than laboratory experiments.

In comparison to laboratory experiments and field experiments, field studies are characterized by a lesser degree of control of possible independent variables. Katz indicated that field studies may be classified as either exploratory or hypothesis-testing. However, Scott argued that the distinction between exploratory and hypothesis-testing studies is not entirely satisfactory.

Most field research involves concurrent exploration and hypothesis testing. Scott encouraged researchers to develop theoretical models which guide field research.

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2 Ibid., p. 382.


Operational Definition of Terms

For the purpose of this study, payoff was defined as the annual net profits that are perceived to accrue to an individual middleman or dealer as the result of engaging in an enterprise marketing channel relationship. To operationalize this term for empirical investigation, five levels of payoff were specified.

Return Level 1. The net profits or payoff that the dealer makes decrease 15 to 25 percent.

Return Level 2. The net profits or payoff that the dealer makes decrease 5 to 15 percent.

Return Level 3. The net profits or payoff that the dealer makes remain about the same as they presently are.

Return Level 4. The net profits or payoff that the dealer makes increase 5 to 15 percent.

Return Level 5. The net profits or payoff that the dealer makes increase 15 to 25 percent.

The five levels of payoff represent five points along the vertical axis of the relative control model shown in Figures 1 to 7 of the preceding chapter.

Relative control was defined as the amount of control exercised by a single channel member compared to the total amount of control exercised in the enterprise channel system by the two members over some channel issue. Five specific levels of relative middleman-supplier control over resale pricing were defined to operationalize the concept of relative control. Thurstone's law of comparative judgement was used to assign numerical values to each of the five statements and thus generate an interval scale for relative control levels.

No attempt was made to identify component parts of control;
e.g., legitimate authority, persuasion, or coercion. Each of the
five levels of relative control over resale pricing was defined in
terms that are meaningful to the retail dealers included in the
study. Each statement represents a supplier's resale price policy
that is applicable to all dealers. The five levels of relative
control were stated as follows: \(^5\)

**Control Level 1.** Original Wholesale Supply, Inc. offers
no suggested retail price and you are free to charge
your customers any price that you desire for Brand X
carpet.

**Control Level 2.** Original Wholesale Supply, Inc. offers
a suggested retail price but you may freely deviate
up or down from that suggestion in setting your retail
price on the Brand X carpet.

**Control Level 3.** Original Wholesale Supply, Inc. urges
you to set your retail price within a range of 20 to
80 percent markup over the delivered cost that you
pay for Brand X carpet, but you may sometimes deviate
up or down from that range.

**Control Level 4.** Original Wholesale Supply, Inc. sets a
range of 30 to 60 percent markup over the delivered
cost that you pay for Brand X carpet within which you
must set your retail price.

**Control Level 5.** Original Wholesale Supply, Inc. has a
policy that you and all dealers must set your retail
price on Brand X carpet at 40 percent above the
delivered cost that you pay for those products.

Dealer tolerance for supplier control over resale pricing
reflects an individual dealer's feeling of burden and sacrifice
incurred from acceding to supplier resale price control. An

\(^5\) Original Wholesale Supply, Inc. and Brand X are two
pseudonyms used throughout this dissertation for the actual names
of the carpet distributor and national carpet brand used in this
study.
individual dealer's tolerance function represents the maximum level of relative supplier resale price control tolerated by the dealer at each possible level of dealer payoff. An average dealer tolerance function represents the average maximum level of relative supplier resale price control tolerated by a group of retail carpet dealers.

A generalized attitude measurement technique, the semantic differential, was selected to measure the dealers' attitudes about relative supplier control and dealer payoff combinations. This technique was utilized for three major reasons.

First, Bucklin suggested that the measurement of attitudes could be related to a channel member's tolerance for control.  

Second, Osgood's research indicated that the most frequently used scales are interval scaled. Third, Osgood has indicated that evaluative adjective pairs alone can be effectively used to measure attitudes.

Sample Design

A purposive (nonprobability) sampling procedure was utilized. There are numerous examples of the use of purposive sampling in

\footnote{Bucklin, op. cit., p. 47.}


\footnote{Ibid., p. 195.}
marketing. The entire population of rug and carpet dealers who carried one manufacturer's product line with the national brand and who were located within the geographic scope of the study (New Orleans and Baton Rouge, Louisiana) was surveyed.

The major limitation of a nonprobability sample is a resulting inability to generalize research findings beyond the selected sample. In this research, however, this is not a limitation. The primary objective of the research was to determine the directions and shapes of payoff and tolerance functions for a particular channel group. Given that the universe for this study was comprised of New Orleans and Baton Rouge carpet and rug retailers supplied by a single carpet supplier, then the issue of generalizability beyond that universe is moot.

Method of Data Collection

A personally administered structured-direct questionnaire was used to collect data from the dealer respondents. The retail store owner or manager was interviewed. The one with the greatest interaction with the carpet supplier was selected. Since this research was limited to a small population, it was feasible for the researcher to personally administer the questionnaire to all respondents. Also, since the time required for the respondent to complete the questionnaire was considerable, the personal administration was necessary

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to minimize nonresponse bias. A structured-direct questionnaire was utilized because the information sought was relatively complex and this method insured that each dealer received the same question format. Also, this type of questionnaire facilitated the tabulation of collected data.

There are four major problems generally associated with the use of structured-direct questionnaires. Use of such questionnaires requires the assumption that the words used mean the same to all respondents. The personal administration of the questionnaire by the researcher minimized the danger of violating this assumption.

A second necessary assumption is that the responses obtained are responses to the intended question. In other words, there is a danger that responses may be triggered by certain words and those responses may not be accurate for the real question. Again, personal administration and the opportunity to answer respondent requests for clarification minimized this danger.

Third, the assumption must be made that the respondent reactions can be neatly categorized into the categories chosen by the researcher. Only careful planning of the questionnaire and knowledge of the nature of the situation can result in a questionnaire that satisfies this assumption. Preliminary interviews were conducted to minimize the dangers inherent in violating this assumption.

Finally, the structured-direct questionnaire assumes that

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all important reactions can be ascertained by rational, conscious, and verbalized responses to direct questions. The presence of the researcher in all interview situations provided an opportunity to witness any reactions by the respondents that were not recognized in the questionnaire.

Interviews with representatives of Original Wholesale Supply, Inc. and with some Brand X carpet dealers were conducted in an effort to minimize the possibility of violating the assumptions discussed above. No dealers included in the preliminary interviews were included in the final group of dealers surveyed.

Part I of the questionnaire (see Appendix A) was designed to obtain data that enabled the estimation of interval scale values for the five possible supplier resale price policies. For ten pairs of resale price policies, each dealer was asked to indicate which policy was indicative of greater relative supplier control over resale pricing. Thurstone's law of comparative judgement was used to generate the interval scale values.

An indirect approach was taken to obtain an estimate of the dealer tolerance function. In operationally defining tolerance above, it was indicated that the semantic differential technique was used to measure dealer attitudes about relative supplier control level and payoff level combinations.

The semantic differential technique measures concept meaning for an individual in an objective manner. In this study, a concept was a combination of a single relative control level and a level of change in dealer payoff. Each dealer respondent was given
a concept to be differentiated and a set of bipolar adjectival scales on which to differentiate. The respondent indicated for each adjectival pair for each concept the direction and intensity of his association on a seven-point scale.

The seven scale positions were defined as follows:

Polar Term A

(1) Very A
(2) Quite A
(3) Slightly A
(4) Neither A nor B or equally A and B
(5) Slightly B
(6) Quite B
(7) Very B

A seven point scale was selected because Osgood's research found this to be most effective in discriminating.\(^{11}\)

Part II of the questionnaire (refer to Appendix A) contained the twenty-one concepts tested using six sets of bipolar adjectives with evaluative factor loadings. The bipolar adjectives were selected on the basis of their factor loadings and their appropriateness for the concepts being evaluated. The twenty-one concepts were each stated on a separate page to discourage comparison by the respondents. The six scales appeared below each statement. The concepts were arranged in a completely random fashion to eliminate

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\(^{11}\) Osgood, et. al., op. cit., p. 85.
order bias. Also, the direction of some of the bipolar adjectives was reversed to minimize response bias tendencies. Two examples are presented below.

Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for the Brand X carpet. Also, your net profits remain about what they are now.

Unpleasant Good Valuable Awful Fair Sad

Pleasant Bad Worthless Nice Unfair Happy

A dealer respondent indicated his feelings about selling the Brand X carpet with this resale price policy and net profits remaining about what they are now. Another example is:

Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price. Also, your net profits increase 5 to 15 percent over your present level of net profits.

Unpleasant Good Valuable Awful Fair Sad

Pleasant Bad Worthless Nice Unfair Happy

Nineteen other combinations of resale price policies and dealer payoff levels appeared in the dealer questionnaire. Each combination was interpreted as a concept.

The data relevant for the estimation of the dealer payoff function were obtained from a series of five forced choice questions (see Appendix A, Part III). A direct question approach was utilized because the payoff function represents the dealers' perceptions of payoff at each level of relative control. How the dealers
think their payoff or net profits will be affected at each level of relative control guides their behavior. An example of the type of question used to discover the dealers' perceptions of the effects of various supplier resale price policies is presented here.

Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for the Brand X carpet.

___ your net profits will decrease 15 to 25 percent
___ your net profits will decrease 5 to 15 percent
___ your net profits will remain about what they are now
___ your net profits will increase 5 to 15 percent
___ your net profits will increase 15 to 25 percent

Analysis of Data Collected

Parametric statistical techniques were used to analyze the data collected by the questionnaires. Osgood, Suci and Tannenbaum indicate that the frequently used semantic differential bipolar adjectives are interval scaled.\(^\text{12}\) Thurstone's law of comparative judgement was used to generate interval scaled values for the five levels of relative control. The five levels of payoff defined above are ordinal-scaled. These levels were upgraded to interval-scale level to allow the use of parametric statistical techniques.

Table 4.1 presents in summary form the type of data collected from respondents or computed from their responses, the notation utilized, the exact source of the data, and the operation utilized to generate the data (where appropriate).

In Part I of the research instrument, each subject indicated which resale price policy he felt was indicative of greater relative

\(^\text{12}\) Ibid., p. 146.
Table 4.1
Summary Table of Data Types, Notation, Sources and Operations

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Data Notation</th>
<th>Data Source</th>
<th>Part I</th>
<th>Part II</th>
<th>Part III</th>
<th>Generated</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealer evaluations of the relative control indicated by the resale price policies</td>
<td>PO&lt;sub&gt;k,k'&lt;/sub&gt;, k = control levels</td>
<td>Questionnaire</td>
<td>x</td>
<td></td>
<td></td>
<td>Generated</td>
<td>Respondents' perceptions of relative supplier control implied by five resale price policies. (Results are presented in Appendix B.)</td>
</tr>
<tr>
<td>Percentage of dealer responses to resale price policy paired comparisons</td>
<td>PT&lt;sub&gt;k,k'&lt;/sub&gt;, k = control levels</td>
<td>Questionnaire</td>
<td>x</td>
<td></td>
<td></td>
<td>Generated</td>
<td>PT&lt;sub&gt;k,k'&lt;/sub&gt; = ( \frac{\sum PO_{k,k'}}{n} ), n = number of dealers surveyed</td>
</tr>
<tr>
<td>Z-scores for Thurstone Law of Comparative Judgements</td>
<td>ZSC&lt;sub&gt;k,k'&lt;/sub&gt;</td>
<td>Questionnaire</td>
<td>x</td>
<td></td>
<td></td>
<td>Generated</td>
<td>Taken from a standard normal distribution probability table</td>
</tr>
<tr>
<td>Sum of Z-scores for each resale price policy</td>
<td>SUMZ&lt;sub&gt;k&lt;/sub&gt;</td>
<td>Questionnaire</td>
<td>x</td>
<td></td>
<td></td>
<td>Generated</td>
<td>SUMZ&lt;sub&gt;k&lt;/sub&gt; = ( \sum (Z\text{-scores for each policy } k) )</td>
</tr>
<tr>
<td>Relative control level interval scale</td>
<td>V&lt;sub&gt;k&lt;/sub&gt;</td>
<td>Questionnaire</td>
<td>x</td>
<td></td>
<td></td>
<td>Generated</td>
<td>V&lt;sub&gt;k&lt;/sub&gt; = V&lt;sub&gt;k-1&lt;/sub&gt; + d&lt;sub&gt;n-1,n&lt;/sub&gt;</td>
</tr>
<tr>
<td>Type of Data</td>
<td>Data Notation</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>Gen.</td>
<td>Operation</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
<td>---</td>
<td>----</td>
<td>-----</td>
<td>------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Dealer evaluations of control and payoff level combinations</td>
<td>$S_{i,j,k,l}$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$i=$dealer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$j=$payoff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$k=$control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$l=$scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual dealer composite evaluations for each concept</td>
<td>$CS_{i,j,k}$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average dealer composite evaluation for each concept</td>
<td>$ACS_{j,k}$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum relative control level tolerated by a dealer at each payoff level</td>
<td>$MC_{i,j}$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dealer perception of change in payoff</td>
<td>$PP_{i,k}$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average dealer perception of change in payoff at each control level</td>
<td>$APP_{k}$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dealer payoff function equation</td>
<td>$P_m = f(k)$</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.1 (continued)

- Dealer evaluations of control and payoff level combinations: $S_{i,j,k,l}$
  - $i=$dealer
  - $j=$payoff
  - $k=$control
  - $l=$scale

- Individual dealer composite evaluations for each concept: $CS_{i,j,k}$

- Average dealer composite evaluation for each concept: $ACS_{j,k}$

- Maximum relative control level tolerated by a dealer at each payoff level: $MC_{i,j}$

- Dealer perception of change in payoff: $PP_{i,k}$

- Average dealer perception of change in payoff at each control level: $APP_{k}$

- Dealer payoff function equation: $P_m = f(k)$
Table 4.1 (continued)

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Data Notation</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>Gen.</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression of concept evaluations against payoff levels</td>
<td>$CS_{i,j,k} = f(j)$</td>
<td></td>
<td></td>
<td></td>
<td>$x$</td>
<td>Regression $CS_{i,j,k} = a + bj$</td>
</tr>
<tr>
<td>Regression of concept evaluations against control levels</td>
<td>$CS_{i,j,k} = f(k)$</td>
<td></td>
<td></td>
<td></td>
<td>$x$</td>
<td>Regression $CS_{i,j,k} = a + b(V_k)$</td>
</tr>
<tr>
<td>Dealer tolerance function</td>
<td>$T_m = f(j,k)$</td>
<td></td>
<td></td>
<td></td>
<td>$x$</td>
<td>Regression $V_k = a + bj$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$V_k = a + bj + cj^2$</td>
</tr>
</tbody>
</table>
supplier control for ten pairs of such policies. A simple frequency tabulation yielded the data needed to compute interval scale values for the five resale price policies used in the study.

In Part II of the research instrument, each subject responded to twenty-one concepts by checking one of seven points on each of six bipolar scales. The checks were converted into numerical values by assigning the least favorable location a value of 1, the next least favorable a value of 2, etc. The most favorable position was assigned a value of 7.

In Part III of the research instrument, each subject indicated his perception of the impact each of the five possible supplier resale price policies would have upon his payoff or net profits. An indication that a particular policy would result in a 15 to 25 percent decrease in dealer net profits was assigned a numerical value of 1; a check indicating a 5 to 15 percent net profit decrease received a value of 2; etc. A check indicating a 15 to 25 percent net profit increase was assigned a value of 5.

From these three sets of data, all other data necessary to test the hypotheses were generated. Table 4.1 indicates the appropriate notation and the operations required. Details of the computations are discussed below where appropriate. The following hypotheses were examined.

**Hypothesis One**

\[ H_{01} \quad \text{There is no significant difference in the measures of dealers' perceptions of payoff at each of five levels of relative supplier control.} \]
The objective of the first hypothesis was to determine if there was any significant difference in the average dealer perceptions of payoff or change in net profits for each of five supplier resale price policies. To test this hypothesis, a treatments-by-subjects, or repeated measures, design and one-way analysis of variance was performed upon the dealers' perceptions of payoff at each level of control \((PP_i,k)\). The format for the data is shown in Table 4.2.

The null hypothesis \((H_{01})\) was rejected if the F-value computed could have occurred by chance five or less times in one hundred cases (i.e. a .05 level of significance). If the first hypothesis was rejected, then the conclusion was drawn that the dealer perceptions of payoff differ significantly at different resale price policies. Thus, the average dealer payoff function \((P_{m-avg})\) was not horizontal. If, on the other hand, the computed F-value could have occurred by chance more than five times in one hundred cases, then the first null hypothesis was not rejected.

**Hypothesis Two**

\(H_{02}\) A quadratic equation of the form \(y = a + bx + cx^2\) does not describe the dealers' perceptions of payoff at various levels of supplier control better than a straight line equation of the form \(y = a + bx\).

The objective of this hypothesis was to determine if the dealer payoff function had a constant slope or was curvilinear. The conceptual model in Figure 2.7 depicts the middleman (dealer) payoff function as nonlinear. This hypothesis sought to verify that depiction.
Table 4.2
Display Format for Dealer Perceptions of Payoff at Different Levels of Relative Supplier Control

<table>
<thead>
<tr>
<th>Dealer Respondent</th>
<th>Relative Control Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>PP_{1,1}</td>
</tr>
<tr>
<td>2</td>
<td>PP_{2,1}</td>
</tr>
<tr>
<td>3</td>
<td>PP_{3,1}</td>
</tr>
<tr>
<td>\ldots</td>
<td>\ldots</td>
</tr>
<tr>
<td>\ldots</td>
<td>\ldots</td>
</tr>
<tr>
<td>\ldots</td>
<td>\ldots</td>
</tr>
<tr>
<td>n</td>
<td>PP_{n,1}</td>
</tr>
</tbody>
</table>
To test this hypothesis, two regression equations were computed. The individual dealer perceptions of changes in payoff at each level of relative control \( PP_{i,k} \) were regressed against the values computed for the levels of relative control (the interval scale values computed for the \( k \) relative control levels). The first equation form used was linear: \( PP_{i,k} = a + b(V_k) \). Second, a curvilinear equation was used in the regression: \( PP_{i,k} = a + b(V_k) + c(V_k)^2 \).

The selection of the equation form which better explained the relationship between dealer perceptions of payoff and levels of relative control (i.e., the dealer payoff function) was based upon the computed value of \( R^2 \) in the two regressions. Whichever equation form yielded the largest \( R^2 \) and was determined to be statistically significant (F-test) was accepted.

If the equation form \( y = a + bx \) yielded a higher \( R^2 \) that was statistically significant, then the second hypothesis was not rejected. If the equation form \( y = a + bx + cx^2 \) yielded a higher \( R^2 \) that was statically significant, then the second null hypothesis was rejected. If the second hypothesis was rejected, then the dealer payoff function for this group of dealers was determined to be curvilinear. In other words, dealer profits were perceived to increase with additional supplier control within some range and then to decrease with additional supplier control.
Hypothesis Three

$H_{03}$ There is no significant difference among the measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and levels of relative supplier control.

The third hypothesis was designed to determine if there was a significant difference in the dealers' attitudes toward each of twenty payoff (levels 2 to 5) and control (levels 1 to 5) combinations. A treatments-by-treatments-by-subjects design and two-factor analysis of variance was used to test this hypothesis (see data format in Table 4.3). The dealers' composite attitude scores ($CS_{j,k}$) for each payoff and control level combination were analyzed. The analysis of variance procedure indicated whether or not the dealers' attitude scores differed significantly across the twenty payoff and control level combinations.

An F-value was computed for the differences between treatments (i.e. the twenty payoff and control level combinations). If the computed F-value could have occurred by chance more than five times in one-hundred cases (i.e. a .05 level of significance), then the third null hypothesis was not rejected. If, on the other hand, the computed F-value could have occurred by chance only five or less times in one-hundred cases (i.e. a .05 level of significance), then the third null hypothesis was rejected. This would indicate that the dealers' evaluations differed significantly across the twenty payoff and control level combinations.

The fourth, fifth and sixth hypotheses indicated the nature of the dealer tolerance function.
Table 4.3

Data Format for Analysis of $H_{03}$: To Test for Significant Differences in Dealer Attitudes Toward Twenty Payoff and Control Level Combinations

<table>
<thead>
<tr>
<th>Dealer Payoff Levels</th>
<th>Relative Supplier Control Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$CS_{i,j,k}$</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>$CS_{i,2,1}$</td>
</tr>
<tr>
<td>3</td>
<td>$CS_{i,3,1}$</td>
</tr>
<tr>
<td>4</td>
<td>$CS_{i,4,1}$</td>
</tr>
<tr>
<td>5</td>
<td>$CS_{i,5,1}$</td>
</tr>
</tbody>
</table>
Hypothesis Four

$H_{04}$ The measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and levels of relative supplier control are not positively related to increasing payoff levels.

The fourth hypothesis was tested to isolate the effect of increasing payoff levels upon measures of dealer attitudes toward combinations of middleman payoff and relative control levels. The conceptual model presented in the third chapter was based upon the supposition that channel middlemen prefer more rather than less economic payoff. If this supposition was correct, then the measures of dealer attitudes toward twenty combinations of four payoff and five relative control levels should have been positively related to increasing payoff levels.

To test this fourth hypothesis, the measures of the individual dealers' composite evaluations for each of twenty payoff and control level combinations were regressed against numerical values assigned to the five payoff levels ($j = 1, 2, 3, 4, 5$). A value of $j = 1$ was assigned to the payoff level described as a fifteen to twenty-five percent decrease in dealer net profits. A value of $j = 5$ was assigned to the fifteen to twenty-five percent net-profit-increase level. A regression equation of the following form was computed.

$$C_i,j,k = a + bj$$

where: $i =$ dealer respondent

$j =$ payoff levels ($j = 2, 3, 4, $ or $5$)

$k =$ relative control levels.

Table 4.4 presents the format for the data used in the
Table 4.4

Format for Determining the Effect of Payoff Levels upon Dealer Attitudes Toward Relative Control and Payoff Level Combinations

<table>
<thead>
<tr>
<th>Individual Dealer Composite Evaluation Scores (CS_{i,j,k})</th>
<th>Payoff Levels (j = 1 to 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS_{1,2,1}</td>
<td>2</td>
</tr>
<tr>
<td>CS_{1,2,2}</td>
<td>2</td>
</tr>
<tr>
<td>CS_{1,2,3}</td>
<td>2</td>
</tr>
<tr>
<td>CS_{1,2,4}</td>
<td>2</td>
</tr>
<tr>
<td>CS_{1,2,5}</td>
<td>2</td>
</tr>
<tr>
<td>CS_{1,3,1}</td>
<td>3</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
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<tr>
<td>.</td>
<td>.</td>
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<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>CS_{i,j,k}</td>
<td>j</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>CS_{n,5,4}</td>
<td>5</td>
</tr>
<tr>
<td>CS_{n,5,5}</td>
<td>5</td>
</tr>
</tbody>
</table>
regression.

The decision to reject or not reject the fourth hypothesis was based upon the following criteria:

(1.) an F-test to determine if the regression equation was significant (i.e. reject the hypothesis that $R^2=0$);

(2.) the sign of the beta coefficient computed for the payoff level independent variable ($j$);

(3.) a t-test for significance for the beta coefficient (i.e. reject the hypothesis that $b=0$).

The fourth hypothesis was rejected if a statistically significant $R^2$ was computed, the beta coefficient on $j$ (payoff levels) was greater than zero, and the computed beta coefficient was statistically significant. Rejection of the fourth hypothesis would indicate that the measures of dealer attitudes toward the twenty combinations of payoff and relative control levels were positively related to increasing levels of dealer payoff.

**Hypothesis Five**

$H_{05}$ The measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and relative supplier control levels are not negatively related to increasing levels of relative supplier control.

The objective of the fifth hypothesis was complementary to that of the fourth hypothesis. This hypothesis was tested to identify the effect of increasing levels of relative supplier control upon measures of dealer attitudes toward different combinations of payoff and relative control levels. The conceptual model of relative control presented in chapter three posited that channel middlemen prefer less relative supplier control to more relative supplier control.
control. If this was correct, then the measures of dealer attitudes toward twenty combinations of four payoff and five relative control levels should have been negatively related to increasing levels of relative supplier control.

The fifth hypothesis was tested by regressing the measures of the individual dealers' composite evaluations for each of the twenty payoff and control level combinations against the values assigned to the five relative control levels. A regression equation of the following form was computed:

\[ CS_{i,j,k} = a + b(V_k) \]

where: 
- \( i \) = dealer respondent
- \( j \) = payoff levels (j = 2, 3, 4, or 5)
- \( k \) = relative control levels
- \( V_k \) = interval scaled relative control values.

Table 4.5 presents the format for the data used in the regression. The values for \( V_k \), where \( k = 1, 2, 3, 4, \) or 5, were generated by applying Thurstone's law of comparative judgement.

The same criteria used to accept or reject the fourth hypothesis were used for the fifth hypothesis. The fifth hypothesis was rejected if a statistically significant \( R^2 \) was computed, the beta coefficient on \( V_k \) (relative control levels) was less than zero, and the computed beta coefficient was statistically significant. Rejection of the fifth hypothesis would indicate that the measures of dealer attitudes toward the twenty combinations of payoff and relative control levels were negatively related to increasing levels of relative supplier control.
Table 4.5

Format for Data Used in Regression to Determine the Effect of Relative Control Levels upon Dealer Attitudes Toward Payoff and Relative Control Level Combinations

<table>
<thead>
<tr>
<th>Individual Dealer Composite Evaluation Scores ($CS_{i,j,k}$)</th>
<th>Relative Control Scale Values ($V_k$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$CS_{1,2,1}$</td>
<td>$V_1$</td>
</tr>
<tr>
<td>$CS_{1,2,2}$</td>
<td>$V_2$</td>
</tr>
<tr>
<td>$CS_{1,2,3}$</td>
<td>$V_3$</td>
</tr>
<tr>
<td>$CS_{1,2,4}$</td>
<td>$V_4$</td>
</tr>
<tr>
<td>$CS_{1,2,5}$</td>
<td>$V_5$</td>
</tr>
<tr>
<td>$CS_{1,3,1}$</td>
<td>$V_1$</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>$CS_{i,j,k}$</td>
<td>$V_k$</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>$CS_{n,5,4}$</td>
<td>$V_4$</td>
</tr>
<tr>
<td>$CS_{n,5,5}$</td>
<td>$V_5$</td>
</tr>
</tbody>
</table>
Hypothesis Six

$H_{06}$ A quadratic equation of the form $y = a + bx + cx^2$ does not describe the dealers' tolerance for relative supplier control better than a straight line equation of the form $y = a + bx$.

The objective of the sixth hypothesis was to determine if the dealer tolerance function had a constant slope or was curvilinear. The conceptual model in Figure 2.7 depicted the middleman (dealer) tolerance function to be kinked -- consisting of two linear portions. It was shown to have a constant, positive slope throughout a range of relative control and then to become vertical. This relationship can be better explained by a curvilinear equation than by a constant slope or linear equation.

The individual dealer tolerance function is the locus of points that represent the maximum level of relative supplier control over resale pricing tolerated by the dealer at each level of perceived dealer payoff. The average dealer tolerance function was determined by analyzing dealer attitudes toward various combinations of relative control levels and levels of changes in dealer payoff or profits. Each dealer surveyed evaluated and reported his feelings toward each combination of a supplier resale price policy (a relative control level) and a dealer payoff level (level of change in dealer profits).

The dealer evaluations were stated in responses to six semantic differential bipolar adjectives for each of twenty-one concepts (combinations of control levels and payoff levels). A value of one (1) was assigned to the least favorable end of the bipolar adjective scales and a value of seven (7) was assigned to
the most favorable end of the scales. A composite score was determined by computing an average of the six values across the six adjectival scales for each concept. The resultant composite or average score represented a dealer's average evaluation or "feeling" about a particular combination of a payoff and a control level.

The maximum level of supplier control tolerated at each payoff level by a dealer was determined in the following manner. A matrix of composite semantic differential scores for twenty-one combinations of payoff and relative control levels was computed as shown in Table 4.6.

Table 4.6

Format for a Composite Semantic Differential Score Matrix for an Individual Dealer: Dealer i

<table>
<thead>
<tr>
<th>Payoff Levels (j)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS_{i,1},1</td>
<td>CS_{i,2},1</td>
<td>CS_{i,3},1</td>
<td>CS_{i,4},1</td>
<td>CS_{i,5},1</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CS_{i,1},2</td>
<td>CS_{i,2},2</td>
<td>CS_{i,3},2</td>
<td>CS_{i,4},2</td>
<td>CS_{i,5},2</td>
</tr>
<tr>
<td>3</td>
<td>CS_{i,1},3</td>
<td>CS_{i,2},3</td>
<td>CS_{i,3},3</td>
<td>CS_{i,4},3</td>
<td>CS_{i,5},3</td>
</tr>
<tr>
<td>4</td>
<td>CS_{i,1},4</td>
<td>CS_{i,2},4</td>
<td>CS_{i,3},4</td>
<td>CS_{i,4},4</td>
<td>CS_{i,5},4</td>
</tr>
<tr>
<td>5</td>
<td>CS_{i,1},5</td>
<td>CS_{i,2},5</td>
<td>CS_{i,3},5</td>
<td>CS_{i,4},5</td>
<td>CS_{i,5},5</td>
</tr>
</tbody>
</table>
Control levels 1 to 5 and payoff levels 1 to 5 were defined above. Each \( CS_{i,j,k} \) is an average semantic differential score for a combination of payoff level \( j \) and control level \( k \). \( CS_{i,1,1} \) is one dealer's composite score for a situation in which the dealer has pricing autonomy but a great decrease in his profits (15 to 25 percent decrease). It was assumed that due to the extreme loss of profits, this situation would clearly not be tolerated by any dealer. This score, \( CS_{i,1,1} \), served as an indicator of a level of evaluation that was unacceptable to the dealer. At each payoff level (2, 3, 4, and 5), all scores (\( CS_{i,j,k} \)) that were equal to or less than \( CS_{i,1,1} \) represented levels of control that were not tolerable. Thus, if \( CS_{i,1,1} \) was less than \( CS_{i,2,2} \) but greater than \( CS_{i,2,3} \), then the maximum level of supplier control tolerated at payoff level 2 was determined to be relative control level 2. The same analysis was conducted for each matrix row to determine the maximum level of relative control tolerated at each payoff level for an individual dealer. This procedure was termed the matrix checkoff procedure.

Table 4.7 indicates the format for presenting in summary form all dealer respondents' composite semantic differential scores for each combination of payoff and control levels (\( CS_{i,j,k} \)). The Maximum Relative Control Level (\( MC_{i,j} \)) tolerated by each dealer at each payoff level was determined by comparing each dealer's indicator score (\( CS_{i,1,1} \)) with his other twenty composite scores. Given the maximum relative control level tolerated by each dealer at each payoff level, it was a simple task to compute a regression equation from the data. The format for the data necessary to compute the
Table 4.7
Format for Determining the Maximum Relative Control Level
Tolerated by Each Dealer at Each Payoff Level

<table>
<thead>
<tr>
<th>Dealer</th>
<th>Value of Indicator Score CS&lt;sub&gt;1,1,1&lt;/sub&gt;</th>
<th>Payoff Levels (j)</th>
<th>Relative Control Levels</th>
<th>Maximum Relative Control Level Tolerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CS&lt;sub&gt;1,1,1&lt;/sub&gt;</td>
<td>2</td>
<td>CS&lt;sub&gt;1,2,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;1,2,2&lt;/sub&gt; CS&lt;sub&gt;1,2,3&lt;/sub&gt; CS&lt;sub&gt;1,2,4&lt;/sub&gt; CS&lt;sub&gt;1,2,5&lt;/sub&gt; MC&lt;sub&gt;1,2&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>CS&lt;sub&gt;1,3,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;1,3,2&lt;/sub&gt; CS&lt;sub&gt;1,3,3&lt;/sub&gt; CS&lt;sub&gt;1,3,4&lt;/sub&gt; CS&lt;sub&gt;1,3,5&lt;/sub&gt; MC&lt;sub&gt;1,3&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>CS&lt;sub&gt;1,4,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;1,4,2&lt;/sub&gt; CS&lt;sub&gt;1,4,3&lt;/sub&gt; CS&lt;sub&gt;1,4,4&lt;/sub&gt; CS&lt;sub&gt;1,4,5&lt;/sub&gt; MC&lt;sub&gt;1,4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>CS&lt;sub&gt;1,5,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;1,5,2&lt;/sub&gt; CS&lt;sub&gt;1,5,3&lt;/sub&gt; CS&lt;sub&gt;1,5,4&lt;/sub&gt; CS&lt;sub&gt;1,5,5&lt;/sub&gt; MC&lt;sub&gt;1,5&lt;/sub&gt;</td>
</tr>
<tr>
<td>2</td>
<td>CS&lt;sub&gt;2,1,1&lt;/sub&gt;</td>
<td>2</td>
<td>CS&lt;sub&gt;2,2,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;2,2,2&lt;/sub&gt; CS&lt;sub&gt;2,2,3&lt;/sub&gt; CS&lt;sub&gt;2,2,4&lt;/sub&gt; CS&lt;sub&gt;2,2,5&lt;/sub&gt; MC&lt;sub&gt;2,2&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>CS&lt;sub&gt;2,3,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;2,3,2&lt;/sub&gt; CS&lt;sub&gt;2,3,3&lt;/sub&gt; CS&lt;sub&gt;2,3,4&lt;/sub&gt; CS&lt;sub&gt;2,3,5&lt;/sub&gt; MC&lt;sub&gt;2,3&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>CS&lt;sub&gt;2,4,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;2,4,2&lt;/sub&gt; CS&lt;sub&gt;2,4,3&lt;/sub&gt; CS&lt;sub&gt;2,4,4&lt;/sub&gt; CS&lt;sub&gt;2,4,5&lt;/sub&gt; MC&lt;sub&gt;2,4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>CS&lt;sub&gt;2,5,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;2,5,2&lt;/sub&gt; CS&lt;sub&gt;2,5,3&lt;/sub&gt; CS&lt;sub&gt;2,5,4&lt;/sub&gt; CS&lt;sub&gt;2,5,5&lt;/sub&gt; MC&lt;sub&gt;2,5&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS&lt;sub&gt;n,2,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;n,2,2&lt;/sub&gt; CS&lt;sub&gt;n,2,3&lt;/sub&gt; CS&lt;sub&gt;n,2,4&lt;/sub&gt; CS&lt;sub&gt;n,2,5&lt;/sub&gt; MC&lt;sub&gt;n,2&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS&lt;sub&gt;n,3,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;n,3,2&lt;/sub&gt; CS&lt;sub&gt;n,3,3&lt;/sub&gt; CS&lt;sub&gt;n,3,4&lt;/sub&gt; CS&lt;sub&gt;n,3,5&lt;/sub&gt; MC&lt;sub&gt;n,3&lt;/sub&gt;</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>CS&lt;sub&gt;n,4,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;n,4,2&lt;/sub&gt; CS&lt;sub&gt;n,4,3&lt;/sub&gt; CS&lt;sub&gt;n,4,4&lt;/sub&gt; CS&lt;sub&gt;n,4,5&lt;/sub&gt; MC&lt;sub&gt;n,4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CS&lt;sub&gt;n,5,1&lt;/sub&gt;</td>
<td>CS&lt;sub&gt;n,5,2&lt;/sub&gt; CS&lt;sub&gt;n,5,3&lt;/sub&gt; CS&lt;sub&gt;n,5,4&lt;/sub&gt; CS&lt;sub&gt;n,5,5&lt;/sub&gt; MC&lt;sub&gt;n,5&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

<sub>aMC<sub>1,j</sub> = 1,2,3,4, or 5; i.e. the five relative control levels</sub>
average dealer tolerance function \( (T_{m-avg}) \) is presented in Table 4.8.

The appropriate relative control scale values \( (V_k) \) that were computed for each resale price policy were regressed against the four payoff levels \( (j = 2, 3, 4, \text{ or } 5) \). Two equations of the following form were generated:

\[
\begin{align*}
(1.) & \quad V_k = a + bj \\
(2.) & \quad V_k = a + bj + cj^2
\end{align*}
\]

where: \( V_k = \) relative control scale values

\( j = \) payoff levels \( (j = 2, 3, 4, \text{ or } 5) \)

The selection of the equation form which better explains the relationship between dealer tolerance for relative supplier control and levels of dealer payoff was based upon the computed value of \( R^2 \) in the two equations. Whichever equation yielded the larger \( R^2 \) that was determined to be statistically significant (F-test) was accepted.

If the equation form \( V_k = a + bj \) yielded a higher \( R^2 \) that was statistically significant, then the sixth hypothesis was not rejected. That is, there was a constant slope to the dealer tolerance function. If the curvilinear equation form, \( V_k = a + bj + cj^2 \), yielded a higher \( R^2 \) that was statistically significant, then the sixth hypothesis was rejected. This would indicate that the dealer tolerance function was curvilinear and the rate of change in dealer tolerance for relative supplier control varied over the range of dealer payoff levels.

Table 4.9 presents in summary form the important statistical operations and tests that were utilized in the evaluation of each of the six hypotheses. As a result of the foregoing analysis, two
Table 4.8

Format for Data Needed to Generate the Average Carpet Dealer (Middleman) Tolerance Equation

<table>
<thead>
<tr>
<th>Dealer</th>
<th>Payoff Levels (j)</th>
<th>Maximum Relative Control Level Tolerated (MC_{i,j})</th>
<th>Relative Control Scale Values (V_k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>MC_{1,2}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>MC_{1,3}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>MC_{1,4}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>MC_{1,5}</td>
<td>V_k</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>MC_{1,2}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>MC_{1,3}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>MC_{1,4}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>MC_{1,5}</td>
<td>V_k</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>n</td>
<td>2</td>
<td>MC_{n,2}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>MC_{n,3}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>MC_{n,4}</td>
<td>V_k</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>MC_{n,5}</td>
<td>V_k</td>
</tr>
</tbody>
</table>
### Table 4.9

**Summary of Statistical Tests and Operations for Each Hypothesis**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Statistical Operations and Tests</th>
</tr>
</thead>
</table>
| **H_{01}** There is no significant difference in the measures of dealers' perceptions of payoff at each of five levels of relative supplier control. | 1. Analysis of variance -- treatments-by-subjects design  
Compute F value |
| **H_{02}** A quadratic equation of the form \( y=a+bx+cx^2 \) does not describe the dealers' perceptions of payoff at various levels of relative supplier control better than a straight line equation of the form \( y=a+bx \). | 1. Regression with two equation forms  
2. Compute: a.) \( R^2 \)  
b.) F-test for significance |
| **H_{03}** There is no significant difference among the measures of the average dealers' attitudes toward twenty combinations of dealer payoff levels and levels of relative supplier control. | 1. Analysis of variance -- treatments-by-treatments-by-subjects design and factorial analysis of variance  
Compute F-value |
| **H_{04}** The measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and levels of relative supplier control are not positively related to increasing payoff levels. | 1. Regression: \( CS_{i,j,k} = a + bj \)  
2. Compute: a.) \( R^2 \)  
b.) F-test for significance  
c.) t-tests on betas |
<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Statistical Operations and Tests</th>
</tr>
</thead>
</table>
| $H_{05}$ The measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and relative supplier control levels are not negatively related to increasing levels or relative supplier control. | 1. Regression: $CS_{i,j,k} = a + bV_k$  
2. Compute: a.) $R^2$  
   b.) F-test for significance  
   c.) t-tests on beta coefficients |
| $H_{06}$ A quadratic equation of the form $y=a+bx+cx^2$ does not describe the dealers' tolerance for relative supplier control better than a straight line equation of the form $y=a+bx$. | 1. Regression with two equation forms  
2. Compute: a.) $R^2$  
   b.) F-test for significance |
important equations were generated:

1. the average dealer payoff function \( \left( P_{m-avg} \right) \):
   a.) \( P_{P_{i,k}} = a + b(V_k) \), or
   b.) \( P_{P_{i,k}} = a + b(V_k) + c(V_k)^2 \)

2. the average dealer tolerance function \( \left( T_{m-avg} \right) \):
   a.) \( V_k = a + b j \), or
   b.) \( V_k = a + b j + c j^2 \).

These two equations comprise the dealer or middleman portion of the complete model of channel control. Placement of the two equations upon a set of axes resulted in the identification of the maximum level of relative supplier control tolerated by the average dealer and identified the level of relative control at which the average dealer perceived his profits to be maximized. This was the empirical depiction of the relationships shown in Figure 3.3.

Validity and Reliability of the Research Instrument

There are no previous studies of the measurement of control in a distribution channel. Therefore, the validity and reliability of the research findings are important to contribute to their significance.

Validity. A measuring instrument is valid to the extent that it measures what it is purported to measure.\(^{13}\) The evaluation of the validity of a particular measuring instrument is dependent upon

\(^{13}\)Kerlinger, op. cit., p. 444.
the availability of some external criterion. As measures of meaning, semantic differential scores should be correlated with some independent criteria of meaning. However, there are no such criteria.

Ample evidence exists, however, to support the contention that semantic differential scales yield valid measures of meaning. Furthermore, Osgood, Suci and Tannenbaum conclude that the adjective pairs tested in their research possess a high degree of "face validity"; that is, they yield distinctions that correspond with those that most observers would make without the instrument.\(^\text{14}\)

Three types of validity can be identified.\(^\text{15}\) Content validity refers to the representativeness of the test items to the field being investigated. Marketing academicians advising the researcher served as a panel of experts judging the content validity of the instrument items. Also, preliminary interviews with rug and carpet dealers and distributor representatives contributed to the content validity of the instrument.

An instrument has predictive validity to the extent that it "works" or enables the researcher to predict. Testing for predictive validity requires the researcher to develop or obtain an external criterion against which the test results can be matched. The


\(^{15}\)See Paul E. Green and Donald S. Tull, \textit{op. cit.}, pp. 200-201.
research instrument for this study should have yielded results that indicate higher dealer evaluations of situations of high profit and autonomy and lower evaluations of low profit and autonomy situations. The instrument was considered to have face validity to the extent that these conditions were found.

**Construct validity** of an instrument refers to the understanding of why a research instrument works. Green and Tull suggest that while construct validation is very important it is often difficult to achieve.\(^{16}\) It was concluded that replication of this methodology in several channel groups is required before it is appropriate to attribute construct validity to the instrument.

**Reliability.** A measuring instrument is reliable to the extent that it is free from experimental error.\(^{17}\) Osgood, Suci and Tannenbaum indicate that the adjectival scales used in their research are quite reliable.\(^{18}\)

It was not feasible to judge the temporal consistency of the research instrument in this study, but a split-halves reliability measure was computed to estimate internal reliability. The one hundred and twenty-six (126) scores (six scales times twenty-one concepts) were divided into two equal groups to compute the split-halves reliability coefficient.

\(^{16}\)Ibid., p. 201.

\(^{17}\)Ibid., pp. 201-202.

\(^{18}\)Osgood, et. al., op. cit., pp. 126-140.
Limitations of the Research Methodology

At the outset, there appeared to be no severe limitations of this study. Each of the limitations reviewed below was discussed in its appropriate context throughout this chapter. Given the stated purpose of this study, to test for relationships hypothesized in the conceptual model, the limitations for the most part seem insignificant.

One limitation is the small sample size and the nonprobability sampling technique proposed. While this may limit the ability to generalize the findings to all carpet dealers, it is totally consistent with a stated purpose of the study; i.e. to help a supplier or group of dealers to recognize the payoff-control relationships and to better design channel bargaining strategy. In this study, the dealer group was necessarily limited by financial limitations as well as the requirement for personal interviews with dealers.

A second limitation is the use of only evaluative scales in the semantic differential. This problem was discussed in the section on data collection techniques. A more significant question is whether or not the attitudes measured with the evaluative scales have a direct relationship to behavior.

Attitude scores indicate only a disposition toward certain classes of behavior. An individual's response to a real-life situation depends upon factors other than attitude alone. Therefore,

19 Ibid., pp. 198-199; and G. David Hughes, Attitude Measurement for Marketing Strategies, (Glenview: Scott, Foresman, 1971), pp. 11-12.
it is possible to conclude only that the conceptual model underlying this research represents only how dealers and suppliers were disposed toward payoff and control levels. The model does not allow for a one hundred percent accurate prediction of behavior.

A final perceived limitation is that the study was limited to the investigation of control over a single issue in a channel group. As was indicated above, however, if the conceptual model is sound and the methodology generates valid and reliable results, then the task of expanding the study to include several important issues is relatively simple.

Summary

The fourth chapter included a presentation of the methodological attributes of this study. Initially, laboratory experiments, field experiments and field studies were distinguished. To allow for a better understanding of the hypotheses to be tested, payoff and relative control levels were operationally defined.

It was indicated in the fourth chapter that a purposive type sampling procedure and a structured-direct questionnaire were used to collect the data necessary for this study. The reasons for the selection of these survey procedures were indicated and the limitations imposed upon the researcher by these procedures were recognized. Examples of the types of questions included in the questionnaire were presented.

The major portion of Chapter 4 was devoted to a discussion of the specific analytical procedures used to evaluate each of
the six hypotheses. Particular attention was given to the specification of the criteria used to determine whether or not to reject the null hypotheses. Chapter 4 concluded with a brief discussion of the validity and reliability of the research findings. Also, the perceived limitations of the research were indicated and their significance was evaluated.

The fifth chapter is composed of the analysis of the data collected from the survey respondents in terms of the six hypotheses. The results of that analysis are interpreted in terms of strategic implications for carpet suppliers and dealers. Finally, some implications of this study for the future development of marketing theory are cited in the conclusion of the fifth chapter.
Chapter 5

CARPET INDUSTRY CHARACTERISTICS, STUDY FINDINGS AND IMPLICATIONS

Some characteristics of the carpet industry and the findings and implications of this study are presented in this fifth chapter. Data were collected from twenty retail carpet dealers in the Baton Rouge and New Orleans market areas with a personally administered structured questionnaire. The data were subjected to simple linear and quadratic regression analysis and one and two-way factorial analysis of variance. The results of that analysis are discussed in this chapter.

This chapter begins with a brief discussion of the characteristics of the tufted carpet and rug industry at the manufacturing and distribution levels. Second, the reliability of the measures of the dealers' attitudes toward hypothetical enterprise channel relationships is indicated. The generation of the interval scale values for the five resale price policies (relative control levels) is the third major topic discussed in this chapter.

Consideration is then given to each of the six null hypotheses examined in this study. The acceptance or rejection of each null hypothesis is based upon the statistical criteria specified in Chapter 4. This chapter concludes with an assessment of the implications of the findings of this dissertation for members of
the channel group studied and for the future development of marketing theory.

Some Characteristics of the Carpet Industry

The characteristics of the carpet industry should be briefly recognized before the data analysis and implications of this study can be meaningfully presented. This study focused upon retail carpet dealers' profit perceptions and their attitudes toward hypothetical channel relationships. Interpretation of the findings requires an understanding of the nature of the carpet industry at both production and distribution levels.

Carpet Producers. The carpet and rug industry is comprised of firms engaged in weaving carpets and rugs from textile yarn (Standard Industrial Classification Code 2271) and firms producing tufted products from textile fiber (Standard Industrial Classification Code 2272). The tufted carpet portion of the industry (SIC 2272) accounted for over 90 percent of broadloom carpet shipments in 1968.¹ Relatively few firms have remained in the woven carpet segment and the discussion below centers upon the tufted carpet business.

During the 1960's, sales in the industry grew at a rapid pace. Table 5.1 shows that the total value of tufted carpet and

and rug industry shipments more than doubled between 1963 and 1970. That growth was fueled in large measure by an industry technological revolution. During the 1970's and 1980's, informed sources expect the carpet industry to grow ever more dependent upon the marketing function to provide direction for continued growth and high performance.  

Table 5.1
Concentration Ratios for the Tufted Carpet and Rug Industry:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Companies</th>
<th>Value of Industry Shipments</th>
<th>Four Largest Firms</th>
<th>Eight Largest Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Dollars (000's)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>NA</td>
<td>$1898.3</td>
<td>25%</td>
<td>40%</td>
</tr>
<tr>
<td>1967</td>
<td>210</td>
<td>1426.9</td>
<td>26%</td>
<td>41%</td>
</tr>
<tr>
<td>1966</td>
<td>NA</td>
<td>1206.4</td>
<td>26%</td>
<td>43%</td>
</tr>
<tr>
<td>1963</td>
<td>167</td>
<td>801.8</td>
<td>25%</td>
<td>41%</td>
</tr>
</tbody>
</table>


Three pertinent market structure characteristics of the

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2 Ibid., p. 196.
industry are: seller concentration, product differentiation and barriers to entry. Market concentration ratios indicate the proportion of a particular industry's sales accounted for by the largest firms. Seller concentration at the manufacturing level in the carpet industry is quite low. The industry "...is highly competitive and no firm enjoys a dominant position."³ Table 5.1 shows that the largest four firms accounted for 25 percent of the total value of 1970 industry shipments. The largest eight firms accounted for only 40 percent of shipment value. Further, these concentration figures have not changed much since 1963 while sales have grown dramatically.

The extent of product differentiation and consumer preference for particular brands in the carpet industry is also very low. Carpet mills have failed to differentiate their brands for a number of reasons. A heavy incidence of private or distributor brands, retailers' tendency to focus upon final price as opposed to product quality and a low level of national brand promotion have all served to retard product differentiation.⁴

The American Carpet Institute, however, has stated that consumer awareness of and preference for national carpet brands has been growing.⁵ The average consumer of the early 1970's is at least aware of several national brands. In spite of this increased consumer

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³Ibid.
⁴Ibid., p. 68.
⁵The American Carpet Institute, "How Retail Research Can Increase Your Advertising Effectiveness" (New York: The Institute, Inc., June, 1966), p. 11.
national brand awareness, informed industry sources indicate that the retail dealer still has the greatest influence upon the consumer's purchase decision.\(^6\)

The introduction of the tufting process to the carpet industry after the second world war revolutionized the industry and eliminated most barriers to entry. During the 1950's and 1960's, firms could and did enter the tufted carpet industry with capital investments of under one million dollars. Predictions are, however, that growing plant sizes and resulting economies of scale along with growing marketing requirements in the industry will erect significant entry barriers at the manufacturing level in the 1970's and 1980's.\(^7\)

**Carpet Distributors.**\(^8\) Carpet producers have used two conventional marketing channel types: direct sales to retailers and sales to retailers through wholesalers. In 1969, carpet specialty stores accounted for about 39 percent of retail sales with furniture stores representing 33 percent and department stores representing 12 percent of sales.\(^9\) New types of retailers have entered the carpet distribution system, however. Some lumber yards, for example, have become "Complete Home Centers" that sell and install carpet.

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\(^6\) Kirk, *loc. cit.*


\(^8\) The following discussion of the nature of carpet distribution is based upon Chapter VII, "Aspects of the Changing Distribution/Selling Pattern" in Kirk, *ibid.*, pp. 85-97.

Most tufted carpet producers located in the southern United States have relied heavily upon wholesalers to distribute their branded products to retailers. The wholesalers for the most part have not had marketing programs which were coordinated with the programs of the producers, however. The wholesalers typically emphasized price to the retailers and this has led to retail price competition and reduced retail margins.

While carpet producers increasingly emphasized branding and national promotion of their products' functional and styling characteristics, retailers continued to focus upon price to generate sales. The marketing sophistication at the manufacturing level of the industry was not transmitted to the distributors. In a national survey of retail carpet dealers, Home Furnishings Daily found that the retailers desired supplier assistance in many marketing areas.¹⁰

Since most southern tufted carpet producers have relied heavily upon wholesalers, the southern distributor is a likely candidate to provide the desired marketing assistance to the retailers. Several alternatives are available to the southern distributors to achieve the coordination of marketing programs that is needed to improve the performance of carpet producers and distributors. Control could be achieved through: (1.) ownership of carpet producers and/or retailers; (2.) contractual agreements with producers and/or retailers; or (3.) administration of independent producers and/or

retailers.

The strategy most likely to achieve channel marketing program coordination in the short run is the exercise of wholesaler power to achieve control over crucial channel issues; e.g., resale pricing and cooperative advertising programs. Such coordination could lead to the development of strong inter-channel competition and greater industry efficiency.

The carpet industry in the early 1970's can be described as one of low market concentration at production and distribution levels. Efforts by manufacturers or other channel members in low concentration industries to control retail prices in the absence of strong retailer cooperation and/or coercive trade associations are usually ineffective. These characteristics should be recalled throughout the discussion of the findings of this study. Before those findings are discussed, attention is focused in the following section upon the analysis of the measures of carpet dealers' attitudes to test for their reliability.

**Reliability of the Attitude Measures**

In this study, dealers' attitudes toward twenty-one combinations of payoff and control levels were measured by their responses to six bipolar adjectives that were scaled in a semantic differential format. Their responses are recorded in Appendix B. The six bipolar adjectives were selected because of their high evaluative dimension factor loadings and their appropriateness for the channel situation.

Reliability refers to the extent to which test results are free from experimental error. If all six bipolar adjectives measured
the same dimension of each dealer's attitudes toward the twenty-one situations, then the individual dealer responses along the seven scale positions should have been highly consistent for each situation. A split-halves reliability coefficient was computed to measure the extent to which the dealers responded in a consistent manner to the six bipolar adjectives for each situation. Each dealer's responses to the six adjectives for each situation were divided into two groups -- the first three adjectives' scores and the second three adjectives' scores.

A simple correlation analysis of the resulting two groups of scores yielded a correlation coefficient (r) of 0.926. To compute this coefficient, the test scores were divided in half. When a test is lengthened, reliability increases. Therefore, it was necessary to "correct" the correlation coefficient to make it relevant for the whole test rather than for just half of the test. The corrected split halves reliability coefficient computed for the dealers' responses to the six bipolar adjectives is 0.961.

The corrected coefficient suggests that the test was reliable. That is, the six bipolar adjectives reliably measured the evaluative dimension of the dealers' attitudes toward the different control and payoff level combinations.

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11 The formula for computing the corrected split-halves reliability coefficient is \( \frac{r(x2)}{r+1} \). A value of 0.70 or higher is traditionally accepted as an indication of reliability. For a description of the technique, see James J. Bruning and B. L. Kintz, *Computational Handbook of Statistics* (Glenview: Scott, Foresman, 1968), pp. 187-188.
Generation of the Interval Level Control Scale

This study was based upon a conceptual model that depicted a range of relative control from complete relative middleman control to complete relative supplier control. Supplier policy statements defined points along the relative control scale. It was improper, however, to assign a priori values of 0, 1, 2, etc. to the policy statements and to assume that the statements fell neatly along an interval scale. Thurstone's law of comparative judgement was used to generate interval scale values.

The law of comparative judgement relates "the proportion of times any given stimulus $k$ is judged greater on a given attribute than any other stimulus $j$ to the scale values and discriminant dispersions of the two stimuli on the psychological continuum." The law is based upon the following three postulates:

1. Each stimulus when presented to an observer gives rise to a discriminant process which has some value on the psychological continuum of interest.

2. Because of momentary fluctuations in the organism, a given stimulus does not always excite the same discriminant process, but may excite one with a higher or lower value on the continuum. If any stimulus is presented to an observer a large number of times, a frequency distribution of discriminant processes associated with that stimulus will be generated. It is postulated that the values of the discriminant processes are such that the frequency distribution is normal on the

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psychological continuum. Each stimulus thus has associated with it a normal distribution of discriminable processes.

3. The mean and standard deviation of the distribution associated with a stimulus are taken as its scale value and discriminable dispersion, respectively.

One common variation of the Thurstone technique involves replication over individuals. Instead of asking a single individual to evaluate a pair of stimuli a large number of times (see Postulate 2 above), each pair of stimuli is compared once by several individuals. This variation is based upon the assumption that "...the discriminable processes associated with any given stimulus for a large number of individuals form a normal distribution on the psychological continuum..." ¹⁵ This variation was used in this study.

Thurstone's law of comparative judgement is stated as:

\[ S_a - S_b = Z_{ab} \left( s_a^2 + s_b^2 - 2rs_a s_b \right)^{\frac{1}{2}} \]

where:

\[ S_a - S_b = \text{a linear distance on the psychological scale between stimulus } a \text{ and stimulus } b, \]

\[ Z_{ab} = \text{sigma value (from a standard unit normal curve) of the observed proportion in which stimulus } a \text{ is preferred to stimulus } b, \]

\[ s_a^2, s_b^2 = \text{discriminable dispersions of stimuli } a \text{ and } b, \text{ respectively,} \]

\[ r = \text{coefficient of correlation for the discriminable deviations in each of the stimulus } a \text{ versus stimulus } b \text{ judgements.} \]

If one assumes equal discriminable dispersions (s = sa = sb) and no correlation between the discriminable deviations of the same judgement (r = 0), then a very simple form of Thurstone's law

¹⁵Ibid., p. 162.
results.  

\[ S_a - S_b = Z_{abs}(2)^{\frac{1}{2}} \]

When paired comparison stimuli evaluations are made by several judges, the possibility exists that all judges will judge one stimulus a to be greater on the given attribute than another stimulus b. In this case, the discriminant dispersions of stimuli a and b would be zero. In this study, all of the dealers surveyed evaluated some of the paired policy comparisons in the same manner. In other words, the proportion of dealers who perceived some Policy X to reflect greater supplier relative control than a Policy Y was 1.00. Proportions of 1.00 and 0.00 cannot be used because the unit normal deviates which correspond to these proportions are unboundedly large. The traditional procedure for computing interval scale values when this condition occurs was described by Torgerson and is explained below.\(^\text{17}\)

Five different supplier resale price policies were used in the study to represent different levels of relative supplier control over a crucial strategy variable of the carpet dealers. The five policies ranged from a level of no supplier relative control over the pricing of carpet at the retail level to a level of complete relative supplier control, resale price maintenance.


\(^\text{17}\) Torgerson, \textit{op. cit.}, pp. 173-176.
In Part I of the dealer questionnaire, carpet retailers responded to paired comparisons of the supplier resale price policies. Each dealer made ten comparisons (five policies compared two at a time) and indicated which policy reflected a higher level of relative supplier control. Table 5.2 is a frequency matrix of the results of the dealers' comparisons.

Table 5.2

Dealers' Perceptions of the Amount of Relative Supplier Control Implied by the Five Resale Price Policies

<table>
<thead>
<tr>
<th>Policy k</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_{0,k,k'}</td>
<td>1</td>
<td>19</td>
<td>19</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>---</td>
<td>12</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>8</td>
<td>---</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>---</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>---</td>
</tr>
</tbody>
</table>

\[ P_{0,k,k'} = \text{Number of dealers who perceived Policy } k \text{ to reflect greater relative supplier control than Policy } k' \]
The first step in Thurstone's procedure to generate interval scale values from the paired comparison data is to convert the frequency matrix to a matrix of proportions. Table 5.3 indicates that 95 percent of the dealers (19 of 20) perceived Policy 2 to reflect more relative supplier control than Policy 1. Each of the proportions in Table 5.3 can be similarly explained.

Table 5.3
Proportion of Dealers Indicating Policy X (1, 2, 3, 4 or 5) as Reflecting a Higher Level of Relative Supplier Control than Policy Y (1, 2, 3, 4 or 5)

<table>
<thead>
<tr>
<th>Policy k</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT_{ab}</td>
<td>---</td>
<td>.95</td>
<td>.95</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1</td>
<td>---</td>
<td>.95</td>
<td>.95</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>2</td>
<td>.05</td>
<td>---</td>
<td>.60</td>
<td>.95</td>
<td>1.0</td>
</tr>
<tr>
<td>Policy Y (b)</td>
<td>3</td>
<td>.05</td>
<td>.40</td>
<td>---</td>
<td>.95</td>
</tr>
<tr>
<td>4</td>
<td>.00</td>
<td>.05</td>
<td>.05</td>
<td>---</td>
<td>.95</td>
</tr>
<tr>
<td>5</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.05</td>
<td>---</td>
</tr>
<tr>
<td>P_{ab}</td>
<td>0.10</td>
<td>1.30</td>
<td>1.60</td>
<td>2.95</td>
<td>3.95</td>
</tr>
</tbody>
</table>
The second step to generate the interval scale values is to sum the proportions in each column in Table 5.3 and arrange the matrix columns in increasing order of the column sums. Table 5.4 places the columns in rank order with respect to the attribute considered (i.e. relative control) according to the column sums in Table 5.3 ($P_{ab}$).

### Table 5.4

The $Z$-values (Unit Normal Deviates) Which Correspond to Each Element in Table 5.3

<table>
<thead>
<tr>
<th>$ZSC_{ab}$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.000</td>
<td>1.645</td>
<td>1.645</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>2</td>
<td>-1.645</td>
<td>0.000</td>
<td>0.253</td>
<td>1.645</td>
<td>----</td>
</tr>
<tr>
<td>3</td>
<td>-1.645</td>
<td>-0.253</td>
<td>0.000</td>
<td>1.645</td>
<td>----</td>
</tr>
<tr>
<td>4</td>
<td>----</td>
<td>-1.645</td>
<td>-1.645</td>
<td>0.000</td>
<td>1.645</td>
</tr>
<tr>
<td>5</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>-1.645</td>
<td>0.000</td>
</tr>
<tr>
<td>$\sum_{a=1}^{5} Z_{ab}$</td>
<td>-3.290</td>
<td>-0.253</td>
<td>0.253</td>
<td>1.645</td>
<td>1.645</td>
</tr>
</tbody>
</table>
The matrix cells in Table 5.4 contain the Z-values (unit normal deviates) which correspond to each proportion in each cell in Table 5.3. Table 5.3 indicates that 60 percent of the dealers believed that Policy 3 reflected greater supplier relative control than Policy 2. The unit normal deviate which corresponds to a proportion of 60 percent is \( Z = 0.253 \). In other words, 60 percent of the total area under the normal distribution is between \( Z \) equal to minus infinity and \( Z \) equal to 0.253. This value was entered in Table 5.4 for the comparison between Policy 3 and Policy 2. All of the entries in Table 5.4 were obtained in this manner. When a proportion in Table 5.3 was less than 0.50, a minus sign (−) was prefixed to the Z-value in Table 5.3.

The next step in the procedure to infer interval scale values is to obtain the differences between the adjacent values in Table 5.4. Any values less than zero are dropped from future consideration. These differences \( d_{ab} = Z_{a,b+1} - Z_{a,b} \) are displayed in Table 5.5.

Estimates of the distances between the policies were obtained by substituting the values in the top portion of Table 5.5 into the following equation:

\[
d_{b,b+1} = s_{b+1} - s_b = \frac{1}{n_b} \sum_{a=1}^{n_b} (Z_{a,b+1} - Z_{a,b})
\]

where:

\( d_{b,b+1} \) = the linear distance on the psychological scale between stimulus \( b \) and stimulus \( b+1 \),

\( n_b \) = the number of filled cells in each column.

\[18\] Ibid., p. 174.
### Table 5.5

Matrix of Differences Between Columns in Table 5.4

\[ d_{ab} = (Z_{a,b+1} - Z_{a,b}) \]

<table>
<thead>
<tr>
<th></th>
<th>(d_{12})</th>
<th>(d_{23})</th>
<th>(d_{34})</th>
<th>(d_{45})</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.645</td>
<td>0.000</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2</td>
<td>1.645</td>
<td>0.253</td>
<td>1.392</td>
<td>---</td>
</tr>
<tr>
<td>Policy Y (a)</td>
<td>3</td>
<td>1.392</td>
<td>0.253</td>
<td>1.645</td>
</tr>
<tr>
<td>4</td>
<td>---</td>
<td>0.000</td>
<td>1.645</td>
<td>1.645</td>
</tr>
<tr>
<td>5</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

\[ \Sigma d_{ab, b+1} = 4.682 \]

<table>
<thead>
<tr>
<th>(n_b)</th>
<th>3</th>
<th>4</th>
<th>3</th>
<th>1</th>
</tr>
</thead>
</table>

\[ d_{b, b+1} = \frac{1}{n_b} \Sigma_{ab} d_{ab, b+1} = 1.5600 \]

\[ \frac{n_b}{n_b} \]

| \(d_{b, b+1}\) | 1.5600 | 0.1270 | 1.5600 | 1.6450 |
The zero point of the relative control scale was located arbitrarily at Policy 1 = 0 ($V_1 = 0$). The scale values for each stimulus were obtained by cumulating the successive differences ($d_b, b + 1$). Therefore:

$$V_1 = 0$$

$$V_2 = V_1 + 1.5600 = 1.5600$$

$$V_3 = V_2 + 0.1265 = 1.6865$$

$$V_4 = V_3 + 1.5600 = 3.2465$$

$$V_5 = V_4 + 1.6450 = 4.8915$$

The results of the paired-comparison evaluations by the carpet dealers demonstrated that an a priori assignment of 0, 1, 2, 3 and 4 to the five policies would have biased the results of the analysis for this study.

When depicted along a horizontal axis, the policies appear as below:

<table>
<thead>
<tr>
<th>Policy 1</th>
<th>Policy 2</th>
<th>Policy 4</th>
<th>Policy 5</th>
<th>Relative Control Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Policy 3

0 1 2 3 4 5 Scale

The resale price policies 1, 4 and 5 were clearly distinguished by the carpet dealers. However, policies 2 and 3 were perceived to reflect nearly the same level of relative supplier control. The values of $V_k$ for the $k$ control levels 1 to 5 were used in the regression analyses associated with the dealer payoff and tolerance functions which are discussed below.
Payoff Perceptions Across Relative Control Levels

The first null hypothesis was stated to test for significant differences in the dealers' perceptions of payoff at each level of supplier control over resale pricing. The hypothesis tested was:

\[ H_{01} \text{ There is no significant difference in the measures of dealers' perceptions of payoff at each of the five levels of relative supplier control.} \]

Each dealer indicated in Part III of the questionnaire the impact that he perceived the adoption of each resale price policy would have upon his net profits. The payoff levels, then, represented perceived changes in net profits that would result from supplier resale price policy changes.

The average dealer perceptions of payoff changes that would occur if the wholesaler adopted resale price policies (control levels) 1 to 5 are cited in Table 5.6. Individual dealer perceptions are reported in Appendix C. Appropriately, the dealers indicated that Policy 1 (no price suggestion by the wholesaler) would not affect their net profits (perceived payoff level 3). Policy 1 represents the supplier's present resale price policy. Table 5.6 suggests that the dealers thought that their net profits would increase slightly if the supplier exercised more influence in the retail pricing of the brand of carpet studied.

However, a one-way analysis of variance of the payoff perceptions by control level (policy) identified no significant differences at a 95 percent confidence level. Table 5.7 shows that the F-value computed was much smaller than the critical F-value \( (F_{4,76}) \).
### Table 5.6

Average Dealer Perceptions of Payoff at Each Level of Relative Supplier Control

<table>
<thead>
<tr>
<th>Control Level</th>
<th>Average Perception of Payoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy 1</td>
<td>(\text{APP}_1 = 3.00)</td>
</tr>
<tr>
<td>Policy 2</td>
<td>(\text{APP}_2 = 2.95)</td>
</tr>
<tr>
<td>Policy 3</td>
<td>(\text{APP}_3 = 3.30)</td>
</tr>
<tr>
<td>Policy 4</td>
<td>(\text{APP}_4 = 3.35)</td>
</tr>
<tr>
<td>Policy 5</td>
<td>(\text{APP}_5 = 3.25)</td>
</tr>
</tbody>
</table>

### Table 5.7

Test for Significant Differences in Dealers' Perceptions of Payoff for Each Control Level

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Computed F-Value</th>
<th>Critical Value (F_{4, 76, \alpha = 95%})</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Level (Price Policy)</td>
<td>0.99</td>
<td>2.50</td>
<td>No</td>
</tr>
</tbody>
</table>
The computed F-value of .99 could have occurred by chance more than five times in one hundred cases. Therefore, the first hypothesis was not rejected.

The inability to reject the first hypothesis suggests that the carpet dealers surveyed did not, on the average, believe that their profits would be significantly affected by any of the five resale price policies. The plot of the average dealer payoff perception at each control level yielded an estimated average payoff function that is approximately horizontal (see Figure 5.1).

\[
\begin{align*}
\text{Perceived Payoff} & \\
0 & 1 2 3 4 5 \\
\text{Relative Control Scale} & \\
\text{APP}_k & = \text{Average dealer payoff perception at each control level } k
\end{align*}
\]

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure5_1}
\caption{Plot of the Average Dealer Payoff Perceptions}
\end{figure}
The middleman payoff function conceptualized in the third chapter indicated that dealer perceptions of payoff would initially increase with increasing supplier control but would eventually decline at very high levels of supplier control. The measures of the dealers' average payoff perceptions suggest that this is not true for all dealers surveyed.

Intensive discussions with the carpet dealers surveyed after the completion of the questionnaires identified some factors which offer potential explanations of these results. First, some of the dealers felt that it would be impossible for the supplier to police (i.e. enforce) the resale price policies that imply a high level of supplier relative control. A carpet manufacturer adopted a cooperative advertising program several years ago. Only those dealers who contributed to the program were to receive certain items of the total product line. However, some participating dealers sold the items to non-participating dealers. The manufacturer either could not or simply did not exert any pressure upon the dealers to prevent this. As a result, the program was discontinued.

Second, a few dealers indicated that they would offset any negative effects that they might experience due to efforts by the supplier to set the retail price by lowering the quality of the carpet installation service and materials. Carpet and its installation is something about which most consumers know very little and

19 Supra, pp. 86-88.
these few dealers felt that this strategy, although less than completely ethical, would allow them to compensate for any negative effects the price policies might have upon their profits in the short run.

Third, the dealers were asked in Part III of the questionnaire to indicate only what they thought would happen to their net profits if their supplier adopted the various policies. Some dealers said that they could readily switch consumers away from any brand of carpet. Thus, the policies would not affect them because they could simply sell other brands to price conscious consumers. Brand preference for carpet is not that strong.

Finally, some of the dealers acknowledged that their present percentage markup over delivered cost on the carpet brand studied was within the ranges specified by all five price policies. The policies would, thus, have little or no effect upon their price decisions.

If all dealers surveyed believed that their profits would be unaffected by any of the five policies, then the regression of dealer payoff perceptions across the five policies would yield a linear fit with a high and significant $R^2$. This analysis was conducted to test the second hypothesis.

**Average Retailer Payoff Function**

The second hypothesis was designed to determine if the average dealer payoff function has a constant slope or is curvilinear. The second hypothesis was:
A quadratic equation of the form \( y = a + bx + cx^2 \) does not describe the dealers' perceptions of payoff at various levels of supplier control better than a straight line equation of the form \( y = a + bx \).

Two regression equations were computed:

1. Perceived Payoff = 2.9405 + 0.0740 Relative Control Value
   \( R^2 = 0.0208 \)
   Probability of \( F \) = 0.1527

2. Perceived Payoff = 2.9421 + 0.722 Relative Control Value + 0.0004 Control Value^2
   \( R^2 = 0.0208 \)
   Probability of \( F \) = 0.3628

If the quadratic equation form yielded a higher \( R^2 \) that was statistically significant, then the second null hypothesis was to be rejected. However, both regressions produced extremely low \( R^2 \)'s (0.0208 in both cases) and neither equation form was significant at the .05 level of significance (a probability of \( F \) of 15 percent for the linear and 36 percent for the quadratic expressions). The beta coefficients for the independent variable (resale price policy) were all approximately zero (this suggests a payoff function with a zero slope). However, none of the beta coefficients were significant at the .05 level (a probability of \( t \) of 15 percent for the linear beta and 68 and 98 percent for the quadratic betas).

The regression analysis shows that the second null hypothesis could not be rejected. Neither equation form did a very good job of explaining the relationship between the twenty dealers' payoff perceptions for each of the five price policies.

The one-way analysis of the variance of dealer payoff perceptions by supplier policies (control levels) demonstrated that the average payoff perceptions for all twenty dealers did not differ
significantly for different policies. However, the inability to reject the second null hypothesis suggests the need for additional analysis of the dealer payoff perceptions.

An analysis of variance of dealer payoff perceptions by dealer indicated that there were significant differences in different dealers' payoff perceptions at each level of supplier control. Table 5.8 presents the average perception of payoff across the five policies by each of the twenty dealers.

Table 5.8
Average Perception of Payoff Across All Control Levels (Price Policies) by Dealer

<table>
<thead>
<tr>
<th>Dealer</th>
<th>Average Perception of Payoff</th>
<th>Dealer</th>
<th>Average Perception of Payoff</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.00</td>
<td>11</td>
<td>3.80</td>
</tr>
<tr>
<td>2</td>
<td>2.00</td>
<td>12</td>
<td>3.00</td>
</tr>
<tr>
<td>3</td>
<td>2.80</td>
<td>13</td>
<td>3.40</td>
</tr>
<tr>
<td>4</td>
<td>4.00</td>
<td>14</td>
<td>3.00</td>
</tr>
<tr>
<td>5</td>
<td>3.40</td>
<td>15</td>
<td>3.00</td>
</tr>
<tr>
<td>6</td>
<td>3.20</td>
<td>16</td>
<td>3.60</td>
</tr>
<tr>
<td>7</td>
<td>3.40</td>
<td>17</td>
<td>3.00</td>
</tr>
<tr>
<td>8</td>
<td>3.40</td>
<td>18</td>
<td>3.00</td>
</tr>
<tr>
<td>9</td>
<td>3.20</td>
<td>19</td>
<td>3.00</td>
</tr>
<tr>
<td>10</td>
<td>3.00</td>
<td>20</td>
<td>2.00</td>
</tr>
</tbody>
</table>
The variance of the average payoff perceptions by dealer was statistically significant at the .05 level of significance (see Table 5.9). This finding suggests that the relationship between payoff perceptions and relative control levels can be better understood and explained if the payoff perceptions are analyzed according to dealer characteristics (e.g., size of firm, number of carpet brands carried, percentage of dealer sales accounted for by the carpet brand studied, etc.). In other words, dealers with certain characteristics may have perceived their payoff to be positively related to increasing levels of relative supplier control while others perceived the relationship to be a negative one. Other dealers may have perceived their payoff function to be unaffected by any of the resale price policies.

Table 5.9

Analysis of Variance of Average Payoff Perceptions by Carpet Dealer

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Computed F-Value</th>
<th>Critical F-Value $F_{20,75}$ alpha = 95%</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpet Dealer</td>
<td>1.85</td>
<td>1.73</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Several additional hypotheses can be derived from this finding. It would be appropriate to test for significant differences among the dealer perceptions of payoff at different price policies when the dealers are classified by:
1.) number of carpet brands carried;
2.) form of ownership of the retail business;
3.) number of years the firm has been in business;
4.) lines of merchandise sold;
5.) percentage of total sales accounted for by carpet;
6.) "definition" of the business; e.g., interior decorator, furniture retailer or carpet retailer;
7.) level of total sales volume;
8.) measures of past performance.

A factorial analysis of variance might identify significant differences and indicate which kinds of carpet dealers' payoff perceptions are and are not affected by the resale price policies. The data needed to test such hypotheses were not collected, however.

Retailers' Attitudes Toward Enterprise Channel Relationships

The third null hypothesis was related to the measures of the dealers' attitudes toward each of twenty different hypothetical situations. In Part II of the dealer questionnaire, each respondent was asked to express his feelings about the situations. Twenty combinations of payoff levels (four) and resale price policies (five) represented the hypothetical situations.

The hypothesis tested was:

\[ H_{03} \] There is no significant difference among the measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and levels of relative supplier control.

Each dealer responded to six seven-point semantic differential scaled bipolar adjectives. Scores on each scale ranged from one for the least favorable end of the scale to seven for the most favorable end of the scale. The individual dealer responses are reported in Appendix B. Composite attitude scores for each dealer were obtained by averaging each dealer's responses to each situation. Average
Composite attitude scores were obtained for each situation by averaging all dealers' scores for each payoff and control combination. Table 5.10 presents a summary of the average dealer composite attitude scores. The table shows the scores to decline with increasing supplier control and to increase with increasing payoff.

Table 5.10

Average Dealer Composite Attitude Scores (ACS \textsubscript{\textit{j,k}}) for the Twenty Payoff and Control Level Combinations

<table>
<thead>
<tr>
<th>Control Level: Resale Price Policy</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Row Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payoff</td>
<td>2</td>
<td>2.1665</td>
<td>2.0585</td>
<td>1.8670</td>
<td>1.8585</td>
<td>1.7920</td>
</tr>
<tr>
<td>Levels</td>
<td>3</td>
<td>4.9665</td>
<td>5.4080</td>
<td>4.2665</td>
<td>3.8590</td>
<td>3.4245</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>6.0410</td>
<td>5.9495</td>
<td>5.9255</td>
<td>5.5585</td>
<td>4.8495</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>6.4495</td>
<td>5.8995</td>
<td>5.7420</td>
<td>5.6330</td>
<td>5.5005</td>
</tr>
<tr>
<td>Column Means</td>
<td>4.9058</td>
<td>4.8288</td>
<td>4.4502</td>
<td>4.2272</td>
<td>3.8916</td>
<td></td>
</tr>
</tbody>
</table>

A two-factor (payoff and control) analysis of variance identified significant differences in the individual dealer composite attitude scores across different payoff levels and different control levels (policies). Table 5.11 shows that differences in individual dealer composite attitude scores were significant at the .05 level across payoff and control levels, but there was not a significant
interaction between the two factors. The absence of a significant interaction effect with the two significant main effects suggests that each main effect held at each level of the other variate. Therefore, the effect of increasing payoff levels was the same no matter what the level of relative supplier control. Likewise, the effect of increasing supplier control was the same no matter what the level of payoff.

Table 5.11

Factorial Analysis of Variance of Dealer Composite Attitude Scores by Payoff Level and Control Level (Policy)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Computed F-Value</th>
<th>Critical F-Value alpha = 95%</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payoff Level</td>
<td>122.00</td>
<td>$F_{3,361} = 2.60$</td>
<td>Yes</td>
</tr>
<tr>
<td>Control Policy</td>
<td>5.38</td>
<td>$F_{4,361} = 2.37$</td>
<td>Yes</td>
</tr>
<tr>
<td>Payoff * Control</td>
<td>0.85</td>
<td>$F_{12,361} = 1.75$</td>
<td>No</td>
</tr>
</tbody>
</table>

The factorial analysis of variance indicates that the dealers' attitudes did vary as proposed in Chapter 3. The dealer tolerance function, described conceptually in the third chapter, was based upon the belief that dealers prefer more to less profits but less to more influence by other firms over their marketing variable decisions. The findings support this proposition and the third null hypothesis was rejected.
The Effect of Profits on Retailers' Attitudes

The third hypothesis was designed to determine if any significant differences existed among the dealers' composite attitude scores. The fourth and fifth hypotheses were designed to determine the nature of the relationship between the attitude scores and the two independent variables, payoff and control. The fourth hypothesis dealt with the relationship between dealer composite attitude scores and the levels of dealer profitability (payoff).

\[ H_{04} \quad \text{The measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and levels of relative supplier control are not positively related to increasing payoff levels.} \]

The factorial analysis of variance of the attitude scores by payoff and control levels demonstrated that the dealers' attitudes varied significantly across the payoff levels. The average dealer composite attitude scores for each of the five payoff levels examined in this study are shown in Table 5.12. The average composite attitude scores increased with each increase in the payoff level. (Attitude scores range from 1 to 7.)

To obtain a better understanding of the relationship between attitude scores and payoff levels, the dealer composite attitude scores for the twenty payoff and policy combinations were regressed against the values assigned to the five payoff levels. The following linear expression was generated:

\[
\text{Attitude Score} = -0.07 + 1.2969 \times \text{Payoff Level} \\
(0.0001)
\]

\[ R^2 = 0.3849 \quad \text{Probability of F} = 0.0001 \]
This linear expression yielded an $R^2$ of 0.3849 that was significant at the 0.0001 level. The beta coefficient for payoff levels was +1.2969 and it was also significant at the 0.0001 level. Thus, the fourth hypothesis was rejected and the conclusion was drawn that the dealers' attitudes toward the payoff-policy combinations were positively related to increasing payoff levels.

Table 5.12
Average Composite Attitude Scores at Each Payoff Level

<table>
<thead>
<tr>
<th>Payoff Levels</th>
<th>Average Composite Attitude Scores (ACS$_j$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.6755</td>
</tr>
<tr>
<td>2</td>
<td>1.9485</td>
</tr>
<tr>
<td>3</td>
<td>4.3849</td>
</tr>
<tr>
<td>4</td>
<td>5.6648</td>
</tr>
<tr>
<td>5</td>
<td>5.8449</td>
</tr>
</tbody>
</table>

The rejection of the fourth null hypothesis demonstrates that carpet retailers were at least partially "economic men." The positive relationship between attitude scores and payoff levels shows the dealers to have been favorably disposed to profits at all levels of supplier control. This suggests that an individual dealer's tolerance for supplier control might be increased if the supplier offered the dealer additional profits.
The Effect of Supplier Control on Retailers' Attitudes

The analysis of variance of the individual dealer composite attitude scores identified significant differences in those scores across the five levels of relative supplier control. The fifth hypothesis was examined to identify the nature of the effect of increasing levels of relative supplier control upon the dealers' composite attitude measures.

\( H_0 \) : The measures of the dealers' attitudes toward twenty combinations of dealer payoff levels and relative supplier control levels are not negatively related to increasing levels of relative control.

Table 5.13 shows that the average composite attitude score for all dealers decreased consistently at successively higher levels of supplier resale price control. (Attitude scores range from 1 to 7.)

<table>
<thead>
<tr>
<th>Control Level (Resale Price Policy)</th>
<th>Scale Value ( V_k )</th>
<th>Average Composite Attitude Score (ACS(_k))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0000</td>
<td>4.9058</td>
</tr>
<tr>
<td>2</td>
<td>1.5600</td>
<td>4.8288</td>
</tr>
<tr>
<td>3</td>
<td>1.6865</td>
<td>4.4502</td>
</tr>
<tr>
<td>4</td>
<td>3.2465</td>
<td>4.2272</td>
</tr>
<tr>
<td>5</td>
<td>4.8915</td>
<td>3.8916</td>
</tr>
</tbody>
</table>
The means in Table 5.13 imply that the composite attitude scores were negatively related to increasing levels of relative supplier control. A linear regression of the dealer composite scores across the interval scale values ($V_R$) for the five resale price policies supports the implication of a negative relationship. The following equation was generated:

$$\text{Attitude Score} = 4.9525 - 0.2159 (\text{Relative Control Scale Value})$$

$$R^2 = 0.0236 \quad \text{Probability of } F = 0.0021$$

Although the $R^2$ computed for the linear expression was extremely low, the expression was statistically significant at a 0.0021 level. Also, the beta coefficient computed for the dependent variable (relative price control levels) was negative (-0.2159) and statistically significant at a 0.0021 level. Therefore, the fifth hypothesis was rejected.

The rejection of the fifth hypothesis implies that the carpet retailers were negatively disposed toward the exercise of influence by the carpet supplier over the retail pricing decision. This suggests that the dealers' resistance to control by their supplier increased as the level of relative supplier control increased.

**Average Retailer Tolerance Function**

The rejection of the fourth and fifth hypotheses led to the conclusions that the dealers were favorably disposed toward increasing levels of payoff and unfavorably disposed toward increasing levels of relative supplier control over the retail pricing of carpet. The sixth hypothesis was tested to determine the approximate shape of
the dealer tolerance function. In other words, the objective was to assess better the payoff and control relationship.

\[ H_0 : \text{A quadratic equation of the form } y = a + bx + cx^2 \]
\[ \text{does not describe the dealers' tolerance for relative supplier control better than a straight line equation of the form } y = a + bx. \]

The conceptual model presented in the third chapter suggested that the tolerance function for a hypothetical retailer exhibited a constant and positive slope throughout some range of relative control. At a relatively high level of supplier control, however, the slope was shown to increase and the tolerance function became vertical.

To test this hypothesis, it was first necessary to obtain measures of the maximum level of supplier control that each dealer would tolerate at each payoff level. The matrix checkoff procedure described in Chapter 4 was used to determine the maximum control level tolerated by each dealer at each level of payoff.\(^2\) A matrix like the one shown in Table 5.14 was constructed for each of the twenty dealers (see Appendix D).

The maximum relative control level tolerated by dealer 18 at Payoff Levels 2, 3, 4 and 5 was Policy Levels 2, 3, 4 and 5, respectively. A summary of the maximum relative control levels tolerated by each dealer at each level of relative supplier control is depicted in Table 5.15.

The general nature of the average dealer tolerance function is suggested by Table 5.16. It lists the average maximum relative control level tolerated by the dealers surveyed at payoff levels 2

\(^2\) Supra, p. 139.
### Table 5.14

**Maximum Relative Control Matrix for Dealer 18**

<table>
<thead>
<tr>
<th>Value of Indicator Score CS(_{18,1,1})</th>
<th>Payoff Level (j)</th>
<th>Relative Control Levels</th>
<th>Maximum Relative Control Level Tolerated (MC(_{j,k}))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1.50</td>
<td>2</td>
<td>2.17</td>
<td>5.67</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6.83</td>
<td>7.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>7.00</td>
<td>7.00</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>7.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

### Table 5.16

**Average Maximum Relative Control Level Tolerated at Each Payoff Level**

<table>
<thead>
<tr>
<th>Payoff Level</th>
<th>Average Maximum Relative Control Level Tolerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1.225</td>
</tr>
<tr>
<td>3</td>
<td>3.586</td>
</tr>
<tr>
<td>4</td>
<td>4.246</td>
</tr>
<tr>
<td>5</td>
<td>4.410</td>
</tr>
</tbody>
</table>
Table 5.15

Maximum Relative Control Level Tolerated by Each Dealer at Each Payoff Level

<table>
<thead>
<tr>
<th>ID&lt;sup&gt;a&lt;/sup&gt;</th>
<th>PAY&lt;sup&gt;b&lt;/sup&gt;</th>
<th>MC&lt;sub&gt;i,j&lt;/sub&gt;&lt;sup&gt;c&lt;/sup&gt;</th>
<th>ID</th>
<th>PAY</th>
<th>MC&lt;sub&gt;i,j&lt;/sub&gt;</th>
<th>ID</th>
<th>PAY</th>
<th>MC&lt;sub&gt;i,j&lt;/sub&gt;</th>
<th>ID</th>
<th>PAY</th>
<th>MC&lt;sub&gt;i,j&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>11</td>
<td>2</td>
<td>1</td>
<td>16</td>
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<sup>a</sup>ID = Dealer identification number

<sup>b</sup>PAY = Dealer perceived payoff level

<sup>c</sup>MC<sub>i,j</sub> = Maximum level of relative supplier control tolerated by dealer i at payoff level j
The averages cited in Table 5.16 indicate that dealer tolerance for relative supplier control was positively related to increasing levels of dealer payoff. This is consistent with the conceptual model presented in Chapter 3. The average maximum relative control values for each payoff level are plotted in Figure 5.2. This graphic representation at least approximates the general nature of the average dealer tolerance function. (The dependent variable is on the horizontal axis and the independent variable is on the vertical axis.)

\[
\text{Perceived Payoff} \\
\begin{array}{c}
a = \text{AMT}_2 \\
b = \text{AMT}_3 \\
c = \text{AMT}_4 \\
d = \text{AMT}_5 \\
\end{array}
\]

\[\text{AMT}_j = \text{Average maximum relative supplier control level tolerated at payoff level } j\]

Figure 5.2

The Average Tolerance Function
To obtain a better understanding of the dealer payoff and tolerance relationship for resale price control, the maximum relative control level scale values ($V_k$ for each $MC_{i,j}$) for each price policy were regressed against the payoff level values. A linear and a quadratic expression were used in the regression analysis. The following two tolerance functions were generated.

(1.) Maximum Control
Level Tolerated = -0.0200 + 1.0186 (Payoff Level)

$$R^2 = 0.3411 \quad \text{Probability of } F = 0.0001$$

(2.) Maximum Control
Level Tolerated = -6.27 + 4.88 (Payoff) - (0.55) (Payoff)²

$$R^2 = 0.4286 \quad \text{Probability of } F = 0.0001$$

The second equation, a quadratic or parabolic expression, produced a higher $R^2$ (0.4286) and the equation was significant at the 0.0001 level. Also, both of the beta coefficients were significant ($b_1 = 4.88$ at the 0.0001 level and $b_2 = -0.55$ at the 0.0014 level). Therefore, the sixth hypothesis was rejected.

Rejection of the sixth hypothesis implies that the conceptualization of the dealer tolerance function in the third chapter was a fair estimate of the carpet dealers' average tolerance function. Their tolerance for supplier control was positively related to increasing payoff levels. However, at high levels of relative supplier control, dealer resistance increased at an increasing rate. Thus, the dealer tolerance function was better described with a quadratic expression than with a linear expression.
Payoff and Tolerance Functions: General
Implications for the Channel Group

The analysis of data collected from the carpet dealers led to the rejection of the four null hypotheses which dealt with dealer tolerance for supplier control \((H_{03}, H_{04}, H_{05} \text{ and } H_{06})\). However, the first two hypotheses, which dealt with the dealer payoff function, were not rejected. The major conclusions drawn from this study of retail carpet dealers were derived from the simultaneous analysis of the average dealer payoff and tolerance functions.

The dealer perceptions of payoff at each of the five levels of supplier control were not significantly different. The average payoff perceptions \((\text{APP}_k \text{ for } k = 1-5)\) were all approximately equal to 3.0. Thus, the twenty dealers surveyed did not, on the average, believe that their individual profits would be significantly affected if the carpet supplier adopted any of the five resale price policies. This suggests an average dealer payoff function that is horizontal at payoff level 3 (i.e. no change in dealer net profits).

The average dealer tolerance function was described by a quadratic expression. The analysis of the measures of dealers' attitudes toward twenty hypothetical channel situations supported the relationship between dealer tolerance for control and dealer payoff perceptions which was conceptualized in Chapter 3. The quadratic expression computed to represent the average dealer tolerance function is:

\[
\text{Maximum Control} - \text{Level Tolerated} = -6.27 + 4.88 \text{ (Payoff)} - 0.55 \text{ (Payoff)}^2
\]
Since the average dealer payoff function is a constant (Payoff = 3), the simultaneous solution of these two equations to identify their intersection was simple. The two equations intersect at a point which represents 3.42 on the horizontal relative control axis and 3.00 on the vertical payoff axis. This intersection is depicted in Figure 5.3.

![Diagram](image)

**Figure 5.3**

Carpet Dealers' Average Payoff and Tolerance Functions

The intersection of the average payoff and tolerance functions estimates the maximum level of relative control that the carpet supplier could achieve over the retail pricing of the carpet brand studied. The maximum level of control that is attainable is greater
than the level of control represented by Control Level 4:

Original Wholesale Supply, Inc. sets a range of **30 to 60 percent markup over the delivered cost** that the dealers pay for Brand X carpet within which all Brand X dealers **must** set their retail price.

However, the supplier could not adopt a resale price maintenance policy (Control Level 5) without encountering extreme resistance from the carpet retailers. Figure 5.3 shows that the dealers would not tolerate a resale price maintenance program even if their net profits were increased 15 to 25 percent (Payoff Level 5).

The twenty carpet dealers were, for the most part, very tolerant of supplier price control. This fact may be explained by the nature of the manufacturer-distributor-wholesaler relationship in the nature industry. Most carpet retailers are very dependent upon the local distributor (supplier). The most crucial marketing strategy variable for the retail carpet dealer is his assortment of carpet styles as well as brands. Most dealers are incapable of selecting the new carpet styles which promise the greatest consumer demand.

Almost all carpet retailers abdicate this major product selection decision to the local or regional independent distributor. Huge regional "Markets" are conducted semi-annually. At these trade shows, the carpet manufacturers display their new carpet styles and independent carpet distributors select carpet styles for the retailers. This pattern of behavior is standardized in the carpet industry. The strong role-task norms related to the product assortment decision might also contribute to the high level of retailer tolerance for price control by the distributor (supplier).
Another factor which might explain the high level of retailer tolerance for supplier price control is the general state of the economy of the United States. The years of 1971 to 1974 have been marked by wage and price controls by the Executive Branch of the United States Government. Current shortages of many raw materials (including synthetic and natural fibers), rampant inflation, and an uncertain political situation in the United States all contribute to a high level of uncertainty among many small businessmen. These factors might have significantly affected the measures of dealer tolerance for supplier control of resale price decisions.

Some of the small, independent carpet retailers expressed a feeling of complete bewilderment about the state of the economy. They seemed eager to turn over their retail pricing as well as promotional decisions to a distributor or anyone else who promised to improve their profitability. Other retailers, however, maintained an unwavering position against any control of their business decisions by any outside agency, supplier or government.

If the carpet distributor who supplies the twenty carpet dealers surveyed wanted to adopt a more restrictive resale price policy to stabilize the retail price of the carpet brand studied, several alternatives are at his disposal. He could remind the dealers that he already quite successfully selects the product styles that they carry. Then, he might explain that the additional control would not affect their profits (average payoff perceptions were that dealer profits would be unchanged at all levels of relative supplier control); but the policy would prevent low overhead retailers from undercutting most dealers' "lowest possible price." This strategy could involve
the use of rational appeals, the development of new role-task norms, and/or the establishment of new socialization patterns to increase dealer tolerance for supplier control at all levels of dealer payoff.

A resale price maintenance policy might also be acceptable to the retailers if the supplier were willing to increase the retailers' payoff at the higher levels of control. This strategy might involve improving the retailers' and the manufacturer's promotional programs and establishing a stronger consumer brand preference for the branded carpet. A more selective distribution policy that would eliminate dealers unwilling to maintain a minimum markup might also be utilized to shift each dealer's payoff function upward. This would require a strengthening of the manufacturer's consumer franchise, however.

The applicability of the methodology used in this study is not limited to the study of supplier resale price policies. Indeed, the methodology developed to measure payoff perceptions and retailer tolerance for price control can be used to determine the perceived impact on dealer profits and attitudes of different levels of supplier control over any marketing strategy variable. For example, supplier relative control policies regarding retailer cooperative advertising programs, dealer sales promotion programs and even product assortment decisions could easily be investigated.

For suppliers seeking to develop new distribution channel networks or to modify their existing channels, this study has implications for middleman selection strategies. The determination of the kinds of middlemen who would benefit from and tolerate the supplier's desired level of control over reseller marketing variables would provide specific criteria for the selection of middlemen.
Implications for Marketing Theory

Quentin L. Coons in 1963 issued a challenge to the economic theorists to integrate marketing thought and economic theory. This study contributes in a small way to meeting Coons' challenge. The carpet industry exhibits a low level of seller concentration at the manufacturing level and a high level of retailer competition. Economic price theory suggests that supplier control over pricing or any other marketing variable would be difficult to enforce upon the maverick firm in such an industry.

This study suggests that, on the average, the retail dealers surveyed might willingly accede to a relatively high level of wholesaler resale price control on a relatively well-known, national brand of carpet. Whether or not the dealers can be encouraged to cooperate to eliminate price cutting is dependent upon increased product differentiation and a strengthened manufacturer's consumer franchise.

Stern's research of the bilaterally competitive furniture industry indicated that low concentration in an industry does not always prohibit the development of a locus of channel control. Additional studies are needed to determine the nature of any relationship that may exist between manufacturer and distributor attitudes toward the exercise of governing influence and the structural characteristics of economic markets. For example, do certain kinds of firms in low concentration industries exhibit a high tolerance for

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22 Supra, pp. 15-16.
supplier control while others exhibit a low level of control
tolerance? Also, what kinds of middlemen in high concentration
industries are more or less tolerant of supplier control?

This study suggests also that retailer perceptions of the
effect of various supplier policies upon retailer profits differ
significantly. Additional investigations are warranted to determine
if different kinds of dealers have significantly different perceptions
of retail profits at various levels of supplier control of marketing
variables.

It has been demonstrated in this study (subject to future
validation) that it is feasible to develop a methodology consisting
of established behavioral science research techniques to examine a
behavioral dimension of distribution channels. Attitude measurement
techniques seem applicable to explain and predict channel member
behavior.

This empirical examination of the control, tolerance and
performance relationship in a distribution channel contributes to the
developing body of marketing investigations of channel behavioral
phenomena. Rosenberg has empirically examined channel conflict;
El-Ansary, Walker and Wilkinson have investigated channel power; and
Schultz has examined the relationship between bases of power and
channel conflict.23

As the behavioral dimensions of distribution channels are
better understood, it will become increasingly important for the
marketing theorist to relate his conceptualizations and understanding

of channel power, control, tolerance, performance and conflict. Even though the marketer's tools for measuring these phenomena are crude, comprehensive investigations in operating channel systems are needed so that channel theory development can continue.

Kendall A. Adams and Louis P. Bucklin previously conceptualized the channel control/performance relationship. Adams found that there was a relationship between retailers' attitudes toward wholesaler control of retailer marketing variables in voluntary retailer cooperatives and the retailers' perceptions of the impact of those controls upon their profits. Adams used indifference and income possibility curves to conceptualize that relationship. However, the methodology used in his study did not enable him to empirically generate the indifference and income possibility curves of his model. A standardized methodology for analysis that will facilitate comparisons of results from different studies is essential.

Bucklin's conceptualization of distributor perceptions of payoff at various levels of supplier control and distributor tolerance for control at various levels of payoff evoked this study. Bucklin's control model was modified in this study to recognize the interactive nature of channel control relationships. Empirical evidence was generated that supports the basic model of the control/tolerance/payoff relationships between a supplier and his distributors.

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24 Adams, "The Acceptance and Use of Special Services by Selected Supermarket Owner-Managers in Michigan;" and Bucklin, "A Theory of Channel Control."

25 Supra, pp. 71-72
Chapter 6

DISTRIBUTION CHANNEL CONTROL:
SUMMARY AND CONCLUSIONS

A number of marketing scholars during the 1950's and 1960's devoted significant attention to the analysis of distribution channels as social organizations with behavioral dimensions. The early 1970's have been characterized by empirical investigations of behavioral phenomena such as power and conflict in marketing channels.

This study sought to contribute to the marketing scholar and practitioner a better understanding of the nature of control in distribution channels. In this final chapter, the objectives, scope and methodology of the study are reviewed. Also, the conceptual model of channel control upon which the study was based is summarized. The dissertation is terminated with a final critical analysis of the study and its implications for future channel research.

Summary of the Study Objectives and Scope

The specific objectives of this study were:

1. to develop a conceptual model which explains the nature of control over marketing variables between a supplier and his distributors in a distribution channel;

2. to develop a methodology for empirically examining the relationships hypothesized in the proposed model of channel control;

3. to apply the methodology to a distribution channel group to:
   a. examine the methodology
   b. verify the middleman portion of the conceptual model.
The research was conducted in a carpet and rug supply channel in south Louisiana. Retail carpet dealers in the geographic scope of the study who were served by a major distributor of a well known national brand of carpet constitute the channel group surveyed. A personally administered, structured-direct questionnaire was used to obtain desired information from the carpet dealers. Responses were obtained from the retail store manager in most cases. The manager of the carpet department was interviewed in the limited number of cases in which carpet departments were maintained.

**Development of the Model of Channel Control**

Chapter 2 of this study consisted of a review of behavioral science literature related to the concepts of power, control, performance and satisfaction. Special attention was given to attempts to measure power and control in distribution channels and single organizations.

A model of the key interrelationships among the concepts of power, control, satisfaction, performance and tolerance was developed to guide the literature review. In a distribution channel, the level of control achieved by one firm over specific activities of another firm is determined by the former's power or potential to exert influence as well as its desire to influence the latter. Also, the level of control achieved is dependent upon the controlled firm's tolerance or willing acceptance of the controlling firm's influence. The level of control achieved in a distribution channel affects not only the level of performance of the channel members, but it also
affects their satisfaction with their enterprise channel relationships. Additionally, the satisfaction of key executives of the organizations affects their performance as well as their tolerance for control by the controlling firm.

A conceptual model of channel control was presented in the third chapter. The model is based upon the literature reviewed in the second chapter, especially the works of Arnold S. Tannenbaum, Kendall A. Adams and Louis P. Bucklin. The model is essentially a modification of the model developed by Bucklin for his theory of channel control.¹ The modified version, however, suggests that:

1. control in enterprise marketing channels is a result of a mutual and not a unilateral process; i.e. the level of control achieved is the result of an interaction of the efforts of channel members to achieve relative control over each other and to maintain their individual autonomy;

2. no one channel level can be singled out as most appropriate to control the other channel levels in all situations; rather, a contingency theory of channel control is suggested;

3. for both conceptual and methodological reasons, power and control in enterprise marketing channels must be viewed as issue specific.

The model of channel control is dyadic. It depicts a payoff and a tolerance function for a middleman and a supplier. The payoff functions depict the channel members' perceptions of the profits that would accrue to them at each of several different levels of middleman-supplier relative control over a marketing variable; e.g., resale pricing. The tolerance functions depict the channel members' satisfaction with their enterprise channel relationships.

¹Bucklin, "A Theory of Channel Control."
feelings of burden and sacrifice incurred from acceding to another's relative control over a marketing variable. More specifically, the tolerance functions depict the maximum level of relative control by another firm in the channel to which each channel member willingly accedes at each level of economic payoff. The intersection of each member's payoff and tolerance functions defines the maximum level of relative control that can possibly be achieved by the other firm.

**Methodology of the Study**

The methodology of this study was reported in Chapter 4. This effort was classified as a field study as opposed to either a laboratory or field experiment. Because empirical research dealing with channel control is limited, an attitude of exploration as well as hypothesis testing was maintained throughout the investigation. Several suggestions for future channel control research which emerged during the investigation are offered below.

A personally administered structured-direct questionnaire was used to collect data from the carpet retailers that was suitable for the estimation of their payoff and tolerance functions. A semantic differential format using six bipolar adjectives was used to obtain measures of dealer attitudes toward hypothetical channel situations. One and two-factor analysis of variance and simple linear and quadratic regression analysis was used to analyze the data. An original procedure was used to determine the maximum level of relative supplier control that each dealer would tolerate at each level of dealer payoff.

Thurstone's law of comparative judgement was used to develop
interval scale values for each of five resale price policies which represented different levels of relative supplier control. The issue investigated was retail pricing of the nationally branded carpet line.

Six hypotheses were tested to examine the following questions.

1. Did the retail carpet dealers think that their profits would be affected if the carpet supplier adopted a different resale price policy which would have given the supplier greater relative control over retail pricing of carpet?

2. How did the retail carpet dealers think their profits would be affected if the supplier adopted different resale price policies?

3. Were the dealers' attitudes toward their enterprise channel relationships affected by different levels of relative supplier control and by different levels of dealer profits?

4. How did proposed increases in dealer profits affect the dealers' attitudes toward their enterprise channel relationships?

5. How did proposed increases in the supplier's relative control of the dealers' retail price decision affect the dealers' attitudes toward their enterprise channel relationships?

6. What was the nature of the relationship between the maximum relative supplier control tolerated by the dealers and dealers' profits?

The analysis of the data and the findings of the study were reported in the fifth chapter. Those findings are summarized in the following section.
Review of the Findings

1. The retail carpet dealers did not, on the average, believe that their profits would be significantly affected if the supplier adopted any of the four resale price policies which reflected greater relative supplier control than the present policy. Potential explanations for this finding include: (a.) some dealers did not believe that the supplier price control policies could be enforced; (b.) some felt that they could maintain their present profit level by varying the quality of their installation service; (c.) some believed that consumer brand preference was so weak that they could sell other brands with greater pricing freedom if necessary to maintain their present sales volume and profit levels; and (d.) some dealers would be unaffected by the adoption of any of the potential policies since their present pricing practices were within all of the policies' guidelines.

2. Neither a linear nor a quadratic equation form did an acceptable job of explaining the nature of the average dealer payoff function. Simple linear and curvilinear regressions of the dealers' payoff perceptions against the five resale price policies yielded insignificant explanations of the variation in the data.

   Further analysis of the dealer payoff perceptions showed that there were significant differences among the individual dealer's average payoff perceptions. This suggested that certain classes of dealers had payoff perceptions significantly different from the perceptions of other classes of dealers.

3. The dealers' attitudes toward twenty hypothetical channel
situations were found to be significantly affected by both the level of dealer profits and the level of relative supplier resale price control which characterized the situations. This finding, in general, supports the proposed conceptual model of channel control which posits that the level of control over marketing variables achieved in a channel relationship is the result of the interaction between channel member's desires for profits and for independence.

4. The carpet retailers surveyed were found to be "economic men" to some degree. Their attitudes toward many alternative channel situations were positively affected by increases in their net profits at all levels of relative supplier control of the retail price decision.

The carpet dealers were also found to be negatively disposed toward greater relative supplier control over the retail pricing of carpet. Thus, the dealers' desire for additional net profits was counterbalanced by an aversion for supplier control.

5. Dealer resistance to supplier control of carpet pricing was found to increase at an increasing rate. This fact was reflected in the curvilinear average dealer tolerance function that was computed. The finding suggests that carpet dealers' resistance to supplier demands for relative control beyond some limit becomes absolute. That is, no matter what the supplier offers the dealers in terms of additional profit opportunities, the dealers will not acquiesce to the control demands above some level of relative supplier control.
A Retrospective Appraisal of the Study

Some potential limitations of this study were considered in Chapter 4. The conclusion was reached at that point that there were no serious limitations of the study. It is appropriate in concluding this dissertation to critically examine the study in retrospect.

It is obvious that the methodology of this study yields only a picture of the channel control relationship at a point in time. Much like the micro-economic price theory models, the study represents a static analysis of a dynamic situation. The fact that this study was conducted during a period of rampant inflation, serious raw material and finished goods shortages and, indeed, political turbulence throughout the United States and the world must be considered to have affected the dealers' responses.

However, this fact does not efface the value of the conceptual model or the methodology for decision-makers. Repeated measures over time of a single channel group would identify any changes in channel members' payoff perceptions and tolerance for control by other organizations. The researcher's task with repeated measures would be to explain why the changes occurred.

Second, the analysis of measures of channel members' payoff perceptions and tolerances for supplier control should consider the different characteristics of the organizations examined. In other words, average payoff and tolerance functions for a large group of middlemen may conceal more than they expose. This problem, also, may be overcome by very simply collecting descriptive information about the middlemen surveyed and analyzing the variations in the
payoff and tolerance measures according to the differences in the middlemen's characteristics.

Finally, the proposed methodology does not provide for the determination of the interaction or trade-off effect of several marketing strategy variables. While it is held that measures of channel control must be issue specific rather than global to be meaningful to theorists and decision-makers, it must also be recognized that middlemen's payoff and tolerance for supplier control over the retail promotion mix is probably significantly affected by the extent to which the supplier controls the retailer's product mix decisions. The measures obtained for this study related to changes in supplier control over resale pricing with all other factors held constant.

The findings of this study and the critical analysis presented above contain several implications for future distribution channel research. Some of these implications are presented below with an assessment of the contribution of this study to the growing body of knowledge of channel behavioral phenomena.

Implications for Future Channel Research

This study was an initial investigation of a conceptualization of channel control relationships. The findings and retrospective analysis of the study suggest several implications for future channel research.

1. The methodology of the study can be simplified considerably. This would make it much easier for the researcher to increase
the size of the channel group studied as well as minimize the time required to interview respondents.

First, the number of bipolar adjectives used in a semantic differential format to measure dealer attitudes toward alternative enterprise channel relationships can be reduced. The split-halves reliability coefficient calculated to test for the reliability of the attitude measurements demonstrated redundancy in the questionnaire. It is suggested that future studies using a semantic differential format limit the number of bipolar adjectives to one, two or three.

Second, the number of paired comparisons of supplier marketing policies (e.g., resale price policies) made by the respondents to generate interval scale relative control values can be reduced to minimize experimental labor. When approximate rank orders of the policies are known, proportions need be obtained only for those pairs of policies which are close together on the preconceived scale. Also, it is possible to use experimental methods other than paired comparisons to obtain data to compute interval scale values with the law of comparative judgement. One such alternative is to have respondents rank the policies in order of their relative supplier control. These and several other methods to minimize the experimental labor associated with the law of comparative judgement are described by Torgerson.²

2. With a methodology that incorporates the suggestions

²Torgerson, Theory and Methods of Scaling, pp. 191-194.
presented above, it would be feasible to examine more than a single issue. Based upon Simon's methodology and its modifications discussed in Chapter 3, $^3$ it would be possible to: (a.) generate a list of relevant marketing variables; (b.) weight the issues in terms of their perceived and attributed importance throughout enterprise channels; and (c.) measure payoff perceptions and attitudes and generate payoff and tolerance functions for individual issues and for all of the issues deemed relevant to the channel members.

The problems associated with developing aggregate measures of control have been recognized here and in other places. Even this suggestion does not account for the interaction among channel members' payoff perceptions and control tolerances for several issues. However, this is at least one step toward the development of methodologies that will yield valid and reliable measures.

3. Two specific suggestions for future research emerged from this study. First, additional examinations are needed to generate issue specific and global payoff and tolerance functions for different classes of middlemen in different kinds of industries. Such studies would contribute to a more complete understanding of channel behavior than is provided by the economic market structure theory. While additional studies testing the model of channel control proposed herein will contribute to the development of a theory of channel control, they will also provide substance for an integrative model.

$^3$Supra, pp. 107-109.
and theory of distribution channel behavior.

Second, repeated measures of payoff and tolerance functions over time with supplier and/or middleman strategies designed to shift or alter the channel payoff and tolerance functions serving as experimental treatments are needed. Such experiments will suggest the most effective strategies to affect channel members' payoff and tolerance functions. Studies are also needed to determine the effect of market supply and demand conditions upon channel members' payoff perceptions under alternative levels of relative control and tolerances for other-control at different payoff levels.

4. El-Ansary, Rosenberg, Schultz, Walker and Wilkinson have examined distribution channel behavioral phenomena in the field as well as in the laboratory. They have concerned themselves primarily with the study of power sources and measures of power and conflict causes and measures of conflict. This study has focused upon the channel control-tolerance-satisfaction-performance complex. It seems appropriate now for marketers to propose and test conceptual models which integrate the findings of these separate investigations. It is not altogether unreasonable to propose a theoretical model of channel member behavior that would be suitable for comprehensive research examination.

In conclusion, this dissertation offers a conceptual model of channel control, a methodology suitable for the empirical examination of control relationships in operating distribution channels and findings that suggest future directions for distribution channel research. It is hoped that this study will serve as a contribution
that will be integrated with other studies of channel behavioral phenomena to build a theory of distribution channel behavior.
SELECTED BIBLIOGRAPHY

A. BOOKS


B. PERIODICALS


C. MISCELLANEOUS


APPENDIXES
APPENDIX A

DEALER QUESTIONNAIRE

Each dealer interviewed received a copy of the questionnaire which appears on the following pages. The actual questionnaire, however, was bound in a pamphlet with eight and one-half by five and one-half dimensions (one-half page). For reproduction purposes, the questionnaire is presented here with two actual questionnaire pages per page. Also, the names of the carpet wholesaler and the carpet brand studied are disguised.
Introduction. The purpose of this survey is to determine the nature of the relationship that exists between the ability of rug and carpet dealers to set the retail price on carpet and dealer profits. With knowledge of this relationship, retail carpet dealers can better design their marketing strategy to increase their profits.

Part I of the questionnaire asks you to evaluate several possible policies that one of your suppliers might adopt to govern retail pricing of carpet. Part II asks you to express your feelings about twenty-one possible situations. Each situation represents a combination of a change in the net profits that you would make (i.e., sales minus cost of goods sold and selling and administrative expenses) and a carpet supplier's policy regarding the way you set the price on carpet that you sell to your customers. Part III of the questionnaire is composed of five questions which ask what you think would happen to your net profits if your supplier adopted various resale price policies.

This survey is being conducted as part of the researcher's requirements for the degree of doctor of philosophy in marketing at Louisiana State University. Answers to all questions will be strictly confidential. Results of the survey will appear in summary form in the researcher's doctoral dissertation, but in no case will any of your responses be identifiable.

Part I. Ten pairs of policies which could be adopted by the distributor of Brand X carpets are presented below. Each statement presented represents a resale price policy that Original Wholesale Supply, Inc. could adopt to govern the pricing practices of all retailers who carry Brand X carpets. A resale price policy is a statement which tells all retailers, like yourself, how to set the price that you charge your customers for Brand X carpet. If one of the following policies was adopted, it would apply to all Brand X dealers -- not just you.

For each pair of policies, indicate by placing an X in the appropriate circle which policy you think would give Original greater control over all carpet retailers' ability to set the price on the Brand X carpet that they sell. For example, two policies that might be adopted by Cardinal are:

1. Original doesn't care what price Brand X retailers charge their customers.
2. Original requires all Brand X carpet retailers to charge all of their customers the manufacturer's suggested retail price for all Brand X products.

You would most probably place an X in the second circle. The second policy represents greater control by Original over all of the Brand X dealers.
Original Wholesale Supply, Inc. offers a suggested retail price but you may freely deviate up or down from that suggestion in setting your retail price on Brand X carpet.

Original Wholesale Supply, Inc. urges you to set your retail price within a range of 20 to 80 percent markup over the delivered cost that you pay for Brand X carpet, but you may sometimes deviate up or down from that range.

Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price.

Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for Brand X carpet.
Original Wholesale Supply, Inc. urges you to set your retail price within a range of 20 to 80 percent markup over the delivered cost that you pay for Brand X carpet, but you may sometimes deviate up or down from that range.

Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 40 percent above the delivered cost that you pay for those products.

Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price.

Original Wholesale Supply, Inc. offers a suggested retail price, but you may freely deviate up or down from that suggestion in setting your retail price on Brand X carpet.
Original Wholesale Supply, Inc. offers a *suggested retail price* but you may *freely deviate up or down* from that suggestion in setting your retail price on Brand X carpet.

Original Wholesale Supply, Inc. offers no *suggested retail price* and you are free to charge your customers *any price* that you desire for Brand X carpet.

Original Wholesale Supply, Inc. offers a *suggested retail price* but you may *freely deviate up or down* from that suggestion in setting your retail price on Brand X carpet.

Original Wholesale Supply, Inc. has a policy that you and all dealers *must* set your retail price on Brand X carpet at 40 *percent* above the delivered cost that you pay for those products.
Original Wholesale Supply, Inc. urges you to set your retail price within a range of 20 to 80 percent markup over the delivered cost that you pay for Brand X carpet, but you may sometimes deviate up or down from that range.

Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price.

Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for Brand X carpet.

Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 40 percent above the delivered cost that you pay for those products.
Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 41 percent above the delivered cost that you pay for those products.

Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price.

Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for Brand X carpet.

Original Wholesale Supply, Inc. urges you to set your retail price within a range of 20 to 80 percent markup over the delivered cost that you pay for Brand X carpet, but you may sometimes deviate up or down from that range.
Part II. The purpose of this part of the study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In answering these questions, please make your judgements on the basis of what these things mean to you. On each page of this booklet you will find a different situation to be judged and beneath it a set of scales. You are to rate the situation on each of these scales in order.

Here is how you are to use these scales:

If you feel that the situation at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

- fair
  - __________
  - _________
  - ___ unfair
- unfair
  - __________
  - _________
  - ___ unfair

If you feel that the situation is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

- good
  - __________
  - _________
  - ___ bad
- bad
  - __________
  - _________
  - ___ bad

If the situation seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

- awful
  - __________
  - _________
  - ___ nice
- nice
  - __________
  - _________
  - ___ nice

The direction toward which you check, of course, depends upon which of the two ends of the scale seems most characteristic of the situation you're judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the situation, or if the scale is completely irrelevant, unrelated to the situation, then you should place your check-mark in the middle space.

- valuable
  - __________
  - _________
  - ___ worthless

NOTE: (1) Place your check-marks in the middle of the spaces, not on the boundaries:

- This
  - __________
  - _________
  - ___ Not This
- X

(2) Be sure to check every scale for every situation -- do not omit any.

(3) Never put more than one check-mark on a single scale.
Sometimes you may feel that you've answered the same question before. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier. Make a separate and independent judgement for each situation. Work at a fairly high speed. Do not worry or puzzle over individual situations. It is your first impressions, your immediate feelings about the situations, that are important. On the other hand, please do not be careless, because your true impressions are most important.

IMPORTANT: Some situations presented below might seem to you to be improbable. For example, you might not think that your profits would increase if Original Wholesale Supply, Inc. adopted a particular resale price policy to govern all Brand X retailers. However, just assume that the situation did happen and then express your feelings about that situation.

Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 40 percent above the delivered cost that you pay for those products. Also, your net profits increase 15 to 25 percent over your present level of net profits.

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<td>Unfair</td>
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<tr>
<td>Happy</td>
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</table>
Original Wholesale Supply, Inc. urges you to set your retail price within a range of 20 to 80 percent markup over the delivered cost that you pay for Brand X carpet, but you may sometimes deviate up or down from that range. Also, your net profits decrease 5 to 15 percent from your present level of net profits.

Unpleasant ________________________ Pleasant
Good ___________________________ Bad
Valuable _________________________ Worthless
Awful ___________________________ Nice
Fair _______________________________ Unfair
Sad _______________________________ Happy
Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 40 percent above the delivered cost that you pay for those products. Also, your net profits increase 5 to 15 percent over your present level of net profits.


Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 40 percent above the delivered cost that you pay for those products. Also, your net profits decrease 5 to 15 percent from your present level of net profits.

Unpleasant  | Pleasant
Good       | Bad
Valuable   | Worthless
Awful      | Nice
Fair       | Unfair
Sad        | Happy

Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price. Also, your net profits increase 5 to 15 percent over your present level of net profits.

Unpleasant  | Pleasant
Good       | Bad
Valuable   | Worthless
Awful      | Nice
Fair       | Unfair
Sad        | Happy
Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price. Also, your net profits increase 15 to 25 percent over your present level of net profits.

Unpleasant    Pleasant
Good          Bad
Valuable      Worthless
Awful        Nice
Fair          Unfair
Sad           Happy
Original Wholesale Supply, Inc. sets a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price. Also, your net profits remain about what they are now.

Original Wholesale Supply, Inc. offers a suggested retail price, but you may freely deviate up or down from that suggestion in setting your retail price on Brand X carpet. Also, your net profits increase 15 to 25 percent over your present level of net profits.
Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for Brand X carpet. Also, your net profits remain about what they are now.

Original Wholesale Supply, Inc. offers a suggested retail price, but you may freely deviate up or down from that suggestion in setting your retail price on Brand X carpet. Also, your net profits increase 5 to 15 percent over your present level of net profits.

Unpleasant  ___  ___  ___  ___  ___  ___  ___  ___  ___  Pleasant
Good  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  Bad
Valuable  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  Worthless
Awful  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  Nice
Fair  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  Unfair
Sad  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  Happy
Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for Brand X carpet. Also, your net profits increase 5 to 15 percent over your present level of net profits.

<table>
<thead>
<tr>
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<tr>
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<td>Fair</td>
<td>Unfair</td>
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<tr>
<td>Sad</td>
<td>Happy</td>
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</tbody>
</table>
Original Wholesale Supply, Inc. offers no **suggested retail price** and you are free to charge your customers any price that you desire for Brand X carpet. Also, your net profits increase 15 to 25 percent over your present level of net profits.

- **Unpleasant**: ___:____:____:____:____:____:____:____  **Pleasant**: ______:____:____:____:____:____:____:____
- **Good**: __:____:____:____:____:____:____:____  **Bad**: ______:____:____:____:____:____:____:____
- **Valuable**: __:____:____:____:____:____:____:____  **Worthless**: ____:____:____:____:____:____:____:____
- **Awful**: __:____:____:____:____:____:____:____  **Nice**: ___:____:____:____:____:____:____:____
- **Fair**: __:____:____:____:____:____:____:____  **Unfair**: ____:____:____:____:____:____:____:____
- **Sad**: ___:____:____:____:____:____:____:____  **Happy**: ___:____:____:____:____:____:____:____
Original Wholesale Supply, Inc. urges you to set your retail price within a range of **20 to 80 percent markup** over the **delivered cost** that you pay for Brand X carpet, but you may sometimes deviate up or down from that range. Also, your net profits increase 5 to 15 percent over your present level of net profits.

<table>
<thead>
<tr>
<th>Unpleasant</th>
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<tr>
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</table>
Part III. Five resale price policies that could be adopted by Original Wholesale Supply, Inc. to govern the retail price setting practices of their customers on Brand X carpets are presented below. Simply place an X in the blank that represents what you think the effect on your profits would be if Original adopted each policy to govern the price setting practices of all Brand X carpet dealers.

Original Wholesale Supply, Inc. offers no suggested retail price and you are free to charge your customers any price that you desire for Brand X carpet.

___ your net profits will decrease 15 to 25 percent

___ your net profits will decrease 5 to 15 percent

___ your net profits will remain about what they are now

___ your net profits will increase 5 to 15 percent

___ your net profits will increase 15 to 25 percent
Original Wholesale Supply, Inc. offers a suggested retail price, but you may freely deviate up or down from that suggestion in setting your retail price on Brand X carpet.

___ your net profits will decrease 15 to 25 percent
___ your net profits will decrease 5 to 15 percent
___ your net profits will remain about what they are now
___ your net profits will increase 5 to 15 percent
___ your net profits will increase 15 to 25 percent

Original Wholesale Supply, Inc. urges you to set your retail price within a range of 20 to 80 percent markup over the delivered cost that you pay for Brand X carpet, but you may sometimes deviate up or down from that range.

___ your net profits will decrease 15 to 25 percent
___ your net profits will decrease 5 to 15 percent
___ your net profits will remain about what they are now
___ your net profits will increase 5 to 15 percent
___ your net profits will increase 15 to 25 percent
Original Wholesale Supply, Inc. set a range of 30 to 60 percent markup over the delivered cost that you pay for Brand X carpet within which you must set your retail price.

- your net profits will decrease 15 to 25 percent
- your net profits will decrease 5 to 15 percent
- your net profits will remain about what they are now
- your net profits will increase 5 to 15 percent
- your net profits will increase 15 to 25 percent

Original Wholesale Supply, Inc. has a policy that you and all dealers must set your retail price on Brand X carpet at 40 percent above the delivered cost that you pay for those products.

- your net profits will decrease 15 to 25 percent
- your net profits will decrease 5 to 15 percent
- your net profits will remain about what they are now
- your net profits will increase 5 to 15 percent
- your net profits will increase 15 to 25 percent
APPENDIX B

MEASURES OF DEALERS' ATTITUDES TOWARD
ALTERNATIVE CHANNEL SITUATIONS

Questionnaire: Part II

Notation used in the table on the following pages:

1. Bipolar Adjectives

1 = Unpleasant/Pleasant  4 = Awful/Nice
2 = Bad/Good          5 = Unfair/Fair
3 = Worthless/Valuable 6 = Sad/Happy

2. $S_{j,k} = \text{Dealer Attitude Score Toward Dealer Payoff Level and}$
   $\text{Supplier Resale Price Policy Combinations where:}$
   $j = \text{Payoff Levels 1 to 5}$
   $k = \text{Control Levels (Price Policies) 1 to 5}$

Polar Term A $\begin{array}{cccccc}
1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\end{array}$ Polar Term B

where:

1 = Very A
2 = Quite A
3 = Slightly A
4 = Neither A nor B or Equally A and B
5 = Slightly B
6 = Quite B
7 = Very B
Measures of Dealer Attitudes Toward Dealer
Payoff Level and Supplier Resale Price Policy Combinations

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### APPENDIX C

**DEALERS' PERCEPTIONS OF PAYOFF FOR EACH SUPPLIER RESALE PRICE POLICY (PP<sub>i,k</sub>)**

**Questionnaire: Part III**

\[ PP_{i,k} = \text{Perceived payoff of each dealer (i) at each level of supplier control (k)} \]

Payoff Level 1 = dealer net profits will decrease 15 to 25 percent  
Payoff Level 2 = dealer net profits will decrease 5 to 15 percent  
Payoff Level 3 = dealer net profits will remain what they are now  
Payoff Level 4 = dealer net profits will increase 5 to 15 percent  
Payoff Level 5 = dealer net profits will increase 15 to 25 percent

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APPENDIX D

MAXIMUM RELATIVE CONTROL LEVEL TOLERATED BY EACH DEALER AT EACH LEVEL OF CHANGE IN ANNUAL NET DEALER PROFITS

Notation used in the table on the following pages:

\( i = \) dealer 1, 2, 3, ..., 20

\( j = \) payoff levels 1, 2, 3, 4, 5

\( k = \) relative supplier control levels 1, 2, 3, 4, 5 (resale price policies)

\( CS_{i,j,k} = \) composite attitude score for dealer \( i \) toward payoff level \( j \) and policy \( k \)

\( MC_{i,j} = \) maximum level of relative supplier control tolerated by dealer \( i \) at payoff level \( j \)
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<th>Payoff Level (j)</th>
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Robert A. Robicheaux, son of Darlferes and Celeste Robicheaux, was born on October 20, 1947 in New Orleans, Louisiana. He attended public schools in New Orleans and was graduated from John McDonogh Senior High School in May, 1965.

He entered Louisiana State University in the fall of 1965 and received the Bachelor of Science degree in Marketing in May, 1969. As an undergraduate he received Louisiana Power and Light Company scholarships in 1967 and 1968 and was elected to membership in Beta Gamma Sigma, Phi Kappa Phi and Pi Tau Pi. Also, he was selected in 1969 to Who's Who Among Students in American Colleges and Universities.

From 1969 to 1970, he served four months active duty with the United States Army and was a sales representative for Louisiana Power and Light Company. In 1970 he married Cynthia Dale Gonzales, daughter of Roy and Shirley Gonzales.

Mr. Robicheaux began work toward his doctoral degree at Louisiana State University in September, 1970. He served as a National Defense Education Act Title IV Fellow from September 1970 to August 1973. During that time, he was also first a research assistant and then a teaching assistant in the Department of Marketing. In 1973 he was appointed Instructor of Marketing at Louisiana State University and represented the Department of Marketing as a Fellow of the 1973 American Marketing Association Doctoral Consortium.
He is presently a candidate for the degree of Doctor of Philosophy in the Department of Marketing at Louisiana State University.
EXAMINATION AND THESIS REPORT

Candidate: Robert A. Robicheaux

Major Field: Marketing

Title of Thesis: Control in a Distribution Channel: A Field Study

Approved:

Signed:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination: July 18, 1974