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I am submitting herewith a dissertation written by John C. Keyt entitled "Interorganizational Dependence in Marketing Channels: A Test of a Model and Methodology." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Business Administration.

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We have read this dissertation
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INTERORGANIZATIONAL DEPENDENCE IN MARKETING CHANNELS: A TEST OF A MODEL AND METHODOLOGY

A Dissertation

Presented for the

Doctor of Business Administration

Degree

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ABSTRACT

This study sought to take a theoretical model of dependence developed by Cadotte and Stern and operationalize that model in a marketing channels setting. Previous conceptual writings by social scientists had suggested that dependence was the key variable in studying power and conflict among organizations. Dependence also was suggested as the link between power and conflict. The study thus looked at the relationships between dependence and power and conflict.

A contrived laboratory situation called a parasimulation was used as the experimental setting chiefly because it offered a high level of control and allowed accessibility to data. Subjects were college students who were taking a marketing channels course. The experimental variable was the number of potential options available to the channel firms. It was posited that the greater the potential options, the less dependent; and the fewer the number of potential options, the more dependent. Variation in the number of options was provided by differing the number of firms at each level of the channel.

Dependence was measured by two methods. Actual costs and benefits of relationships were obtained from parasimulation firms. Dependence was then calculated utilizing the dependence model. Also, firm executives were asked their perceptions of their dependence on the other firms. Power was measured by asking the extent of control the other firms had over marketing decision variables as perceived by firm executives. Conflict was measured by the perception of executives with respect to certain conflictive behaviors exhibited by the other firms.

Hypotheses were then developed. Dependence hypotheses tested the validity of the dependence model by predicting levels of dependence. The relationship between the two methods of dependence measurement was also tested. Power hypotheses tested the relationship between power and dependence. Conflict hypotheses tested the relationship between conflict and dependence.

The hypothesized relationship between dependence and the number of options available was not supported by the test results. Since these hypotheses were used to develop the power and conflict hypotheses, their rejection indicated that the power and conflict hypotheses would not be supported. This contention was the case for the power and conflict hypotheses. The most promising cause for the lack of support concerned the executives' perception of the number of potential alternatives. Consumer behavior research has shown that consumers only perceive a subset (the evoked set) of all potential brands. If channel executives also employed this mechanism, the number of potential alternatives they perceived and the number of alternatives as determined by the parasimulation may not have been the same.

Firms were divided into large and small set groups based on the sizes of their evoked sets. Firms with small set sizes should have been more dependent, while firms with large set sizes should have been less dependent. Hypotheses for dependence, power, and conflict were reformulated using the size of the evoked set as the experimental variable. Test results for the dependence and power hypotheses supported the operationalized dependence model and its relationship with power. These findings indicated that the problem with the original analysis was that

of perception of the number of potential options.

The relationship between conflict and dependence was not supported. Failure to measure all the components specified by the overall channel relations model as producers of conflict was offered as the most probable cause.

There were several implications from the study. First, the further use of the parasimulation as a research tool was recommended. Methods for improving the measurement of dependence and conflict were also suggested.

Future research directions included suggestions for replication and effort in the study of goals, conflict causes, and the relationship between dependence and power bases.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION AND HISTORY OF THE PROBLEM.	1
	History of the Problem	1
	Proposed Study	10
	Importance of the Study	10
	General Research Plan	11
II.	DISTRIBUTION CHANNEL RESEARCH FOUNDATIONS.	13
	Introduction	13
	Interorganizational Dependence	13
	Channel Power Research	27
	Intrachannel Conflict Research	47
	General Research Summary and Conclusions	61
	An Integrative Approach to Channel Research	66
	Future Directions for Channel Research	70
III.	OBJECTIVES, VARIABLES, AND CHANNEL SETTING	72
	Overview	72
	Research Objectives	72
	Variable Operationalization	74
	Channel Setting	85
	Summary	98
IV.	MEASUREMENT OF VARIABLES, HYPOTHESES, AND METHODOLOGY. . .	99
	Overview	99
	Variable Measurement	99
	Description of Experimental Setting	115
	Hypotheses	120
	Summary	127
V.	RESULTS AND ANALYSES	129
	Introduction	129
	Channel Setting Development and Control	129
	Results of the Study	139
	Summary	170
VI.	IMPLICATIONS AND FUTURE RESEARCH DIRECTIONS.	174
	Introduction	174
	Summary of the Study	174
	Implications	177
	Future Research Directions	184
	Final Summary of the Study	187
LIST OF REFERENCES		189
APPENDICES		195
APPENDIX A. LIVE CHANNEL SIMULATION		196

CHAPTER PAGE

APPENDICES (continued)
APPENDIX B. ORGANIZATIONAL PERCEPTION QUESTIONNAIRE 214
APPENDIX C. ITEMS DEVELOPED FOR MEASURING PERCEPTUAL VARIABLES 216
APPENDIX D. ROTATED FACTOR MATRIX OF ORIGINAL CONFLICT QUESTIONNAIRE 218
APPENDIX E. RESULTS OF ORGANIZATIONAL PERCEPTION 220
APPENDIX F. REANALYSIS INFORMATION 225
APPENDIX G. DATA SUMMARIES 230

VITA 253

LIST OF TABLES

TABLE		PAGE
1.	Experimental Variable.	117
2.	Hypothesized Levels of Variables by Firm Type and Channel Structure.	118
3.	Statistics Used in Hypothesis Testing.	126
4.	Mann-Whitney U's and Levels of Significance for Dependence Hypotheses.	141
5.	Mann-Whitney U's and Levels of Significance for Perceptual Dependence Hypotheses	145
6.	Kendall's Tau's and Significance Levels of the Relationship between Dependence and Perceptual Dependence. .	147
7.	Mann-Whitney U's and Levels of Significance for Power Hypotheses P_1 and P_2	149
8.	Kendall's Tau's and Significance Levels of the Relationship between Power and Dependence.	150
9.	Kendall's Tau's and Significance Levels of the Relationship between Power and Perceptual Dependence	152
10.	Mann-Whitney U's and Levels of Significance for Comparison of Perceptual Conflict Levels.	154
11.	Mann-Whitney U's and Significance Levels for Reanalysis Dependence Hypothesis.	161
12.	Mann-Whitney U's and Significance Levels for Reanalysis Perceptual Dependence Hypothesis	161
13.	Kendall's Tau's and Significance Levels of the Relationship between Dependence and Perceptual Dependence in Reanalysis.	162
14.	Mann-Whitney U's and Levels of Significance for Power Hypothesis P_{1E}	164
15.	Kendall's Tau's and Significance Levels of the Relationship between Power and Two Methods of Dependence Measurement.	165
16.	Mann-Whitney U's and Levels of Significance for Comparison of Perceived Conflict Levels in Reanalysis . . .	168

TABLE		PAGE
17.	Summary of Hypothesis Testing.	171
18.	Summary of Reanalysis Hypothesis Testing	172
A-1.	Capacity Cost.	204
A-2.	Production Cost.	205
A-3.	Interstate Freight Taxes	207
A-4.	Inventory Carrying Charges	209
A-5.	Financial Position of Each Team at the Beginning of the Simulation.	212
D-1.	Rotated Factor Matrix.	219
E-1.	Mann-Whitney U's and Levels of Significance for Organizational Perception: Open versus Basal Groups . .	221
E-2.	Mann-Whitney U's and Levels of Significance for Organizational Perception: Forced versus Basal Groups .	222
E-3.	Mann-Whitney U's and Levels of Significance for Organizational Perception: Open versus Forced Groups. .	223
E-4.	Mean Scores and Levels of Significance for Class Exams: Open versus Forced Groups.	224
F-1.	Firms Ranked by Evoked Set Size.	226
F-2.	Firms Used in Extreme Approach	227
F-3.	Firms Used in Inclusive Approach	228
F-4.	Results of Fisher's Test on Reanalysis Groups in Both Approaches.	229
G-1.	Open Condition Summary Data of Dependence.	231
G-2.	Open Condition Summary Data of Perceptual Dependence-- Question 1	232
G-3.	Open Condition Summary Data of Perceptual Dependence-- Question 2	233
G-4.	Open Condition Data Summary of Perceived Power-- Question 1	234
G-5.	Open Condition Summary Data of Perceived Power-- Question 2	235

TABLE PAGE

G-6. Open Condition Summary Data of Perceived Power--Question 3 236

G-7. Open Condition Summary Data of Perceived Power--Question 4 237

G-8. Open Condition Summary Data of Perceived Conflict--Question 1 238

G-9. Open Condition Summary Data of Perceived Conflict--Question 2 239

G-10. Open Condition Summary Data of Perceived Conflict--Question 3 240

G-11. Open Condition Summary Data of Perceived Conflict--Question 4 241

G-12. Forced Condition Summary Data of Dependence. 242

G-13. Forced Condition Summary Data of Perceptual Dependence--Question 1 243

G-14. Forced Condition Summary Data of Perceptual Dependence--Question 2 244

G-15. Forced Condition Summary Data of Perceived Power--Question 1 245

G-16. Forced Condition Summary Data of Perceived Power--Question 2 246

G-17. Forced Condition Summary Data of Perceived Power--Question 3 247

G-18. Forced Condition Summary Data of Perceived Power--Question 4 248

G-19. Forced Condition Summary Data of Perceived Conflict--Question 1 249

G-20. Forced Condition Summary Data of Perceived Conflict--Question 2 250

G-21. Forced Condition Summary Data of Perceived Conflict--Question 3 251

G-22. Forced Condition Summary Data of Perceived Conflict--Question 4 252

LIST OF FIGURES

FIGURE		PAGE
1.	Dependence Research Framework.	17
2.	Model for Structuring Channel Power Research	30
3.	Conflict Model for Structuring the Research.	49
4.	The Dynamic Process of a Conflict Episode in Dyadic Interorganizational Relations.	67
5.	Channel Setting Alternatives	87
6.	Parasimulation Industry Structure.	94
7.	Manufacturer's Dependence Measurement.	103
8.	Retailer's Dependence Measurement.	109
9.	Percentage of Demand Satisfied per Period.	136

CHAPTER I

INTRODUCTION AND HISTORY OF THE PROBLEM

History of the Problem

Marketing Channels Defined

This research effort concerns marketing channels. Marketing channels can be defined as:

> the set of institutions and agencies, exclusive of ultimate consumers or end users, that is responsible for making goods and services available for consumption. (Stern and El-Ansary, 1977, p. xi)

The institutions and agencies which make up the marketing channel are of two types. The first type is composed of those organizations which are directly involved in the process, such as manufacturers, wholesalers, and retailers. The second group consists of organizations which facilitate the flow of goods and services, such as banks, insurance companies, transportation firms, and advertising agencies. The task of these institutions and agencies is making available the right goods (form utility), at the appropriate places (place utility), at the right times (time utility), at the appropriate prices (possession utility) to final consumers to satisfy their consumption desires.

Purpose of the Chapter

The purpose of this chapter is to introduce, discuss, and build support for this research study. This will be accomplished by: (1) discussing the importance of marketing channels as an area of inquiry, (2) identifying a new approach to studying marketing channels, (3) discussing some gaps in the present knowledge of marketing channels, (4)

proposing a study that attempts to fill some of those knowledge gaps, and (5) presenting a general outline of the study.

Importance of Marketing Channels

Marketing channels are important for several reasons. From the standpoint of costs that occur from the point of origination to final consumption, channels of distribution are important. In 1972, it was estimated that $750 billion in cost was attributed to distribution in the United States, the Soviet Union, Japan, and the European Economic Community (Mallen, 1975, p. 456).

The marketing channel is also an important area of study because of its crucial position in providing the standard of living of the consumers in an economy. Marketing channels which fail to operate or operate inefficiently provide a standard of living which is lower than that which the consuming public should have received.

A better understanding of the nature and operation of marketing channels could ultimately lead to more efficiency in both the costs of distribution and in the level of the standard of living that is delivered. This efficiency could be gained through better channel design and management.

Recognition of the importance of marketing channels as an area of inquiry is not new. In fact, many of the original concepts that made up "marketing" were directly linked to the study of the distribution of agricultural products. Often early studies of marketing practice in the United States were referred to as distribution studies (Bartels, 1965, p. 48).

Approaches to the Study of Channels

The aggregate marketing process (macromarketing) views the marketing process in its place in society. In other words, how marketing relates to the needs and goals of society as it functions in the total economic system of a society. With the macroanalysis of marketing as its task, the approaches used for that study are appropriate approaches to studying marketing channels, because the essence of macromarketing and marketing channels study deals with understanding the tasks necessary to make available want satisfying units. Three conventional approaches to analyzing the aggregate marketing process include the commodity, institutional, and functional approaches.

Commodity. This approach became popular around the turn of the century and was probably the first unified approach to the study of marketing (Walters and Robin, 1978, p. 101). According to Beckman and Davidson, the commodity approach is:

> the study of individual commodities, giving attention to sources and conditions of supply, nature, and extent of demand, channels of distribution commonly used, functions performed by various marketing agencies, special features peculiar to the marketing of the commodity, and so on. (1967, p. 21)

Institutional. The institutional approach's period of popularity was from about 1910 to 1940 (Walters and Robin, 1978, p. 181). It is defined as follows:

> Each institutional segment of the marketing mechanism may be described and analyzed. For example, the retailing system is dissected into its component parts and each type of retail institution is analyzed in terms of importance, functions performed, cost of operation, competitive conditions, trends, economic positions, etc. (Beckman and Davidson, 1967, p. 22)

Functional. Finally, the functional approach to the aggregate study of the marketing process began in the 1940s (Walters and Robin, 1978, p. 269) and has had a tremendous effect on the development of marketing thought. In their classic introductory text, which adopted this viewpoint, Beckman and Davidson define functionalism as:

> A physiological treatment . . . . The process is broken down into economic functions or services, such as buying, selling, and transportation. Each function is then analyzed so that its nature, need, and importance may be determined . . . . (1967, p. 22)

Systems Approach

A newer approach to the study of the marketing process is the systems approach. The foundations of the approach were laid by Alderson in the 1950s. Alderson called his method of study "functionalism." "Functionalism" was defined as:

> that approach to science which begins by identifying some system of action, and then tries to determine how and why it works as it does. Functionalism stresses the whole system and undertakes to interpret the parts in terms of how they serve the system. (1957, p. 16)

The commitment to a systems approach was a key element of Alderson's "functionalism."

Stern and Brown in supporting the systems approach argue that the use of the conventional approaches gives an incomplete body of knowledge (1969, p. 6). They contend that the conventional macroanalysis approaches concentrate on either the objects or the relationships. The commodity and institutional approaches focus on the object, such as the product within the marketing system (commodity) and the groupings of firms at each stage in the aggregate marketing process (institutional). Relationships are primarily investigated by the functional approach in its study of "flows" throughout the society.

The systems approach, however, looks simultaneously at both the objects and the relationships (Stern and Brown, 1969, p. 7). This approach forces the analyst to consider the objects, their interactions, and the effects of these interactions in a dynamic environment.

The idea of a systems approach to the study of marketing channels is not new. In the 1950s, Alderson and Ridgeway used a systems orientation in analyzing distribution channels. Alderson (1978) in discussing the factors which governed the development of marketing channels concludes that:

> . . . the analysis of factors affecting marketing channels rests on the conception of a system of action of which the individual firms are elements. (p. 22)

Then, to Alderson, success in analyzing marketing channels depended on the conceptualization of the channel as a system. Without this orientation, significant progress was not possible.

Ridgeway (1957) writing about manufacturer-dealer relations in the automobile, farm implement, and gasoline industries stated:

> Together the manufacturer with his suppliers and/or dealers comprise a system in which the manufacturer may be designated as the primary organization and the dealers and suppliers designated as secondary organizations. (p. 466)

Thus, using the systems approach as taken by Alderson and Ridgeway will give the analyst the advantage of studying the marketing channel from a more complete perspective. The conventional approaches cannot provide this advantage.

Social Systems Approach to Marketing Channels

Early treatments of marketing channels as systems tended to view those systems as economic in nature. Stern and Brown (1969, p. 13)

argue that an economic viewpoint leads to concentration on economic variables. Citing Parsons and Smelser (1956), they contend that:

> When studied as an economic system, the channel is simultaneously studied as a social system, the former a subset of the latter. The basic variables are social. (p. 13)

Why not approach the study of channels from the more inclusive standpoint (social) than from the more limited view (economic)?

Therefore, a more meaningful approach would be a social systems approach to marketing channels. By approaching the channels' context from the larger social context, more meaningful inquiry is possible. The constraints imposed by economic assumptions leave much channel behavior unexplained. A strictly economic approach cannot explain why a retailer might seek multiple sources of supply and thus give up possible economies of scale in transportation and volume discounts. The social systems explanation could center on the desire of the retailer to not become dependent on any one supplier.

Therefore, the social systems approach has been adopted in an attempt to gain a greater understanding of channel behavior. McCammon and Little (1965) in their comprehensive review of channel literature offer support for this contention when they call for an eclectic approach--an integration of concepts from a variety of disciplines, in order to understand this elaborate economic, political, and social system (p. 322).

Finally, considering the social aspects of marketing channel behavior is logical in light of the nature of the social and psychological approach taken in analyzing consumers. If this social and psychological approach is appropriate for studying the link between the

channel and the consumer, would the approach also not be appropriate for studying the links within the channel itself? Channel organizations and the people which make up the organizations are not purely economically motivated. They are subject to a host of pressures and influencing agents (government and competitors) as they operate in their channel system. Therefore, both consumers and channel organizations need to be studied from a broad theoretical base.

Social System Variables

Channel analysts using the social systems approach have concentrated their efforts on two phenomena--power and conflict. Power and conflict are the key variables in analyzing marketing channels. As the channel operates and those institutions and agencies make goods and services available, some of these firms will attempt to dominate the others and achieve greater control over their environment and thus reduce risk. Marketing scholars have noted the central place power and control must take in an analysis of marketing channels. Revzan (1961, pp. 143-150) contends that it is a principle variable in any analysis of marketing channels. Balderston (1958, pp. 134-145) notes the central place that an understanding of power alignments has in the development of a theory of marketing channels. McCammon and Little (1965, pp. 343-344) contend that power and conflict are two of the central characteristics of marketing channels when viewed as a sociopolitical system.

Power in the marketing channel has generally been defined as the ability of one organization to control the decision variables of another firm (El-Ansary and Stern, 1972, p. 47). The majority of power research has focused on the sources of power (El-Ansary and Stern, 1972; Etgar, 1976, 1977).

Conflict in marketing channels has been viewed as existing when "two or more components of any given system of action become objects of each other's frustration" (Stern and Gorman, 1969, p. 156). This concept of conflict is commonly seen in marketing channels, particularly when large manufacturers deal with small retailers. The large manufacturer might be aggressive and desire to add new product lines, while the more conservative small retailer would rather continue in product areas which have successful histories. The small retailer's resistance frustrates the large manufacturer's attempts to become more aggressive and thus conflict is present. Research on channel conflict has been primarily conceptual, with emphasis on identifying the causes and effects of conflict. The small amount of empirical research attempted has shown an equal emphasis between the causes (Shuptrine and Foster, 1976) and effects of conflict (Lusch, 1976).

Lack of significant effort and results with these two concepts is not surprising. In general, the level of channel research development is low. The relative newness of the social systems approach and the popularity of other areas of research in marketing (consumer behavior, for example) have been chiefly responsible.

Dependence

In viewing power and conflict as social variables in the channel system, one concept has been offered as a key to understanding both. In constructing a sociological theory of conflict, Emerson (1962) singles out the concept of dependence as the key to understanding power. One party (A) can have power over another (B) only to the extent that B is dependent on A. Without the need of B for something that A

possesses, A cannot have power over B. The greater the need of B for what A possesses, the greater B's dependence on A and, thus, the greater A's power over B.

Schmidt and Kochan (1972) in developing a paradigm of conflict cite dependence as a necessary condition for conflict. The greater the level of dependence, the greater the potential for conflict. This same assertion is made by several other organizational researchers (Assael, 1968; Dutton and Walton, 1966; March and Simon, 1958).

Thus, an understanding of the development and nature of dependence could be used in increasing the level of knowledge about power and conflict. Also, the dependence concept provides a critical link between power and conflict. Pursuit of this concept in a marketing channels environment could increase the level of understanding about channel power and channel conflict.

Dependence in the Marketing Channels Literature

Only two studies (El-Ansary and Stern, 1972; Etgar, 1978) have attempted to empirically measure dependence and its effect on power in the marketing channel. Most studies totally neglect the possible mediating effects of different levels of dependence on their measures of power. This is particularly true when the sources of power and power are studied.

The typical treatment in the conflict literature is to simply assume that dependence is present (Shuptrine and Foster, 1976) without attempting to determine the level of dependence and its effect on conflict.

Therefore, in the channels literature, dependence has received only passing attention. When it has been considered, the attempts at conceptualization and measurement have been very simplistic.

Proposed Study

This research effort will attempt to take a theoretical model of interorganizational dependence and translate each component of the model into its measurable and observable counterparts. The model chosen was developed by Cadotte and Stern (1979). This model has a strong theoretical base and sufficient definitional development to allow an attempt at operationalization.

In addition to operationalizing the Cadotte and Stern model of dependence, this research will attempt to empirically assess the effects of differing levels of dependence on power and conflict in marketing channels.

Operationalization and assessment will take place in a laboratory setting, selected because of the greater level of researcher control than is possible in a real channel setting. Given the present state of channel conceptual development, the task of measuring dependence in the real world would be next to impossible.

Importance of the Study

Operationalizing and testing the concept of dependence in marketing channels is important because of its potential contribution to the development of a theory of channel relations. An understanding of the development and nature of dependence is important in itself due

to the current low level of treatment in the channel literature. Moreover, the understanding of the effect of differing levels of dependence on channel relationships is necessary to the study of power and conflict. Failure to take into account the effects of dependence on power and conflict in the channel can only bring more confusion to this already complex area of study.

Second, the methodology used in this study could be used by other channel researchers. More specifically, the laboratory setting developed for this study allows for the study of complex variables in a setting where the variables and interrelationships can be more easily controlled. This is particularly necessary when the low level of conceptualization and the limited empirical base in the marketing channels area are considered.

Finally, the study is an important step toward building an empirical base for the development of channel management strategies. For example, if dependence is the major determinant of the power of an organization in the channel, an understanding of how it could be increased would be an important tool for a channels manager. Increasing the dependence of another organization on his organization would increase the power of the channel manager's firm over the other firm.

General Research Plan

This research study is divided into five parts. Chapter II will review the literature underlying three major channel concepts: (1) dependence, (2) power, and (3) conflict. The literature of each concept will be reviewed, summarized, and conclusions will be drawn.

Future research avenues for each concept will also be presented. Chapter III will discuss research objectives, variables, and the research setting. Chapter IV examines variable measurement and presents the research hypotheses and methodology. Chapter V will deal with data analysis and presentation of test results. Finally, Chapter VI will discuss the results and draw conclusions from these results. Possible future directions for distribution channel research will be presented.

CHAPTER II

DISTRIBUTION CHANNEL RESEARCH FOUNDATIONS

Introduction

This chapter examines the research foundations for dependence, power, and conflict in distribution channels. In presenting and discussing these foundations, the literature was considered as it was typically viewed, isolating each variable with little or no regard for their interrelationships. Next is presented a promising approach for integrating the concepts of dependence, power, and conflict in distribution channels. Finally, using the results of both the isolated and integrated approaches, future directions for potentially fruitful channel research efforts are identified.

Interorganizational Dependence

This section presents the research foundations of interorganizational dependence by: (1) exploring the basic theoretical background, (2) presenting a general model to structure the literature, (3) presenting the literature composing the foundation of the concept of dependence, and (4) summarizing and critiquing the literature base. A similar approach will be used in each of the subsequent sections.

Theoretical Background

Emerson's (1962) attempt to develop a simple theory of power in social relations provided the theoretical foundation for interorganizational dependence. Emerson focused on the characteristics of the

relationship rather than any particular aspect of persons or groups in the social relationship, stating that:

> Personal traits, skills, or possessions which might be relevant to power in one relation are infinitely variable across the set of possible relations, and hence have no place in a general theory. (p. 32)

Dependence the key to power. In Emerson's theory, the key to the power of one actor over another was in the second actor's dependence on the first. Two variables composed the dependence concept, and their directional relationship was specified by the following:

> Dependence (D_{ab}). The dependence of actor A upon actor B is (1) directly proportional to A's motivational investment in goals mediated by B and (2) inversely proportional to the availability of those goals to A outside of the A-B relation. (p. 32)

Goals referred to consciously sought gratifications and rewards unconsciously obtained. Availability referred specifically to other goal satisfying social relations. For a pair of actors, then, the relationship between power and dependence is a pair of equations

$$P_{ab} = D_{ba}$$

$$P_{ba} = D_{ab}$$

Changing dependence to change power. Emerson continued his theory by noting the case of unbalanced (unequal power) social relations and the effect of dependence on the relationship. Due to their natures, these relations were inherently unstable because they encouraged the use of power which, in turn, could have led to the use of what Emerson labeled a balancing operation.

Balancing operations attempted to restore balance to the relationship by changing the variables which defined the power--dependence relation. Four types of balancing operations were specified (with A dominant): (1) B reduced his motivational investment in goals mediated by A, (2) B cultivated sources for gratification of goals, (3) A increased his motivational investment in goals mediated by B--done by B giving A more status recognition (ego gratification), and (4) A was denied alternative sources for achieving those goals--by B developing a coalition with another actor or group of actors and then denying A goal gratification.

All four of these balancing types sought to wrestle control from A and bring the relationship to a balanced position by decreasing B's dependence on A (operations 1 and 2) or increasing A's dependence on B (operations 3 and 4). Also, within the decreasing of B's dependence on A and the increasing of A's dependence on B classes, each variable (motivational investment and availability of alternative sources) of the dependence definition was effected.

Thus, Emerson proposed that power was a function of dependence and the dependence was a function of motivational investment in goals mediated by the actor and the availability of alternative goal satisfying relations. Emerson also discussed methods for balancing unequal power-dependence relationships.

Thompson (1967) felt Emerson's concept was appropriate for interorganizational relations and used it as a base for his discussions of dependence and power.

Structuring the Research

Mindlin and Aldrich (1975, p. 390) suggested two important aspects of the literature: (1) the level of analysis taken--the groupings among which dependence exists and (2) the context of the inter-organizational behavior. Using these two aspects, a framework for structuring the dependence research was developed (Figure 1). Three levels of analysis were present in the literature (between a pair of organizations, between a focal organization and its organization set, and between all organizations in a network of organizations). As will be demonstrated, the social services and business contexts comprised the bulk of the areas in the dependence research literature.

Cell one: Pair wise--social service. This cell dealt with dependency between pairs of organizations in a social services context. No literature was found because the social services context normally lended itself to concern about an organization and its dependency upon the organizations in that area which delivered similar services and provided inputs (funds, clients, etc.). In other words, social service organizations rarely find themselves in dyadic relationships due to the multiplicity of relationships with other organizations.

Cell two: Pair wise--business. Cell two continued a pair wise level of analysis but in the business context. Four studies were relevant. In developing a general model for understanding channel member behavior, Robicheaux and El-Ansary (1976) hypothesized that dependence between two channel members was an inverse function of the number of available alternatives to the channel relation and a direct

		Context	
		Social Services	Business
LEVEL OF ANALYSIS	Between pairs of organizations	1 (No literature was identified)	2 Stern, Sternthal, & Craig (1973) Robicheaux & El-Ansary (1976)* El-Ansary & Stern (1972)** Lusch (1976)
	Between a focal organization and its organization set	3 Litwak & Hylton (1962) Aldrich (1976) Levine & White (1960) Jacobs (1974)* Aiken & Hage (1968)** Osborn & Hunt (1974)**	4 (No literature was identified)
	Between all organizations in a network of organizations	5 Pennings (1975)**	6 Phillips (1960)

Figure 1. Dependence research framework.

*Discusses measurement.

**Actually measures.

function of the motivational investment in goals mediated by other channel members and the cost of the available alternatives (p. 19). To measure these components, the authors offered four possibilities: (1) using executives' perceptions of alternative sources and costs, (2) using executives' perceptions of the importance of the other firms in their firm's success, (3) using executives' perceptions of another firm's contribution to profit, and (4) the percentage of one firm's business with the other channel member. They called for but offered no empirical attempts to measure dependency.

In a laboratory study to test conflict management strategies, Stern, Sternthal, and Craig (1973) constructed the situation so that dependency was assumed to be present. This was done by making one organization a manufacturer of microscalpels and the other the sole hospital supply wholesaler in a region (p. 171). No attempt was made to measure dependency or to gauge its effect on conflict or the conflict management strategies tested.

El-Ansary and Stern (1972) in an attempt to measure power in a field setting (heating and cooling equipment suppliers) conceptualized dependence as a basic determinant of power (following Emerson). Dependency was considered to be a function of:

> (1) the percentage of a channel member's business which he contracts with another member and the size of the contribution which the business makes to his profits, (2) the commitment of a channel member to another member in terms of the relative importance of the latter's marketing policies to him, and (3) the difficulty in effort and cost faced by a channel member in attempting to replace another member as a source of supply or as a customer. (p. 49)

A dependence score was obtained by summing the three factors as measured on 5-point Likert scales.

Hypotheses tested in respect to dependency were:

II_a There is a significant negative correlation between self-perceived power and attributed dependence [and]
II_b There is a significant negative correlation between attributed power and self-perceived dependence. (p. 50)

Results showed no significant correlation in either hypothesized relationship. This lack of significance was attributed to a diffusion of power within the channel selected.

Lusch (1976) in an attempt to determine the effects of channel conflict on retailer operating performance simply assumed dependence by selecting American automobile manufacturers and dealers as the inter-organizational dyad. Lusch neither measured nor tried to assess the effects of dependency on the test results.

The literature in cell two showed a diversity in recognizing and measuring the levels of dependency between two organizations. Only Robicheaux and El-Ansary (a conceptual paper) and El-Ansary and Stern (an empirical study) recognized the importance of dependence. Only El-Ansary and Stern attempted dependency measurement between two business organizations using Emerson's basic concept. However, one problem with their approach was in the summing of the questions to form an index of dependency. The summing of the scales does not represent Emerson's ratio conceptualization of dependence. However, they did attempt the first operationalization and measurement of dependence using Emerson's concept in the business context.

Cell three: Organization set--social services. The third cell of the literature framework looked at dependency between a focal organization and its organization set in the social services sector.

Six studies are discussed. Litwak and Hylton (1962) studied the emergence of the community chest to determine the effects of dependency among local social service agencies. Dependence between organizations was defined as each organization having to take the others into account if it was to accomplish its goals (p. 401). The community chest was a direct development of this dependency. Litwak and Hylton, however, did not attempt to operationalize or measure dependence.

Aldrich (1976) studied the dependency between an employment service and its organization set. According to Aldrich, dependency develops because (1) external agents control resources for which no substitutes are available and (2) where abstinence from the resource is not possible (p. 233). Further, it is possible to reduce dependency only if the focal organization can give equal value for what it receives from its organization set or can deal on an equal basis with the supplier because of higher authority intervention (p. 233). These actions seemed to be what Emerson called balancing actions. Aldrich did not attempt to measure dependency but assumed its presence by the nature of the situation.

Levine and White (1960), writing about the organizations in the health system, saw dependence as necessary because of a scarce supply of resources (p. 584). Dependence as they conceptualized it was contingent upon three related factors: (1) the accessibility of an organization to necessary elements from outside sources, (2) the objectives of the organization and the functions which it performs, and (3) the degree of domain consensus between the organization and its organization set (p. 589). Levine and White placed the most emphasis,

however, on the accessibility of outside resources as the key to dependency. No operational measures were developed.

Jacobs (1974) writing about the organization set's ability to control a focal organization returns to Emerson's basic conceptualization of dependence. The availability of goals outside the A-B relationship was operationalized by the number of alternative suppliers of a particular entity (p. 50). With only one supplier available, the focal organization is highly dependent, and the supplier (the organization set) is relatively more powerful. Mindlin and Aldrich (1975) criticized this operationalization because it did not contain an evaluation of the relative importance of each supplier to the focal organization. Jacobs modified the other component of Emerson's conceptualization--A's motivational investment in goals mediated by B--by looking at the essentiality of the good or service to the organization (p. 50). It was further reported that availability and essentiality were interactive. If one is low, then the dependency is low (p. 51). Dependency is then determined as a multiplicative function of availability and essentiality (p. 52). Jacobs also presented a methodology for obtaining these measures. He suggested that essentiality measures be obtained from averaging the perceptions of key officers obtained from a 4-point Likert scale (p. 52). When this was done, an index of dependency could be developed by multiplying one over the number of competitive suppliers times the average essentiality score (p. 53). Jacobs, however, did not provide any empirical test of his operationalization.

Aiken and Hage (1968) conceptualized dependency between a social services organization and its organization set (the other social service

agencies in a city) as the number of joint programs that the focal organization had with the other organizations (p. 912). The more joint programs, the greater the dependency, and the fewer the joint programs, the less the dependency. Aiken and Hage were successful in correlating this dependency measure with a host of organizational characteristics.

Organizational effectiveness and its relationship to the environment were studied by Osborn and Hunt (1974). The key determinants of the environment were conceptualized to be the task environment (organization set), interorganizational relationships, and environmental risk. To measure the dependency of a social service organization on its task environment, a 9-point Likert scale was used in asking the chief executive the following: "What percent of the time do the (task environment) organizations directly restrict the activities of your unit" (p. 238)? Significant Kendall rank correlations were found between the measures of task environment dependency and organizational effectiveness (p. 239).

In conclusion, these studies showed a cross section of the attitudes researchers had taken toward dependency as a variable in interorganizational relations. Some studies assumed dependency was due to the situations in which the organizations under study found themselves, while other researchers offered conceptual and operational definitions of dependence. Finally, others came to grips with the importance of dependency and attempted to measure it and its effects.

Cell four: Organization set--business. Cell four looked at business organizations and their dependency on their organization sets. No literature was found apparently because business researchers (mainly

marketing channel researchers) are devoting the bulk of their time trying to conceptualize and develop measures for interorganizational relations at the dyadic level before attempting the more complicated organization--organization set level.

Cell five: Network of organizations--social services. Cell five contained those studies which viewed dependency of all social service organizations in a network of organizations. Only one research effort was discovered for this cell. Pennings (1975) as reported in Mindlin and Aldrich (1975, p. 390) has attempted to operationalize dependency in a network of organizations. He used a technique similar to the input-output matrix method developed by regional economists.

Cell six: Network of organizations--business. The final cell of the dependency literature model concerned those studies focusing on dependency among a network of business organizations. Phillips (1960) represented the only study in this cell. Phillips looked at the dependency between firms in oligopolistic industries. He suggested using concentration ratios in order to develop some measure of dependence between these organizations but did not develop the idea to any degree. The article focused more on the actions of the individual firms and their interrelationships.

Interorganizational Dependence Research Summary

Research effort. Most of the research on dependency in the social services sector has been concentrated in the organization--organization set level of analysis (cell three). This is due to the

nature of operations of the social services sector. Social service organizations must be concerned with the organization set because they seek and refer clients (patients) from and to many other social service organizations. Another important aspect of this sector was the method of support (funding) utilized by social service organizations. Social service organizations draw and give support to many varied organizations in and out of the social service sector. Thus, the dependence of a social service organization on its organization set is extremely important.

Most business sector literature on dependence was at the pair wise level of analysis (cell two). This was because most of the literature has been produced by marketing channel researchers. From the marketing channel perspective, most emphasis was given to that organization in the channel which was directly above or below the focal organization. This myopic view was taken chiefly because most business organizations believe that direct relationships have the most impact on their operations. Another possible reason for the concentration in cell two is that channel researchers have tried to tackle the least complicated level of dependency relationships before moving to the higher levels of analysis.

Little literature in either sector was discovered at the organization network level of analysis (cells five and six). This was probably due to the complexity of this level of analysis and the realtively low sophistication of conceptualization and measurement methodologies of dependence.

Looking at research effort from an overall standpoint, the bulk of interorganizational research on dependency (and relations in general)

was in the social services sector. Two main reasons for this are: (1) The development of interorganizational research had its roots in organizational sociology (Hall and Clark, 1974, p. 46) and (2) the majority of funding came from the federal government in its quest for proof of "relevance" in providing funds for academic researchers (Hall and Clark, 1974, p. 46) and trying to promote coordination of social service organizations (Zeity, 1974, p. 131).

Measurement. Of the 12 studies reviewed on interorganizational dependence, six did not consider measurement. Most of these studies simply assumed dependence was present without any regard for its level of intensity and that level's effect on their research. No trend as the context of these studies was evident. The six studies that considered the need for measurement proposed two basic methods of measurement. Four (Robicheaux and El-Ansary, El-Ansary and Stern, Jacobs, and Osborn and Hunt) called for perceptual measures of dependence obtained from key organization members. The remaining authors (Aiken and Hage and Pennings) advocated objective methods of measurement.

Evaluating these six studies (which consider the effects of dependence) with respect to their theoretical foundations showed that only three (Robicheaux and El-Ansary, El-Ansary and Stern, and Jacobs) used Emerson's base as a means of developing their measurement approaches. The others did not provide theoretical backgrounds for their measurement techniques.

Finally, considering only those studies which followed Emerson's theoretical base and actually attempted to measure interorganizational dependence, only El-Ansary and Stern's field study of the heating and

cooling equipment distribution channel qualified. The results of this study were inconclusive in assessing dependence and its effect on power. In this researcher's telephone conversation with one of the authors, he commented that the inconclusiveness could have been due to the construction of the 5-point Likert questions used to gather the data.

Clearly, the research foundation for the concept of dependence was weak. Although Emerson's theoretical formulation provided a springboard for more rigorous research efforts, most interorganizational researchers had failed to either consider the effects of dependence or when considered, had failed to use Emerson's background work to develop useful methodologies and hypotheses.

Future Research Directions

Interorganizational research needs to take into account the concept of dependence. Many researchers simply assumed that it was present in order to continue on with their particular study. Yet their results are open to question when they overlook the mediating effects of the dependence variable. Not only should future research recognize the importance of dependence in interorganization relations, but also it should make an attempt to measure the levels of dependence present between or among the organizations. Attempts at better measurement (perceptual or objective) must be made. Finally, future interorganizational research needs to empirically determine the specific effects that differing levels of dependence have on interorganizational relationships (coordination, conflict, power, and effectiveness, for example).

Channel Power Research

The conceptual groundwork for all other channel power research was laid by Beier and Stern (1969). That article will be reviewed first, and then from that article a method of structuring the research will be developed. Finally, the research will be reviewed, summarized, and critiqued.

Beier and Stern delineate the basic concepts and interrelationships on which most channel power research is constructed. They suggested two definitions of power which they felt were advantageous in the channel environment. The first definition by Cartwright (1959) stated that:

> O's power over P is defined as the net increase in the probability of P enacting a behavior after O has made an intervention, compared to the probability of P's enacting the behavior in the absence of O's intervention. (p. 11)

They pointed out three implications from Cartwright's definition: (1) power must be stated as power over something else, not just a generalized concept; (2) no distinction was made as to the means of getting another actor to do what he ordinarily would not do; and (3) it did not require each application of power by O to result in overt actions by P in order to be classified as successful (p. 93). The second definition was Emerson's power-dependence concept discussed in the previous section.

Beier and Stern discussed five bases of power: (1) rewards, (2) coercion, (3) expertness, (4) legitimacy, and (5) referent which were first presented by French and Raven (1959). Reward power is a function of one party's perception that another can mediate rewards to

him. Citing Cartwright again, they suggested that the use of rewards tended to increase reward power through a process of learning by the reward recipient. The recipient's belief in the probability increased and thus increased that base of power and dependence also (p. 95). Coercive power is similar to reward power and is often difficult to discern from reward power. This is because one of the common coercive behaviors is the withdrawing by O of a reward (wholesaler's help in taking inventory, for example) previously given to P. Is this power base really coercive or is it based on the ability of O to reward P? Drawing from Raven (1965, p. 156), they suggest that P's perception was critical to determining whether a base was a reward or punishment.

Expert power is based on P's perception that O has some special ability or knowledge that P finds useful. In marketing channels, special abilities could be merchandising or product development, and knowledge would probably be some type of important market information. Legitimate power originates from values in P which dictate that O has a legitimate right to influence P and that P is obligated to accept this influence (franchisor's power over franchisees, for example). Finally, referent power and identification is linked in a cause and effect relation. According to French and Raven, the referent power of O over P is based in the identification of P with O. Identification means a feeling of oneness with O by P.

In their discussion of the weight (intensity) of power, the authors presented arguments from Cartwright and March and concluded that covert as well as overt behavior should be considered. The reasoning behind this argument was power attempts may be countered by resistance

forces within the control of the focal firm. Although the first power attempt may not have produced any overt change, repeated attempts may have had an accumulating effect and thus somewhere along the time produced an overt behavior. Using only an overt measure would have erroneously suggested that all previous power attempts were unsuccessful, while the last one was.

Finally, Beier and Stern considered balanced and asymmetrical power relationships. Balanced power relationships represent ones where no party has clear dominance (p. 108); that is, the relative levels are equal. Asymmetrical relations are those where one member does have clear dominance, and the other parties attempt to reduce that dominance (p. 109). They cited Emerson's four methods for attempting to balance a power relationship which were discussed earlier in the chapter.

Structuring the Research

Building on the conceptual work by Beier and Stern, a basis for reviewing and analyzing other pertinent channel power research was developed and is shown in Figure 2. This model notes three important components with regard to power in the channel of distribution. In order for power to develop, two requirements are necessary. Following Emerson, before A can have power over B, it is necessary that organization B be dependent on organization A. If dependency does not exist, B can simply seek another relationship if A attempts to exercise some degree of control over B.

Following French and Raven, some base of power must exist, given some amount of dependence of B on A, before A can exercise any degree of control over B. According to the literature, once some level of

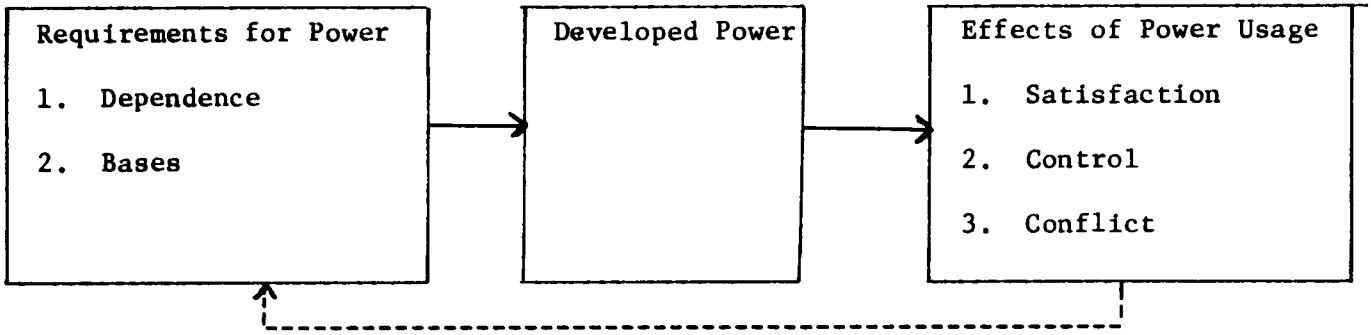


Figure 2. Model for structuring channel power research.

dependence and some base of power exist, A can have power over B. Thus, developed power--the ability to change the others' decisions--comes into existence. Power, however, is a concept of action. In other words, the power that is developed is only of value when it is used and thus affects the relationship between A and B.

Some possible effects of the use of power are satisfaction, control, and conflict. Satisfaction to the power user and control of the other are probably goals. The development of conflict may or may not be a goal of the power user depending on the level of conflict and the effects of that conflict level. Use of this model as a research integrating tool allowed the focus to be placed on research which empirically tested the relationships between the model components. Relationships discussed include those between (1) requirements and developed power, (2) developed power and effects of power usage, and (3) requirements and effects of power usage.

Requirements and developed power. The requirements and developed power section reviews research which attempted to measure and determine the nature of the relationship between the requirements for power and the power developed.

The first attempt to equate the requirements for power was that of El-Ansary and Stern (1972). In their study, power was operationally defined as the ability to control the decision variables in the marketing strategy of another member in a given channel at a different level of distribution (p. 47). Power was hypothesized to be a function of dependence, following Emerson, and sources of power, following French and Raven.

Data were collected by a structured questionnaire from heating and cooling equipment supply channel members in an Ohio county. Power was measured as the extent of control that respondents perceived the other organization had over marketing strategy variables. A power score was developed by summing the scores on each variable. Power was also measured by one global question concerning the significance of the influence that was perceived by the respondent.

Dependency was a function of (1) the percentage of a channel member's business which he contracted with another member and the size of the contribution which that business made, (2) the commitment of a channel member to another member in terms of the relative importance of the latter's marketing policies to him, and (3) the difficulty in effort and cost faced by a channel member in attempting to replace another member as a source of supply or as a customer (p. 49). A dependence score was obtained by summing the scores of the various dependence issues. Another global measure of dependency was taken using one item focusing on the importance that the respondent felt the other organization's relationship had to him.

Sources of power were measured by 18 items including customer preference, completeness of line, sharing advertising expenses, etc. Again, a perceptual sources of power score was developed by summing the scores of the various sources of channel power.

El-Ansary and Stern hypothesized that (1) self-perceived power was positively correlated with attributed power, (2) the difference between the means of perceptions and attributions was not significant, (3) there was a significant, negative correlation between self-perceived

power and attributed dependence, (4) there was a significant, negative correlation between attributed power and self-perceived dependence, (5) there was a significant, positive correlation between self-perceived and attributed sources of power, (6) there was a significant, positive correlation between attributed power and self-perceived sources of power, (7) there was a significant correlation between self-perceived power and attributed dependence and attributed sources of power, and (8) there was a significant correlation between attributed power and self-perceived sources of power (pp. 50-51).

For hypotheses one, three, four, five, and six, simple correlation was used, while in seven and eight multiple correlation was used to test the relationship. Hypothesis two was tested using the t test. None of the test statistics showed significant results. This lack of significance was attributed to a lack of a locus of power in the channel (p. 51).

The second empirical research study concerning the requirements and developed power was conducted by Hunt and Nevin (1974). They attempted to empirically assess the relationship between the sources of power and power in a channel which had a well developed locus of control. The fast food franchise industry was chosen as an appropriate channel setting. Sources of power were divided into groups--coercive and noncoercive. The noncoercive group was composed of reward, expert, legitimate, and referent bases. This dichotomy was made because coercive power sources, which involved potential punishment, would be more easily differentiated empirically, but the other bases would not be (p. 187).

Citing March (1955) and Raven (1965), Hunt and Nevin stated that:

> Power does not refer to the objective ability of one individual or group to control or influence the behavior of another, but rather to the potential ability of the controlling or influencing agent as perceived by the controlee or influencee. (p. 188)

Power was considered to be the perception of the franchisee about the ability of the franchisor to control the decision variables of the franchisee. Franchisee control variables were seven items including determining hours of operation, setting retail prices for products and services, and menu control. A 6-point rating scale ("I have almost complete responsibility for this" to "My franchisor has almost complete responsibility for this") was used for each item, and an index of power was developed by calculating the response mean over the seven areas (p. 188).

Noncoercive sources of power were measured by 14 types of assistances designed to influence franchisee behavior by the franchisor. According to the authors, to the extent that the assistances are perceived to be of good quality, they establish reward, expert, legitimate, and referent power bases. The rating scale consisted of 5 points ("Poor Quality" to "Excellent Quality").

Coercive sources of power were measured by six items: (1) control of building, (2) control of land, (3) threaten to revoke franchise, (4) need for legislation, (5) right to sell franchise, and (6) fairness of agreement (p. 189). Items 4, 5, and 6 were measured on perceptual scales, while items 1, 2, and 3 were measured on a dummy variable basis.

The research hypothesis of interest to this section of the review was that franchisors would rely primarily on coercive sources

rather than noncoercive sources to achieve power over their franchisees (p. 187). This hypothesis was tested by Multiple Classification Analysis (MCA). Three separate MCAs were run. In all three, the independent variable varied from noncoercive sources to coercive sources and then both noncoercive and coercive sources of power.

When noncoercive sources were the independent variables, results showed that noncoercive sources accounted for only 17.1% of the variance in the power index (p. 190). Eight of the fourteen items were significant. With coercive sources as the independent variables, the $\underline{R}^2$ was .344. Four of the six items (land, fairness, building, and right to sell) were significant. The third MCA run had both coercive and noncoercive sources as independent variables. The $\underline{R}^2$ increased to only .420 when the noncoercive power sources were included.

The authors concluded that:

> taken collectively, the above results suggest that franchisors, as hypothesized, primarily employ coercive sources of power to achieve power over their franchisees. (p. 190)

Etgar (1976) attempted to measure the relationship between power and the sources of power in a conventional channel as El-Ansary and Stern had done. However, for our purposes, Etgar noted one significant difference in his approach--power measures were actual (not attributed) measures of control. Citing Martin (1971), Etgar challenged the perceptual measures of power used by El-Ansary and Stern and Hunt and Nevin. According to Martin, the perceptual (reputational) approach did not differentiate between power potential and the actual exercise of power, and the approach assumed that power was possessed and recognized by all, while, in fact, it may not have been recognized except by its user (p. 256).

Using the insurance industry as his channel setting, Etgar defined power as the ability of insurers to control focal decisions and activities of their insurance agents (p. 256). Three focal items to agents were used: (1) were agents required to commit a minimum annual premium volume to their insurers, (2) were agents required to be selective enough in choosing clients to maintain a given risk mix, and (3) were agents required to consult with current insurers when considering adding additional insurers. Respondents answered yes or no to these items.

Insurers' power bases were measured using four items concerning the assistance that insurers provided agents. The four items concerned reliance on training, supportive advertising's effect on sales, fast underwriting, and fast claims handling. Perceptual measures were used for reliance on training (1--very heavy to 5--no use at all) and advertising's effect on sales (1--very important to 7--not very important), while the average number of days to provide the service was used for speed of underwriting and claims handling.

The dependency of agents on insurers was measured by developing items related directly to the insurer's capacity to mediate rewards and inversely to the availability of those rewards outside the insurer-agent relation (p. 257). Four items were chosen: (1) reliance on casualty insurance (the type sold by the company under study) as a percent of revenues, (2) the number of insurers represented by the agent, (3) the difficulty of replacing a leading insurer--perceptually rated (1--very difficult to 5--very easy), and (4) the percentage of agent's premiums from his leading insurer.

Two of Etgar's hypotheses were of interest in this section. The first stated that the power of a channel member is a function of the magnitude of his power sources. The second hypothesis stated that the power of a channel member is a function of the extent of the dependence of other channel members upon him (p. 255). Hypothesis one was tested by canonically correlating the three measures of power (criterion variable) with the four measures of power sources (predictor variables). Results of the canonical correlation showed a significant correlation coefficient of .680 and, thus, supported hypothesis one. The most cogent factors were training and speed of underwriting.

Hypothesis two was tested using the four dependence items as predictor variables. The canonical correlation coefficient of .257 was significant at .05 level, again supporting hypothesis two. The correlation's strength came from the percentage of income occurring from casualty business and the total number of insurers an agency represents (p. 260). In general, Etgar concluded that insurers' power sources were more potent in developing power than was agents' dependency.

Also of interest was Etgar's (1977) effort to determine the relationship between channel power and the channel environment. Etgar, using assorted channels (beer, liquor, gasoline, boats, cars, motorcycles, organs, and swimming pools), developed a measure of power which was composed of 12 control dimensions. These dimensions included pricing, choice of location, minimum order size, mix of units ordered, and salesmen training, among others (p. 73).

Four environmental factors were also measured: (1) product life cycle--growth of demand, (2) interchannel competition,

(3) uncertainty--stability of demand, and (4) technology--labor input measured by need for personal selling (p. 72). All measures used a 7-point semantic differential scale. Etgar stated that perceptual measures are appropriate because of their widespread use in social sciences and their previous use in studies of power and control in distribution channels.

Research hypotheses stated that supplier control would be higher when: (1) marketed product's demand was declining, (2) the degree of volatility in demand was low, (3) marketing technology required low labor input, and (4) high interchannel competition was present.

In the first stage of analysis, Etgar factor analyzed the 12 power dimensions and obtained four factors which reflected suppliers' control over dealers--strategic marketing policy making, ordering policies, relationships with suppliers, and selling policies (p. 73). Canonical correlation was used to test the hypotheses. The criterion set used as a power index was the four factors from the factor analysis. The canonical correlation coefficient .498 was significant at the .05 level. The most important factors in the criterion set were control over suppliers-dealer relationship and strategic marketing policy making (p. 74). Demand growth and demand stability were found to have the most impact in the predictor set (environmental variables). Signs of the canonical coefficients showed that hypotheses one (growing demand) and four (interchannel competition) were confirmed, while two and three were not.

The last study of interest in this section is also by Etgar (1978). Using the same data base as his 1977 study, Etgar looked at the relationship of power bases and developed power. Etgar divided power bases

into economic (reward and coercive) and noneconomic (expert, referent, and legitimate). Power of the supplier was measured by the degree of control over the dealers' marketing activities. The items used were the same 12 dimensions used in the 1977 study. Etgar measured these 12 items perceptually and noted that:

> Power is in essence a behavioral and a perceived phenomenon, channel members will comply with instructions of a channel leader only if they perceive him as capable of exerting control. (p. 56)

The 12 scale scores were summed to construct an index of power.

Sources of economic power were measured by eight variables: (1) financial assistance at the start, (2) current financial assistance, (3) retail advertising help, (4) store management assistance, (5) providing market information, (6) providing sales leads, (7) promptness of delivery, and (8) frequency of delivery. Noneconomic power sources were measured by six items: (1) selection of products, (2) training assistance, (3) rate of development of new products, (4) backup advertising, (5) level of expertise, and (6) team association. All power source measures were made on 7-point semantic differential scales and then summed to develop indices.

The research hypothesis was that economic power sources contribute more to the development of power than do the noneconomic sources (p. 55). Multiple regression analysis showed significant coefficients for both types of sources. The economic sources coefficient was positive, while the noneconomic sources coefficient was negative. The $\underline{R}^2$ was equal to .162 (p. 57). Etgar concluded that the results supported the hypothesis.

Developed power and effects. The second relationship of interest in the channel power literature framework was that between developed

power and the effects of the use of power. Only one study of interest to this relationship was discovered. Etgar (1976) looked at the relationship between power and countervailing power developed by those controlled. Power was again measured by four items concerning the assistance that insurers provided agents: (1) training, (2) advertising effectiveness, (3) fast underwriting, and (4) fast claims handling.

Countervailing power was measured by five dimensions: (1) customer loyalty to the agent, (2) size of agent's premium volume, (3) number of agencies recently acquired by an agent, (4) advertising-sales ratio for an agency--reflects the agent's ability to attract new customers, and (5) the strength of agents' associations (p. 258).

Etgar hypothesized that there was a negative relationship between the controlling channel member's power and the countervailing power available to the controlled channel member (p. 255). The relationship was tested by canonical analysis, and the relationship was supported by a significant correlation coefficient of .375 (p. 260). More specifically, agent's size and degree of customer loyalty were the most important countervailing power bases.

Requirements and effects. The last section of the power literature model focused on the direct relationship between the requirements of power and the effects of the use of power. Hunt and Nevin sought to determine the relationship between satisfaction and bases of power, in the franchise environment. The franchisee's level of satisfaction was measured by one item which asked if he had it to do over again, would he still choose the franchise? Power was again measured by the perception of franchisees on seven control variables.

Hunt and Nevin hypothesized that:

> Franchisors who rely less on coercive sources and more on noncoercive sources will have franchisees who are more satisfied with the franchise relationship. (p. 187)

Three Multiple Classification Analysis runs were used to test the hypothesis. In one run, the independent variable was the noncoercive power source. In another run, coercive power bases were the independent variables, while the final run had both coercive and noncoercive power bases as independent variables. In all runs, the dependent variable was franchisee satisfaction.

All six noncoercive sources were significant, and the noncoercive sources explained 23.4% of the variance in franchisee satisfaction. The two significant coercive sources of power were inversely related to franchisee satisfaction. The coercive power sources accounted for 20.7% of the variance in franchisee satisfaction (p. 192). When taken together, coercive and noncoercive sources of power explained 30.3% of the variance. The authors concluded that franchisee satisfaction could be increased by the use of noncoercive instead of coercive power bases (p. 192).

Lusch (1976) studied the relationship between channel conflict and the sources of power. The conflict measure used was the perception of manifest (overt behaviors) conflict. Operationally, conflict was the frequency of disagreement between automobile manufacturers and dealers on 20 issues as perceived by the dealers. Examples of the issues were parts availability, product quality, sales promotion displays, number of salesmen, and hours of operation. Scores on each item were summed to construct a conflict index.

Noncoercive sources of power were operationalized as the extent of quality perceived by dealers of assistances offered by manufacturers. The higher the quality of the assistances, the greater the development of the bases. Sixteen assistances were measured (national advertising, local advertising, executive training, bookkeeping assistance, etc.).

Coercive bases of power were operationalized as six types of punishment which manufacturers could use with dealers:

> (1) slow delivery of vehicles, (2) slow payment on warranty work, (3) unfair distribution of vehicles, (4) turndowns on warranty work, (5) threat of termination, and (6) bureaucratic red tape. (p. 383)

Lusch cited attribution theory as support for the use of perceptual measures (p. 386).

Hypotheses stated that: (1) the stronger the coercive power sources of the manufacturer, the greater the conflict, (2) the stronger the noncoercive power sources of the manufacturer, the less the conflict, and (3) coercive sources of power would explain more intra-channel conflict than noncoercive (p. 384). Multiple regression analysis was used to test all three hypotheses. Coercive sources of power were the independent variables, and the conflict index was the dependent variable.

All six coercive sources were significant in a positive direction which supported hypothesis one. The multiple correlation coefficient was .460 (p. 387). With noncoercive sources as the independent variables, only four (mechanic training, dealer incentives, product warranty, and inventory rebates) of the 16 variables were significant. All four had negative beta coefficients and thus generally supported hypothesis two. The multiple correlation coefficient was .394. The

third regression run, with both coercive and noncoercive power sources as independent variables, increased $\underline{R}^2$ to only .266. Lusch concluded that this result generally supported hypothesis three. Lusch attributed the low $\underline{R}^2$ to other variables which he was unable to control and variable measurement (p. 388).

Brown and Frazier (1978) studied the effects of power bases on conflict and satisfaction in the automobile industry. They called their bases influence strategies. Influence strategies were conceptualized to be of two general types: (1) unweighted and (2) weighted (p. 267). Unweighted influence strategies only communicated a position on a certain issue, while a weighted strategy implied or mentioned the consequences of compliance or noncompliance. Three types of weighted strategies were: (1) coercion, (2) reward, and (3) legalistic. These three types represent coercive, reward, and legitimate power bases, respectively.

Dealers' perceptions of the frequency of usage of the four types of strategies were used to measure power strategies. Conflict was measured by the perceptions of the dealers as to the frequency of disagreements over issues and the importance of the issues. These two perceptions were multiplied together for each issue and summed over all issues to form a conflict index. Satisfaction was measured perceptually with a 7-point scale anchored by "Very dissatisfied" and "Very satisfied" (p. 269).

The authors hypothesized that the use of reward, coercive, and legalistic strategies was positively related to conflict, while the use of unweighted strategies was not related. Results of the correlation

analysis showed that reward and legalistic strategies were significantly related to conflict, while coercive and unweighted strategies were not (p. 269).

Brown and Frazier also hypothesized that the use of reward, coercive, and legalistic strategies were inversely related to satisfaction, while the use of unweighted strategies was not related. Results of the correlation analysis confirmed all the hypothesized relationships (p. 270).

Power Research Summary and Conclusions

Channel researchers have generally used the foundations cited by Beier and Stern in developing their concepts of power and sources of power. Power is consistently operationalized (after Cartwright) as the level of control one organization has over another's marketing strategy variables. Sources of power studied generally conformed to French and Raven's framework.

Measurement of power bases has been overwhelmingly perceptual. Five of the six studies used perceptions. Although the sixth study (Etgar, 1976) raised several questions about the appropriateness of this type of measurement approach in that and subsequent efforts, Etgar uses perceptual measures. Two of the studies (El-Ansary and Stern and Lusch) summed the perceptual measures into indices and then used parametric statistical techniques. It would seem more appropriate to use nonparametric techniques with these indices because of their ordinal nature. The measures of developed power are also perceptual. Again, only Etgar departs from this approach. Also, some authors (El-Ansary and Stern and Hunt and Nevin) continue to summarize perceptual data and

apply parametric techniques. In measuring the effects of power usage, both satisfaction and conflict were perceptually measured. In measuring conflict, both Lusch and Brown and Frazier formed indices from perceptual data and used parametric techniques. Although Lusch used perceptions of the frequencies of disagreements over issues, he did not provide any method of weighting to issues with regard to the importance of the issue.

Tentative results of power research are: (1) three of four studies (the fourth being El-Ansary and Stern) whose instrument problems were previously mentioned found a significant relationship between the sources of power and developed power, (2) a significant, but weak, relationship between dependency and power was found by Etgar (1976), (3) environmental events effect the magnitude of developed power, (4) the use of coercive power sources produces more power for the user, and (5) the use of coercive power bases increases the perception of conflict. Although there were results dealing with the bases of power and satisfaction, the results were contradictory. Hunt and Nevin found that the use of rewards increased satisfaction, while Brown and Frazier found no relationship between the use of rewards and satisfaction.

Conclusions which can be drawn from this review of channel power research are several. First, most of the empirical research effort has concerned itself with determining the relationship between power and its sources. Two main reasons for this emphasis can be cited: (1) There is a clear and logical connection between the sources of power and power itself, and (2) the theoretical guidance and support

for the development of measures and hypothesized relationships of power (French and Raven) were readily available.

A second conclusion is that those studies which produced significant findings about relationships did not generally account for more than 20% of the variance in the realtionship. A major reason for this is measurement methodology. The authors working in the power area tend to form indices from ordinal data and then perform their statistical analyses using parametric techniques. Analysis of ordinal data would be more appropriate if done using nonparametric approaches. If stronger statistical methods are desired, then development of interval scale producing questions would seem appropriate as a first step. Further measurement weakness is seen in the one-question approach to measuring channel satisfaction. Is one question the most appropriate guage for measurement of such a complex variable? What about the reliability and validity of this type of one-question approach? Although it is true that a researcher must walk before he can run, the desire and activity necessary to learn to run must be there if running is to ever be a reality.

In addition, future research efforts should concentrate on relationships between channel power concepts other than bases and developed power. What is the effect of the level of dependence on developed power? Etgar (1976) found only a weak relationship, but Emerson has hypothesized a strong one. Why the difference? Is Etgar's methodology at fault or is Emerson's concept faulty?

What about the environment as a factor in channel power development and use? Etgar (1977) found that the environment affected the

level of power in the channel. Is there a relationship between the environment and the sources of power which may be developed? More specifically, do certain environmental conditions, such as scarcity of resources or customers, affect the level of dependence in the channel? Could this same scarcity affect the bases of power which channel member organizations develop as they attempt to control their channel?

What types of power strategies (bases) should a channel member use to control other members and still produce satisfaction with the other organization? Does the use of noncoercive strategies, as found by Hunt and Nevin, produce greater satisfaction than the use of coercive strategies, or does the use of any weighted strategy, regardless of its coercive or noncoercive nature, produce dissatisfaction, as found by Brown and Frazier? This relationship is an important question in channel management strategy development.

Intrachannel Conflict Research

Next we shall assess research concerning conflict within marketing channels. This will be done by first reviewing the theoretical background of conflict. Next, a model to structure the research will be presented. Finally, the conflict literature will be reviewed, summarized, and critiqued.

Theoretical Foundation and Structure

As with most social science concepts, conflict has a diverse and confusing amount of theoretical footings. Mack and Snyder (1957, p. 212) went so far as to call conflict a "rubber concept" that could be stretched into any shape that the writer desired. Fink (1968) in

his exhaustive review claims that advancement in social conflict as a concept has been hindered by the confusion and diversity in the empirical and theoretical approaches taken.

Faced with this confused state of conceptual development, initial conceptual articles on intrachannel conflict by Stern and Heskett (1969), Stern and Gorman (1969), and Rosenberg and Stern (1971) adopted the views of several conflict theorists. The majority of their approaches were taken from Pondy (1967). Pondy viewed conflict as a process composed of conflict antecedents, conflict, and conflict aftermath. One cycle of this process (beginning with antecedents and ending with aftermath) is called a conflict episode and could be followed by another conflict episode.

Pondy's conceptualization of conflict identifies two components, felt and manifest. Felt conflict is the affective component of conflict, while manifest conflict is the behavioral component. Although neither party engages in an overt behavior, the stress (felt conflict) perceived by either or both is produced by a conflictful situation.

Using Pondy's process approach as a foundation, a framework was developed by this researcher to structure the intrachannel conflict research (Figure 3). Its basic components are: (1) conflict antecedents--those conditions or states which must be present for the development of conflict, (2) conflict--felt and manifest, and (3) conflict aftermath--the outcomes of the conflict episode.

Three potential causes have been identified by the literature. When some level of dependence and at least one of the causes of conflict exist, conflict develops. The conflict may only be a feeling by

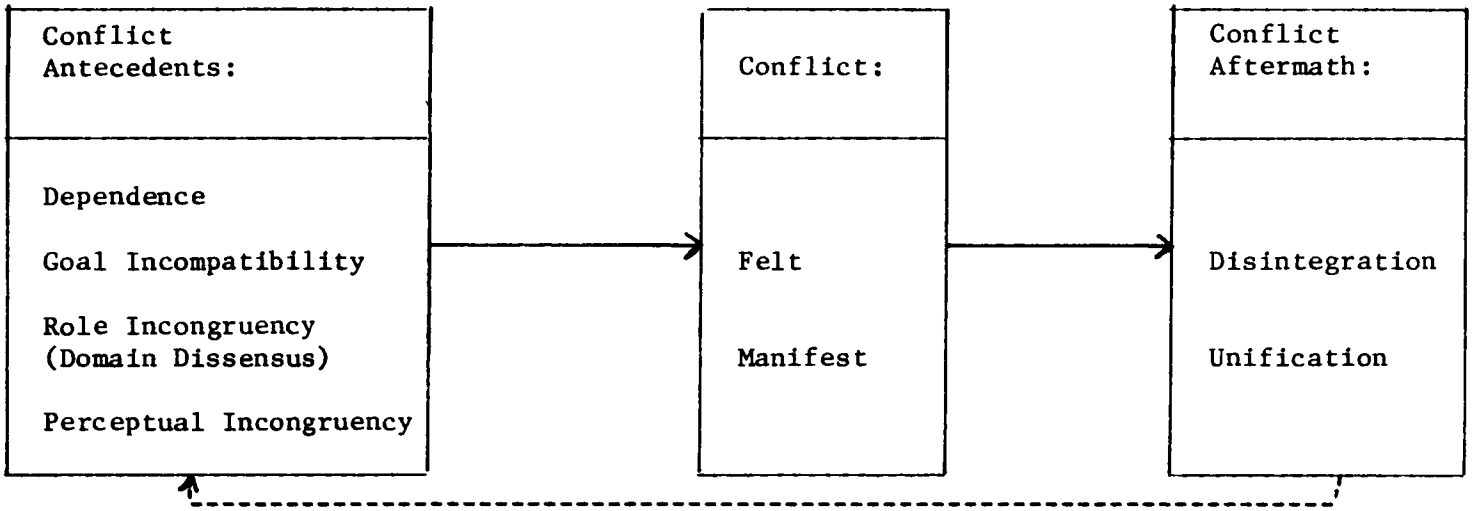


Figure 3. Conflict model for structuring the research.

one or both of the dependent organizations, or it could be actual behaviors (manifest) by one or both organizations. After the feelings or behaviors are perceived and possibly reduced or ended, the effects of the conflict are realized.

The conflict may result in a range of possible situations from disintegration to unification of the channel. Whatever the outcome, it will also have an effect on the possibilities for additional conflict episodes. At one extreme of the continuum, disintegration probably signals that the cause of the conflict was not resolved, and thus the organizations decided to terminate the relationship--become independent from each other. At the other extreme, the cause or causes have been completely resolved, and the two organizations are unified in the relationships--more dependent on each other.

Conflict antecedents. Conflict antecedents, as previously defined, refer to the necessary conditions for the development of intrachannel conflict. Three causes of intrachannel conflict and one necessary condition have been identified.

The three causes are: (1) goal incompatibility, (2) role incongruency or domain dissensus, and (3) perceptual differences of reality (Stern and Heskett, 1969, p. 293). The necessary condition for the development of channel conflict is interdependency (Assael, 1968, p. 24; Stern and Heskett, 1969, p. 291) among channel members.

Goal incompability is defined as organizations having goals such that it is perceived that goal attainment by one unit prevents others from achieving their goals under the same circumstances (Schmidt and Kochan, 1972, p. 361). Only one empirical study concerning

distribution channels was discovered. Stern, Sternthal, and Craig (1973) using a laboratory setting attempted to study conflict management strategies in the distribution channel. Manufacturing and wholesaling companies were created using students and a parasimulation technique. The manufacturing companies produced surgical equipment, and the wholesalers distributed their products in certain geographical areas. The objectives of the study were: (1) foster an organizational perception among the students in each firm, (2) induce a relative high degree of conflict, and (3) test several conflict management strategies (Stern, Sternthal, and Craig, 1973, p. 176).

Although not a major aspect of the study, the concept of goal incompatibility was tested in this laboratory study. Testing took place when the researchers created conflict and attempted to check on their development of conflict. Two levels of conflict were created by providing two different sets of profit-loss matrices to the firms. These matrices were used by the firms to develop bids which specified price and quality. In the high conflict treatment, the matrices of the manufacturer and wholesaler had a limited number of mutually profitable matrix points. In the low conflict treatment, there were twice as many mutually profitable matrix points. If the price and volume components of a bid are considered as marketing goals, then the researchers produced situations of high and low goal incompatibility in their attempts to produce intrachannel conflict.

Conflict was measured by having each student firm rate the other firm on 23 bipolar adjectives in a 7-point semantic differential scale (Stern, Sternthal, and Craig, 1973, p. 174). These bipolar adjectives

were perceptions of actual conflict behaviors. A comparison of mean scores was made between the firms in the high and low conflict treatments--those having high goal incompatibility versus those with low goal incompatibility. Results of the F test showed that 22 of the 23 means were higher for the high conflict treatment at the .10 level of significance. Thus, those firms whose interrelationships possessed high goal incompatibility had significantly higher levels of conflict than those firms whose interrelationships had lower levels of goal incompatibility.

Role incongruency and domain dissensus can be thought of as similar concepts. Thompson (1967) says that domain consensus (the opposite of dissensus) is:

> a set of expectations both for members of an organization and for others with whom they interact, about what the organization will and will not do. [It] provides, although imperfectly, an image of the organization's role in a larger system . . . . (p. 29)

Differing expectations about the role of the organization would then be domain dissensus (role incongruency).

Shuptrine and Foster (1976) provided the only empirical research on the effects of domain dissensus on conflict. Their approach was to monitor channel conflict using the perceptions of retailers. The sample included retailers who sold almost exclusively a high turnover, specialty consumer product with a value of less than $10 (p. 61). Conflict occurrence was hypothesized as possible when there were wide variations in the quality of performance on domain-related activities of interdependent organizations. This was measured by asking the retailers to rate wholesalers and manufacturers. Wholesalers were rated on 20 items dealing with five dimensions of wholesaler service. The dimensions were:

> management knowledge and integrity; pricing and discounts; service responsiveness; delivery; and sales representation. (p. 61)

Manufacturers were rated on nine items dealing with point of purchase displays. This was selected because it was the manufacturer's main attempt to secure domain in this market. Ratings were summed across all respondents on each of the 20 wholesaler items and the nine manufacturer items. The wholesalers and the suppliers of the wholesalers (manufacturers) were then ranked according to their ratings by retailers.

Conflict was then measured by comparing the rankings of each wholesaler and his supplier. Where suppliers and wholesalers showed a dispersion of rankings, conflict was present. Where suppliers and wholesalers received similar rankings, low levels of conflict were present. Results showed that two of the three wholesalers rated showed considerable discrepancy (p. 68).

Perceptions as a cause of intrachannel conflict involve participants' perceiving the same situation differently and therefore producing conflictful behaviors. No research was discovered which dealt with differing perceptions of reality as causes of intrachannel conflict.

In summary, the research evidence supporting the antecedents to intrachannel conflict is sketchy. No research was discovered which dealt with dependence (the necessary condition) or perceptions (a cause) and conflict. One study (Stern, Sternthal, and Craig, 1973) found a significant relationship between goal incompatibility (a cause) and the level of perceived conflict. Although one study (Shuptrine and Foster, 1976) looked at role incongruency (a cause), it failed to provide a measure of conflict (whether felt or manifest) with which to

associate their measure of role incongruency. The authors just assumed that their measures showed conflict.

Conflict. The second major component of the research structure framework (Figure 3, page 49) is conflict. As previously defined, conflict could be either felt (affective) or manifest (behavioral). Although the felt aspect of conflict is as real as the behavioral aspect, most channel researchers have focused, from an operational standpoint, on conflict as a behavior. These behaviors fall into two broad categories: (1) the exercise of power and (2) intraorganizational change (Stern and Gorman, 1969, p. 161).

Exercise of power. This may take the form of threats, coalitions, or symbols in the channel. According to Stern and Gorman:

> the issurance of threats, usually of an economic nature in the case of intrachannel friction, is generally a pathological response to conflict because threats tend to elicit threats, thus increasing the degree of conflict. (1969, p. 161)

This type of behavior has been noted with regard to manufacturer's threats of franchise cancellation when retailers attempt to refuse excessive inventory levels in the automobile, service station, and television industries (Assael, 1968, p. 21).

Coalitions develop as a response to threats in order for those threatened organizations to attempt to increase their power relative to the threatening organization (Stern and Gorman, 1969, p. 162). Assael (1968) and Palamountain (1955) note the development of trade associations, such as the National Automobile Dealers Association, the National Appliance and Radio-TV Dealers Association, the National Association of Retail Druggists, and the National Congress of Petroleum Retailers.

Finally,

> symbols represent values commonly shared by group members and those who potentially exert some control over the outcome of the intrasystem (intrachannel) conflict relationship. (Stern and Gorman, 1969, p. 162)

Those organizations in the conflict situation may increase the usage of symbols, such as competition by small business, in an attempt to gain support.

Intraorganizational change. This is the second possible behavior type possible in a conflict situation. It occurs when one organization decides to accommodate the other organization in the conflicting situation. Two possible intraorganizational change alternatives are possible: (1) goal change and (2) instrumental behavior change. Goals, due to the conflict situation, may be reappraised in light of the other organization's goals.

> However, goal change is generally a "last resort" and will occur infrequently. (Stern and Gorman, 1969, p. 163)

Instrumental behavior change is more likely due to its less expensive nature. Thus, organizations may act or react by changing their goals or their instrumental behaviors that lead to goal achievement.

Two empirical studies of intrachannel conflict will be reviewed with particular attention to the operationalization of the concept of conflict, the measurement of conflict, and the results.

As previously reviewed, Stern, Sternthal, and Craig (1973) studied conflict management in a laboratory setting. High conflict levels were introduced by three methods: (1) limited number of mutually profitable quantity and pricing combinations (goals), (2) knowledge that

previous groups had performed well in obtaining profits, and (3) that the other team (fictitious) was more oriented toward acquisitiveness, aggressiveness, and profit maximizing (p. 173). Conflict was conceptualized and measured as perceptions of behaviors exhibited by the other team in the bargaining situation.

Lusch (1976) attempted to determine the impact of channel conflict on operating performance. A sample of new car dealers in the United States was used as subjects. Conflict was operationally defined as the frequency of disagreement over specific issues, as perceived by the dealer (p. 8). Twenty issues were used. Examples of these issues were new vehicle inventory, number of salesmen, factory competition, promotional allowances, and vehicle availability (p. 90). By summing the dealers' perceived conflict on the 20 issues, an overall index of conflict was developed (p. 9). Operating performance was measured by return on assets and asset turnover.

With the level of conflict, as measured by the conflict index, as the independent variable and operating performance as the dependent variable, regression was used to determine impact. Regressions were run for different groups of dealers based on automobile brand. Results showed that for Ford and Chrysler-Plymouth dealers, increasing levels of channel conflict tended to decrease dealer operating performance ($p < .01$) (p. 10). For all other dealer groups and possible relationships, no significant relationships were discovered. Lusch thus operationalized and measured conflict as the frequency of perceived disagreement over instrumental behavior.

Summary. The research on intrachannel conflict is inconclusive, mainly due to the lack of empirical research about the concept. The only trend which can be seen from the two empirical studies discovered is that researchers, while aware of the affective component of conflict, have operationalized the concept in terms of its behavioral (manifest) component. This probably produced a measurement instrument which does not fully measure the level of conflict present.

Conflict aftermath. The literature on conflict aftermath is very limited with no directly related empirical research. Therefore, this section will focus on some of the hypothesized organizational changes as suggested in the literature. The possible outcomes, as presented in the literature, fall into two classifications: (1) disintegration and (2) unification (Stern and Gorman, 1969, p. 171). Disintegration would be the result when in extreme cases the channel members decide to terminate the relationship. This possible outcome also assumes that there are other organizations capable of fulfilling the vacant positions in the channel--less than complete dependency.

Possible outcomes leading to unification of the channel system include: (1) changes in goals, (2) changes in domain conceptions, (3) changes in perceptions, and (4) changes in instrumental behavior. As was previously noted concerning conflict, overt behaviors in the conflict situation can be classified as intraorganizational change (Stern and Gorman, 1969, p. 161). These intraorganizational changes could be manifested in goals, domain conceptions, and perceptions. Although these changes are formulated as taking place in the focal organization--the reactor, as a result of a successful conflict episode

to the initiator--they also could refer to changes in the initiating organization if the conflict episode were not completely successful for that organization. Thus, the goals, domains, and perceptions would be more similar between the organizations and tend to more unify the channel system.

The final possible outcome of a conflict episode, as revealed in the literature, is a change in instrumental behavior. Stern and Gorman (1969, p. 171) argue that conflict can produce a reallocation of tasks (domain shift) among channel members, and this reallocation may prove more beneficial to the channel system as a whole, making the channel more unified.

Summary. Very little has been learned about conflict aftermath from an empirical standpoint, but there has been some hypothesization concerning the effects of a conflict episode. These hypothesized outcomes can have an unifying effect by reducing the cause of the conflict, or they can cause disintegration of the channel system if the outcomes are not acceptable for one or more channel members.

Intrachannel Conflict Research Summary and Conclusions

This section has attempted to review the literature as it pertains to intrachannel conflict. The literature was divided into three separate areas: (1) antecedents of conflict, (2) conflict itself, and (3) conflict aftermath. Antecedents of conflict were composed of one necessary condition, interdependency, and three causes: (1) goal incompatibility, (2) domain dissensus, and (3) perceptions.

The literature dealing with conflict showed conflict conceptually as having affective and behavioral components. Empirically, conflict

has been operationalized as behavior. These behaviors were classified as actions or reactions. Actions or reactions could either be in the form of an exercise of power or intraorganizational change. The empirical research on conflict focused on perceptions by channel members of others' instrumental behaviors as measures of conflict. Studies were carried out in both laboratory and field settings.

Finally, the literature dealing with the outcomes--conflict aftermath--of a conflict episode was reviewed. Conflict aftermath was hypothesized to be of two types: (1) disintegration and (2) unification. Unification was achieved through changes in goals, domain conceptions, perceptions, and activities among the conflicting organizations. No empirical literature was discovered which dealt directly with conflict aftermath.

There is a general lack of empirical research directly related to intrachannel conflict. The main cause is the difficulty in obtaining necessary data. Organizations are somewhat hesitant to allow channel conflict researchers access to information or information developing research tools, possibly for fear that the research results might reveal their aggressive and exploitive behaviors toward other channel members.

There is also a lack of empirical backing for the concepts and interrelationships pertaining to intrachannel conflict. This is, of course, due to the cause mentioned for a general lack of empirical research. The lack of sufficient conceptualization and specification of relationships makes the development of empirical support for intrachannel concepts very difficult.

A final conclusion deals with variable measurement. All three studies reviewed attempted to empirically assess conflict or used perceptual measures. The studies measured conflict using perceptions of manifest conflict, neglecting the felt aspect of conflict. Furthermore, Lusch summed his ordinal data into a conflict index and then used parametric techniques, and Shuptrine and Foster failed to provide any means of determining if their conflict measure actually measured conflict. With these problems in mind, it is obvious that the measurement of conflict is still very simplistic and sometimes methodologically unsound.

Future Research Directions

Several specific research areas seem appropriate for future research efforts dealing with intrachannel conflict in marketing. Future empirical research efforts need to be focused on testing the relationships as specified by Pondy's paradigm. Do the antecedents of conflict actually produce conflict? Is dependence really a necessary condition to the development of conflict? If so, what would be the effect of different levels of dependence on the level of conflict that is developed? What, if any, are the changes that occur in conflict aftermath?

Future research is needed to study the relationships between a current conflict episode and the future potential for conflict between those organizations. Are the effects of a current conflict episode, as seen in the changes in conflict aftermath, on future potential conflict mediated by the motivational forces of an organization?

Measurement of conflict needs to be the point of concern in future research. Improvement of the current approaches to measure felt conflict might be needed. The key question here would be the importance of felt conflict in channel situations. Does it develop to any degree in the marketing channel? At the least, conflict researchers should resist the temptation to use parametric statistical approaches on ordinal data.

A final fruitful avenue of inquiry concerns the individual channel member organizations. What impact do the motivational forces of an organization have on its development of goals? A classification of different types of organizations based on their motivational forces would be useful to channel members when selecting and dealing with other channel members. What impact do the motivational forces of an organization have on the conflict behaviors (actions and/or reactions) of that organization in an intrachannel conflict episode? Do certain motivational forces tend to make organizations exhibit similar types of conflict behaviors?

General Research Summary and Conclusions

This chapter has reviewed the research dealing with inter-organizational dependence, power, and intrachannel conflict. The major target of research effort in marketing channels has been the concept of power, due primarily to a strong theoretical base for developing hypotheses and methodologies. The conflict concept has a confusing diversity in its theoretical footings, thus making it less attractive for research purposes. Dependence has apparently been considered as

relatively unimportant as a mediating variable. This view comes from the "assume it is there and forget about it" procedure used by the majority of channel researchers.

All three concepts seem to have sufficiently developed theoretical footings to provide springboards for further research. Although the theoretical background for conflict is diverse, channel conceptualists (Stern and Gorman) have selected Pondy's popular view of conflict.

Very little effort and thus little empirical results have been given to studying the interrelationships between the three major variables. Although relationships have been hypothesized by Emerson, Schmidt and Kochan and Stern (with others), little research effort has been put forth to test the hypotheses. Only four studies attempted to test the theoretical linkages between these major channel concepts. El-Ansary and Stern (1972) looked at the relationship between power and dependence, using Emerson's theoretical base. They found no statistical support for the hypothesized relationship, but, as previously noted, this may have been due to the research instrument's scale.

Etgar (1976) found support for the relationship between Emerson's conceptualization of the power-dependence relationship. However, Etgar's approach to dependence measurement is questionable. Etgar used three objective and one perceptual measure of dependence in his operationalization of Emerson's concept. Taken together, they seem to capture Emerson's two components of dependence: (1) motivational investment in goals and (2) availability. To truly reflect Emerson's concept, the two basic components must be considered together as one component $\left(\frac{\text{motivational investment in goals}}{\text{availability}}\right)$. Etgar's approach does

not do this. He does not put his measures together for his dependence concept but considers them as separate variables in his canonical analysis. Etgar's approach to dependence measurement is faulty. Therefore, the relationship between dependence and power has still not been verified.

The relationship between power and conflict has been studied by Lusch (1976) and Brown and Frazier (1978). Both of these studies looked specifically at the relationship between power bases and conflict. With regard to the relationship between conflict and the reward power base, these studies provide differing results. Lusch found a negative relationship between reward power and conflict, while Brown and Frazier found none.

Lusch's measurement of conflict focused on the perceived frequency of disagreement between channel members over several issues. Scores on each issue were summed to form a conflict index. Lusch failed to provide a manner of weighting the issues as to their importance. For example, a low frequency of disagreement over a very important issue may have produced more conflict than a large frequency of disagreement over an unimportant issue.

Brown and Frazier provided a method of weighting the issues as to their importance and thus probably provided a better measure of conflict. The relationship between dependence and conflict has received no attention in the literature.

For the interrelationships as a whole, very little has been discovered by previous research. With the hypothesized relationships present, there is great opportunity for little empirical progress to

be made. Future channel research must attempt to determine the nature of the interrelationships between dependence, power, and conflict. Of aid to these future channel research efforts would be a comprehensive channel model which specifies, in some detail, the interrelationships among the three major channel variables. This model should be grounded in the behavioral science literature and incorporate much of the literature reviewed by this study. With this grounding, the comprehensive model could provide researchers the framework from which the variables themselves as well as their interrelationships could be tested.

The overwhelming measurement approach in studying all three major channel concepts has been to obtain the perceptions of key organization members. The choice of key organization members as respondents seems appropriate since these parties should be better informed about organization strategies and the general behavior of the organization toward its fellow channel members. Perceptual measurement approaches also seem appropriate. Various authors provide support from other social science areas for the perceptual measurement of power.

Conflict, since it is usually conceptualized to have affective and behavioral components, also seems more conducive to a perceptual measurement approach. Objectively measuring the felt component of conflict seems like a difficult, if not impossible, task. Even objectively measuring the behavioral component would be difficult. If observation were used as a technique to gather objective data, it would be very hard to determine what behaviors would be classified as conflict and which behaviors would not. What might constitute a conflict

behavior to one key organization member may not to another. Future research must come to grips with these problems in the measurement of intrachannel conflict. It would be most advantageous to start with perceptually measuring manifest conflict and then proceed to the more difficult felt aspects of conflict.

The most appropriate measurement approach, with regard to dependence, is not as clear as the other major channel variables. Objective (Etgar) and perceptual (El-Ansary and Stern) measures have been used. However, as noted previously, both approaches had methodological problems. Additional attempts to measure dependency are needed so that the importance of dependence in channel relations can be determined. Perhaps both approaches to the measurement of dependence should be pursued. If objective and perceptual measurement approaches are to be constructed, then future research must attempt to more clearly define Emerson's dependence concept. This definitional clarity is needed so that the operationalized and measured concepts are good representations of dependence, as Emerson conceptualized it. Past research has not resolved this problem. If both methods of measurement could be developed, the two measures could be correlated to indicate the validity of the measures and the dependence concept.

In sum, the level of knowledge about marketing channels is relatively low. Although there has been a fair amount of effort, the effectiveness of that effort is limited. Problems in variable measurement and methodology are main contributors to this situation. Another contributor has been the general lack of study of the relationships among channel variables. Research has looked at bits and pieces of the

interrelationships between dependence, power, and conflict, but no attempt has been made to study all three simultaneously and determine the nature of the interrelationships. A major reason for the lack of this type of comprehensive approach to studying marketing channels is that there were no integrative models of channel behavior which viewed the major variables as they relate to one another. Consumer behavior had its Howard and Sheth and Engel, Kollat, and Blackwell models, but channels did not. Therefore, an integrative model of channel behavior would help researchers to better conceptualize, measure, and test the various channel variables and their interrelationships. The following section will present a model which attempts to correctly portray channel behavior.

An Integrative Approach to Channel Research

This section of Chapter II will present an integrative model-based approach to marketing channel research. This will be done by presenting and discussing the model and then by noting the advantages that the model has for providing a springboard for further channel research.

Overview of the Model

The integrative channel model is that developed by Cadotte and Stern (1979). A diagrammatic view of the model is shown in Figure 4. The model uses a conflict episode between two organizations as the mechanism for integrating channel research.

Antecedents. The upper left half of the model as shown in Figure 4 specifies three potential causes of channel conflict: (1) goal

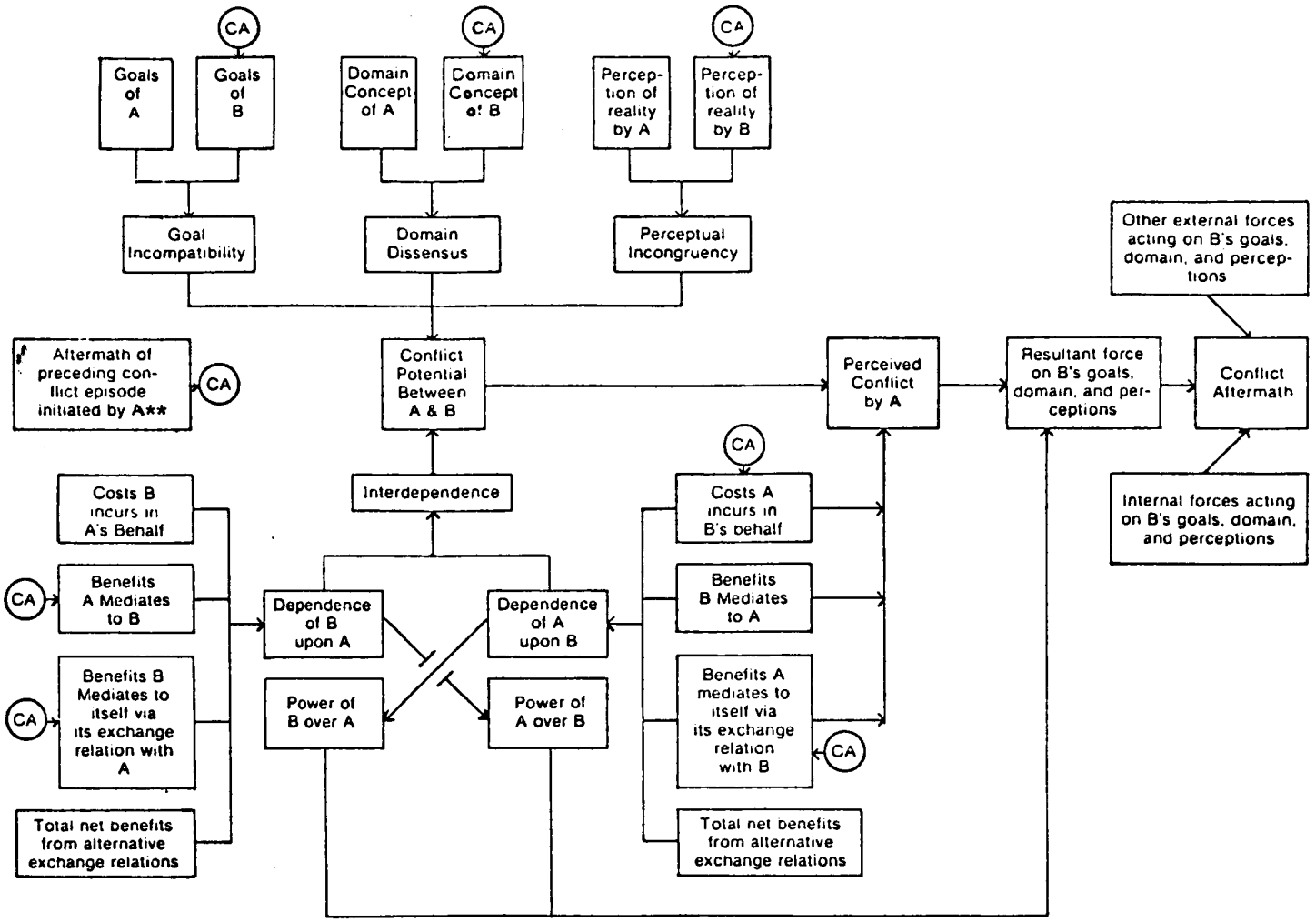


Figure 4. The dynamic process of a conflict episode in dyadic interorganizational relations.*

*The conflict episode portrayed here is taken from organization A's perspective.

**The variables which change during the aftermath stage of the conflict process are designated by "CA."

incompatibility, (2) domain dissensus, and (3) perceptual incongruency. The lower left portion of the model delineates the components of dependence for each organization and specifies the development of the necessary condition for conflict--interdependency. This lower portion of the model also specifies the relationship between dependence and power.

Conflict. The middle right-hand portion of the model shows developed conflict. The conflict perceived by A is directly dependent on the potential for conflict between the two parties and the ratio of costs incurred by A over benefits that A receives from its relationship with B. The greater the potential for conflict and the greater the cost-benefit ratio, the greater the chances conflict will be perceived.

Once conflict is perceived by A, a resultant force develops as A attempts to reduce the conflict by changing B's goals, domain, or perceptions (the causes). The magnitude of the resultant force is dependent on A's power over B, the perceived distance of the changes in B, and B's rigidity with regard to its goals, domain, and perceptions.

Conflict aftermath. The extreme right-hand portion of the model shows the last aspect of the conflict episode, conflict aftermath. Whether or not B's changes in accordance with A's desires is dependent on many internal and external forces acting upon B. Note that the model also delineates specific changes in both A and B due to the conflict episode and sets the stage for the changes to have an effect on the next conflict episode.

Advantages of the Model

The Cadotte and Stern model provides several advantages as a springboard for further channel research because it overcomes many of the problems in the channel research foundation as identified in early sections of the chapter. These advantages will be discussed in the following paragraphs.

The Cadotte and Stern model's major advantage is that it views the three major channel concepts (dependence, power, and conflict) in an integrated manner. This is in direct contrast to the isolated approach taken by most researchers.

A second advantage of the model is that this integration (advantage one) is done using the concept of a conflict episode as developed by Pondy. Using Pondy's popular paradigm adds strength to the theoretical footings of the model.

Following from the first two advantages, the model specifies the relationships between the three major channel concepts and thus allows the development of testable hypotheses concerning the nature of these relationships.

Fourth, the Cadotte and Stern model uses Emerson's theoretical base in the development of the dependence concept and its relationship to power.

A final advantage is that the model identifies the antecedents of conflict and specifies their interrelationship. This is done in a manner consistent with the literature base.

Future Directions for Channel Research

Use of the Cadotte and Stern model of a conflict episode opens numerous avenues for future research in marketing channels. The model points to the need for the development of methodologies for measuring the antecedents of conflict. Methods of measuring goal incompatibility, domain dissensus, and perceptual incongruency (the causes) as well as dependency (the necessary condition) are needed.

If suitable conflict measurement antecedents can be developed, then the relationships between the variables and conflict should be tested.

A new area of research which the model highlights is that of the resistance of the organization toward whom power is directed. What are the conditions which lead to rigid goals, domain, and perceptions? Do certain characteristics of organizations form classes of organizations which are more or less susceptible to the power plays of others?

The conflict aftermath changes hypothesized by the model are open to testing. What effect do the changes produced by the last episode have on current or future conflict episodes?

Finally, the model gives dependence the key role in the conflict episode. The key then to understanding channel behavior would be the study of the dependence variable and its interrelationships with power and conflict. Since the Cadotte and Stern conflict episode model provides a relatively clear specification of the components of dependence and the relationship with power and conflict, this study concentrated on dependence as the key variable. The study attempted to operationalize, measure, and test dependence and its relationships with power and

conflict. The following chapter will provide a detailed discussion of the dependence component of the overall Cadotte and Stern model and from that base describe the study.

CHAPTER III

OBJECTIVES, VARIABLES, AND CHANNEL SETTING

Overview

This chapter presents the methodology for testing a model and operationalization of interorganizational dependence in a marketing channel. This interorganizational dependence model is the central part of the complete Cadotte and Stern conflict episode model (Figure 4, page 67). The discussion is divided into three parts: (1) research objectives, (2) the variables and their interrelationships, and (3) development and description of the channel setting.

Research Objectives

This research study had five objectives. The first objective was to test the Cadotte-Stern model of interorganizational dependence. Testing of the Cadotte and Stern model is imperative to its validation. The model does possess high face validity. Several reasons provide the basis for this high face validity. First, its theoretical base is well grounded in social science literature. The Emerson power-dependence concept is one of the most frequently cited references in interorganizational literature. Second, the conceptual development from this base draws from several areas of social science--sociology, marketing, organizational behavior, and small group psychology. Finally, the Cadotte and Stern conceptualization overcomes many of the shortcomings, as noted in Chapter II, of previous attempts to come to grips with interorganizational dependence. Face validity alone is not sufficient

to establish the value of a concept. Testing is necessary to determine its ultimate validity and value to the study of interorganizational relations.

The second research objective goes hand-in-hand with the first. In order to test the Cadotte-Stern model of interorganizational dependence (objective one), the model must be operationalized (objective two). Therefore, the second objective was to take the theoretical model of interorganizational dependence and translate each component into its measurable and observable counterparts.

Third, this research attempts to test key relationships between dependence and several other interorganizational concepts as predicted by the Cadotte and Stern model. Favorable results of these tests would increase the internal validity of the model and its operationalization.

The fourth research objective was that of developing a controlled environment in which to test the interorganizational dependence model and its operationalization. Such an environment was desirable in this study because it allowed the removal and/or control of certain variables, which could have increased the internal validity of the conceptualization and operationalization of the model of dependence.

The fifth research objective was to present the implications of this research for further study of interorganizational relations in marketing channels. Success and failure in results and methodology could be useful to those attempting to study channel relations in a real-world setting and ultimately to the development of channel management strategies.

Variable Operationalization

The variables of interest to this study were dependence, perceived dependence, perceived power, and perceived conflict. Each of these variables is discussed with regard to its nature and operationalization.

Dependence

The heart of this research effort was the dependence variable as conceptualized by Cadotte and Stern. Discussion of the nature of the variable focuses on its theoretical foundation and the development of the Cadotte and Stern model. Following this, operationalization of the model and limitations of the operational model are presented.

Theoretical base. Emerson proposed that power was not an attribute of an actor but a property of the social relation. In short, power resides implicitly in the other's dependence (1962, p. 32). The power which one actor has over another is a function of the other's dependency on the first. Without dependency, the first actor cannot have power over the second.

Emerson points to the study of dependency as the key to the study of power in social relations. He proposes that dependency is a function of two variables:

> The dependence of actor A upon actor B is (1) directly proportional to A's motivational investment in goals mediated by B and (2) inversely proportional to the availability of those goals to A outside of the A-B relation. (p. 32)

In equation form:

$$D_{ab} = \frac{\text{A's motivational investment in goals mediated by B}}{\text{The availability of A's goals outside the A-B relation}} \quad \text{(1a)} \quad \text{(1b)}$$

When A has complete motivational investment in goals mediated by B and the goals are not available elsewhere, A is completely dependent on B (ratio value near 1). On the other hand, when A has little motivational investment in goals mediated by B and A's goals are abundantly available elsewhere, A is only slightly dependent on B (ratio value near 0). Therefore, one of the keys to the study of power in social relations would be the further refinement and testing of the two variables that compose dependency.

Adaptation to marketing channels. Cadotte and Stern have suggested that Emerson's conceptualization can be applied in a distribution channel situation and have added definition to the components of the concept. According to Cadotte and Stern, the dependence of A on B is equal to

$$D_{ab} = \frac{\dfrac{\text{B's net contribution to A's goal attainment}}{\text{A's current level of goal attainment}}}{\displaystyle\sum_{K \epsilon S} \frac{\text{The total goal contribution of a relation with alternative K}}{\text{The total goal contribution of a relation with B}}} \quad \text{(2a)} \quad \text{(2b)}$$

where:

S = the total set of alternatives available to A.

A's motivational investment in goals mediated by B (1a) is operationalized to be equal to the percentage of total goal attainment

of A which is mediated to A by B. Complete motivational investment by A would be possible when 100% of A's total goal attainment is mediated by B. A would have no motivational investment when B contributed nothing to A's total goal attainment.

The availability of A's goals outside the A-B relation (1b) is operationalized to be equal to a ratio of the total goal contribution available to A from all possible alternatives, including B, over the total goal contribution which A obtains from B. Thus, if there is no availability of A's goals outside the A-B relation, then A is completely dependent on B, and the denominator equals 1. But, if there is an availability of A's goals outside the A-B relation, the dependence of A on B is less than complete and will become smaller the greater the availability of A's goals outside the A-B relation.

Cadotte and Stern more precisely define their operationalization of dependence in the following equation:

$$D_{ab} = \frac{\text{The benefits A receives from a relation with B} - \text{The cost A incurs in B's behalf} \quad (3a)}{\sum_{i \epsilon T} \left[\text{The benefits A receives from a relation with i} - \text{The costs A incurs in i's behalf} + \text{The benefits A receives from A via the A-i relation} \right]} \quad (3b)$$

$$\sum_{K \epsilon S} \left[\frac{\text{The benefits A receives from a relation with K} - \text{The costs A incurs in K's behalf} + \text{The benefits A receives from A via the A-K relation}}{\text{The benefits A receives from a relation with B} - \text{The costs A incurs in B's behalf} + \text{The benefits A receives from A via the A-B relation}} \right] \quad (3c) \quad (3d)$$

where:

T = the alternatives with which A currently has a relationship;

S = the total set of alternatives available to A.

The numerator of (3) above states that the percentage of total net benefits (benefits-costs) (equation 3b) that A obtains from its relation with B (equation 3a) is equal to A's motivational investment in goals mediated by B (equation 1a). The denominator of (3) equates the availability of A's goals outside the A-B relation with a ratio of the net benefits (benefits-costs) available from all present and potential alternatives, including B, to the net benefits (benefits-costs) obtained from the A-B relation.

Model characteristics. The numerator of equation (3) must vary from 0 to 1 inclusive. If B is supplying all of the net benefits (goal accomplishment) of A, then the ratio of (3a) to (3b) is 1, and, thus, A has maximum motivational investment in goals mediated by B. When B provides no positive net benefits to A, then equation (3a) becomes 0, and the numerator of (3) also becomes 0. This zero value shows that A has no motivational investment in goals mediated by B.

Equation (3)'s denominator value cannot be less than 1. If the only positive net benefits that are available from A's present and potential alternatives comes from the B relation, then (3c) and (3d) will be equal, and the denominator of (3) will be 1. When the denominator is 1, this will show that there is no availability of A's goals outside the A-B relation. However, when any other present or potential alternative provides A with positive net benefits (goal accomplishment), equation (3c) will be larger (net benefits of the A-B relation plus the

A-K relation) than equation (3d), and the ratio will be larger than 1. When this happens, it signifies that there is an availability of A's goals outside the A-B relation and that the larger the ratio, the greater the availability.

Therefore, since the numerator must vary between 0 and 1, inclusive, and the denominator must be greater than or equal to 1, the dependence of A on B must vary between 0 and 1, inclusive. If dependence is equal to 0, then A is not dependent to any degree at all on B. This will occur only when A receives no positive net benefits from B. If dependence is equal to 1, then A is completely dependent on B for all of its goal accomplishment, and no other alternatives can provide positive net benefits to A. When this is the case, all of the equations of (3) will be equal.

A final characteristic of the dependence model concerns the number of potential alternatives available. An organization with relatively few alternatives will be more dependent on those alternatives than if the organization had relatively many alternatives. This relationship can be seen by considering equation (3). In equation (3), the number of alternatives had its effect in the top of the denominator (3c). As the number of potential alternatives (S) increases, the greater the chance of receiving offers from these additional alternatives and thus the larger equation (3c). If equation (3c) is larger, then the denominator of equation (3) will be larger, and the result will be a smaller value (dependence) for equation (3). Thus, the larger the number of potential alternatives, the smaller the level of dependence.

Operationalizing the model. The Cadotte and Stern model of inter-organizational dependence then is based on the benefits and costs that are present in a dyadic relationship. The key to operationalizing the model is specification and measurement of those benefits and costs. Cadotte and Stern provide the starting point by classifying benefits and costs into three groups. The first group is classified as utilitarian and includes research funds, sales volume and margins, promotional allowances, technical and administrative assistance, and manpower. The second group, coercive rewards and benefits, is composed of withdrawing rewards, blacklisting, initiating antitrust actions, and doing physical harm to another organization's assets or personnel. Normative resources compose the last group and include the allocation of symbols of esteem, prestige, and acceptance. For example, franchisors frequently present franchisees with certificates of excellence based on their accomplishments as franchisees.

Measurement requires the identification and valuation of all benefits and costs that are involved with a company's channel relations. Each benefit would have to be identified and then some common means of valuation determined so that all benefits and costs involved with the channel relation would be summed, as required by the model of dependence.

A major task then would be deciding on some common method of valuation. Some benefits and costs lend themselves to measurement in dollars (volume and profit margins, promotional allowances, etc.), but others (blacklisting, doing physical harm, and the allocation of symbols) do not. Some common denominator of valuation, such as utility, must be developed.

After the unit of valuation is decided, each of the benefits and costs must be assigned some amount of the valuation unit. This would be a difficult task because consistency in the amount of valuation would be required. One possible approach might be to use multiple raters, who determine the amount of valuation, in a delphi approach. Another possible approach would be to focus on utilitarian benefits and costs. This would be advantageous in that a common valuation measure (dollars) is present in dealing with utilitarian variables. For this approach to be useful, a contrived setting would have to be developed where utilitarian variables are stressed and coercive and normative variables are at least suppressed. Focusing only on utilitarian variables would seem to be the most promising approach. This approach led to certain limitations which are discussed in the subsequent section on limitations of the operational model.

Model modifications. Operationalization of the interorganizational dependency model in a contrived setting would also require some modification of the formulation as presented in equation (3), page 76. In equations (3b), (3c), and (3d), Cadotte and Stern include a measure of the benefits that A mediates to itself via its relation with B, i, or K. These benefits were assumed to be measured by the net benefits (benefits-costs) obtained in the realtion with B, i, or K as measured by the first two terms in equations (3b), (3c), and (3d). Since the goal of the firms in the contrived setting would be that of profit maximation (a utilitarian goal), any benefits A might mediate for itself should show up in its level of profits obtained in its relation with an alternative. The modified formulation would then be:

$$D_{ab} = \frac{\text{The benefits A receives from a relation with B} - \text{The costs A incurs in B's behalf}}{\sum_{i \in T} \left[\text{The benefits A receives from a relation with i} - \text{The costs A incurs in i's behalf}\right]} \quad (4a)$$

$$= \frac{\sum_{K \in S} \left[\text{The benefits A receives from a relation with K} - \text{The costs A incurs in K's behalf}\right]}{\sum_{K \in S} \left[\text{The benefits A receives from a relation with B} - \text{The costs A incurs in B's behalf}\right]} \quad (4b)$$

(4c)

(4d)

Limitations of the modified model. One obvious limitation is that the model is only applicable to the analysis of relations between two organizations. Dyadic in nature, it cannot handle triadic relationships. Another limitation involves the use of only utilitarian benefits and costs. While this resolves the measurement and valuation task, it increases the possibility of not accounting for a significant amount of variance (in a $\underline{R}^2$ sense) between the operational dependence measure and other predictor variables. There probably would be some nonutilitarian benefits and costs present in a contrived setting.

A final possible limitation is brought about by the elimination of the benefits which A mediates to itself in its relation with B, i, or K. The dependence measure produced by this modified model could be distorted. This distortion could show itself in both the numerator and denominator of equation (3), page 76. The numerator might tend to overstate the motivational investment of A in goals mediated by B.

This is possible because the total goal attainment of A (3b, page 76) will be understated by the amount of self-mediated benefits. Therefore, (3b) will be smaller, and the value of the ratio $\frac{(3a)}{(3b)}$ will be larger. The denominator could be understated (lesser availability) if, on the average, the missing self-mediated benefits by A from the A-B relation were smaller than the benefits A mediates to itself from the total set of alternatives to A.

However, these possible effects will probably not occur. This point is clear if an inspection is made of the exact meaning of this self-mediated benefit term. This term was developed to recognize that A is not a passive channel member but that he is able to manage his dependence and increase the benefits to himself (Cadotte and Stern, 1979, p. 128). Franchisors provide services to their franchisees to increase the franchisees' profitability and that of the franchise system in general. This increase in system profitability is the self-mediated benefit of the franchisor. The major point is that even though they are mediated by the franchisor, these additional benefits pass through the other organizations (p. 129). Therefore, by focusing on the net benefits of a relation, this self-mediated benefit should be accounted for. The only possible problem would be that equation (3a) (B's net contribution to A's goal attainment) might be overstated because it contains A's self-mediated benefits from its relation with B. This would cause the numerator of equation (3) (A's motivational investment in goals mediated by B) to be overstated and, thus, slightly increase the dependence measure of A on B.

Perceptual Variables

Perceived dependence, perceived power, and perceived conflict were also important variables in this study. They were important because verification of their relationship with the operationalized Cadotte and Stern dependence model, as predicted by the complete conflict episode model (Figure 4, page 67), would provide further support for the validity of the operationalization of dependence.

Perceptual measures in general have been used for measuring many social science variables. For these particular variables, perceptual methods of measurement seem appropriate because the objective reality may have less impact on their actions than would perceived reality. Their actions are based on what they believe to be true, whether or not it is from an objective sense. Therefore, perceptual measures of these variables could increase the accuracy of prediction due to better measurement.

Perceived dependence. Perceived dependence provides another way of assessing the dependence construct. Multiple methods of assessment are desirable because they can provide further support for the construct of interest. A high degree of association between the operationalized and the perceptual measures of dependence would add weight to the validity of the dependence construct. Also, the ability to correctly predict levels of dependence using the two methods of measurement would increase the validity of the construct.

A perceptual measure of dependence should attempt to measure the dependence construct in the terms of Emerson's original conceptualization. The measurement should consider the goal contribution of the

alternative, while simultaneously assessing the availability of goal accomplishment outside that relationship.

The use of Emerson's concept in designing a perceptual measure was important so that both measurement methods would have a common theoretical foundation and thus increase the changes of increasing the validity of the construct.

Perceived power. Perceived power was a variable of interest because of its hypothesized relationship with dependence. Emerson (and thus the Cadotte and Stern conflict episode model) has conceptualized power as the obverse of dependence. The usage of power is limited by dependence. Without dependence between two organizations, there can be no use of power. The organization who is trying to be influenced can simply break off the relationship and seek other suppliers or outlets. Therefore, the greater the level of dependence on A by B, the greater the level of power of A as perceived by B. A strong positive relationship should exist between the two concepts. Support of this contention would increase the validity of the dependence construct and the relationship as specified by the Cadotte and Stern conflict episode model.

Power has generally been viewed in the literature as the ability to impress one firm's will on another. Operationally, this has been defined in terms of A's ability to change B's marketing decisions. Measurement of power would then be a perceptual assessment of the success of one organization in changing another's marketing decisions.

Perceived conflict. The final major variable of interest in this study was perceived conflict. As discussed in Chapter II, conflict

has been called a "rubber concept" because of its diverse and confusing theoretical background. Marketing channel researchers have basically followed Pondy (1967) in their approach to intrachannel conflict. Pondy views conflict as a process composed of conflict antecedents, conflict, and conflict aftermath. Dependence has been conceptualized by theorists to be a conflict antecedent. The greater the dependence of A on B, the greater the potential for conflict to be perceived by A.

Although Pondy's conceptualization of conflict had two components (felt and manifest), channel researchers have concentrated on operationalizing the concept as perceptions of conflictive behaviors (manifest conflict). Following this trend then, a measure of conflict would concentrate on obtaining perceptions of behaviors which were conflict producing.

Variable Interrelationships

The interrelationships between the four variables are relatively straightforward. Levels of dependence, as measured by the operationalized dependence model and perceived dependence, should be positively associated since both supposedly measure the same construct. The level of dependence should determine the level of perceived power if Emerson's basic conceptualization is valid. The level of dependence should also determine the level of perceived conflict if the relationship, as predicted by the Cadotte and Stern conflict episode model, is valid.

Channel Setting

Selection of the channel setting for this study was crucial. An ideal setting would allow for: (1) ease of data collection, (2) ease

of measurement, (3) realism, (4) high control, (5) ease of finding or developing the setting, and (6) simplicity. Clearly, some of the characteristics are in conflict. For instance, the achieving of high control and simplicity yet maintaining a high level of realism in the channel setting is in direct conflict. The best channel setting will probably be one in which a balance among these characteristics is present.

Alternative Settings

Three possible channel settings considered included: (1) real world, (2) complete computer simulation, and (3) parasimulation. The real world setting would be the utilization of an actual marketing channel situation. The complete computer simulation setting would be one where all the variables, interrelationships, and possible action and reaction would be programmed and manipulated within a computer. The parasimulation environment is an abstraction of the real world setting but without eliminating the human element as does the complete computer simulation. These three alternatives represent a continuum of channel settings (Figure 5) with the real world and complete computer simulation on each end and the parasimulation somewhere in between.

Real world. One alternative channel setting for this study would have been a real world channel situation involving organizations which interact to distribute a product or products to consumers or industrial users. This alternative possesses several positive characteristics. The most important is its realism and thus its ability to produce high external validity. The real world setting was also

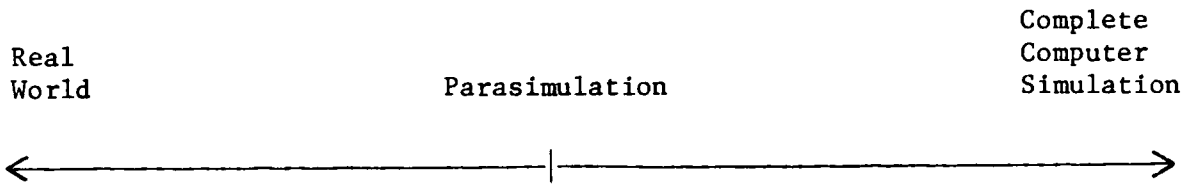


Figure 5. Channel setting alternatives.

attractive because there was no need to construct a situation to use as a setting; it is already there in all its complexity.

However, the real world channel setting is not without its drawbacks. Finding companies which accumulate the necessary data and which would allow access to this data may be a difficult task. Some of the data needed are proprietory, and thus companies may be reluctant to make the information available.

A second problem involves the difficulty in measuring the various types of data required by the research. It will be necessary to measure many different types of data, such as dollars of profit and the value of blacklisting another company, with some common measure of valuation. Choosing a common valuation unit and then assigning values on an objective basis would be extremely difficult.

A third negative characteristic was the complexity of the real world. This complexity is the counterpart of the positive realism characteristic. As the channel setting becomes more realistic, it also becomes more complex. The number of variables and interrelationships increases as the setting approaches a real world nature, and thus the complexity of the research task grows accordingly. It becomes increasingly difficult to isolate the variables and interrelationships of interest and take into account possible confounding elements.

Another negative aspect of a real world setting was the lack of control over the setting. The ability to control the above-mentioned confounding elements was one method of reducing the complexity of the situation under study and allowing a clearer view of the actions of channel member organizations. Also, this control ability allows the

researcher to effect certain channel situations of interest. In the real world setting, however, the situation is not under any great degree of control by the researcher. The researcher must accept the conditions and characteristics of the channel and attempt to adapt to them. The situation of interest to the researcher may or may not be present to the degree desired. Even if it is, the inability to control the channel setting and thus reduce its complexity may make the research task impossible.

Finally, since studying the actions and reactions of firms in a real channel requires sufficient time for these occurrences to develop, the time and cost of carrying out this type of longitudinal study would be prohibitive.

Complete computer simulation. An alternative channel setting was that of a complete computer simulation with no human interaction. This alternative occupies the opposite end of the channel settings' continuum from the real world channel setting and has several positive advantages.

First, the complete computer simulation of the channel setting would allow for maximum researcher control. Since only those variables and interrelationships considered to be significant by the researcher will be present in the simulated channel setting, those variables and interrelationships of interest will be easily observed by the researcher. Moreover, situations of interest can be initiated when and where desired by the researcher. The simulated channel setting also gives the researcher complete access to all data needed. In addition, the researcher can be assured of the existence of necessary data through his design of the simulation.

A third advantage of the simulated setting was the ability to construct the simulation so that some common form of measurement and valuation was available. The researcher can assign common valuation measures to benefits and costs incurred by channel members in their intrachannel relations.

The fourth and final advantage of using a complete computer simulated channel setting is its less complex nature. Because the researcher has specified the variables and interrelationships in the simulation, the ability to isolate cause and effect relationships without extraneous forces is maximized.

The complete computer simulation does possess one serious shortcoming. The disadvantage of a simulation is the difficulty of the development task. To be a legitimate vehicle for testing and operationalizing the model of interorganizational dependence, the simulation must be a reasonable and accurate abstraction of an actual channel setting. If the simulation is to meet these requirements, it must specify the significant variables in a channel setting and the interrelationships of these variables. The task of delineating the significant channel variables at this stage of channel research development would be a monumental effort. Moreover, once these variables were specified and clarified to the degree necessary for simulation purposes, then the significant interrelationships between the variables must be recognized and specified. This task is even more difficult at the present level of the development of channel research. Therefore, the development of a complete computer simulated channel environment that produces valid results will be very difficult to achieve.

Parasimulation. The third alternative falls between the two extremes of alternative one (real world setting) and alternative two (complete computer simulation). This alternative is called a parasimulation, defined by Stern, Sternthal, and Craig as:

> In terms of formal rules, need for a historical data base, and analogical consistency, a parasimulation is more complete than a game, but less complete than a full-blown simulation. On the other hand, a parasimulation affords less participant interaction than a game, but greater control is usually found in simulation exercises. Finally, in all three types of paradigms, specification of relationships is generally quite high. (1973, p. 171)

This alternative had several positive aspects in regards to this study. First, the parasimulation technique provided a moderate amount of researcher control, although it did not allow the level of control possible in a computer simulated channel setting because of the human element in the parasimulation channel setting. Since humans compose the channel "organizations" in a parasimulation setting, it is not possible to control their behaviors to the degree possible in the complete computer simulated setting. Also, conditions which the researcher believes will cause a desired situation may be created in the parasimulation, but there is much less assurance of the situation developing than in the simulation alternative. Control then is less than in the simulated channel setting but greater than in the real world alternative.

Second, the parasimulation channel setting is not as complex as the real world setting because the researcher has designed it as an abstraction which contains the key variables and relationships present in the real world situation but in such a manner that the actions and reactions of member organizations are more easily observed. However,

the channel situation is more complex than the simulated setting because of the freedom of the "organizations" to behave in potentially non-predictable manners. Also, the parasimulation offers access to needed data. In fact, member organizations can be required to retain and disclose all necessary data. Another advantage of the parasimulation channel setting is the opportunity it provides for properly measuring desired data. By so constructing the parasimulation, it is possible to minimize the measurement and valuation problem previously discussed. Discussion of how this was done will be presented later in this section.

Finally, this alternative requires a middle of the road development job for the researcher. Although there is a certain amount of development necessary to set up the parasimulation environment, primarily due to its lower level of specification of potential behaviors and outcomes, the development job is less complex than that required of a complete computer simulation.

The major negative aspect of the parasimulation alternative is that it is not the superior alternative on any of the previously mentioned characteristics. It, in fact, comes in second in all comparisons with the real world and complete computer simulation alternatives. Another important limitation to the parasimulation alternative is its inability to provide externally valid conclusions for the study. The contrived and abstracted nature of the parasimulation seriously limits the generalizability of the results.

After reviewing the relative advantages of the three channel setting alternatives, the parasimulation was selected to develop the channel setting in which to test and operationalize the model of

interorganizational dependence. This alternative was used primarily because of its ability to provide control to the researcher, its ability to provide measurable data, and the less complex development task but yet a good measure of reality.

Description of the Parasimulation

The parasimulation chosen was originally developed by Cadotte and used as a classroom exercise in undergraduate marketing channels classes. An overview follows, with the complete parasimulation appearing in Appendix A.

Structure. It was composed of 16 firms--4 manufacturers, 3 wholesalers, 6 retailers, and 3 facilitating agencies (2 transportation companies and 1 central bank) as shown in Figure 6. Each firm was composed of five to eight student members. Students were deemed appropriate as subjects in the research because they were taking a course in marketing channels. This course provided them with the opportunity to learn about the nature and functioning of marketing channels and the management of channels. They, therefore, did have some base of knowledge to use in the roles as channel firm executives.

These firms operated in the poker chip product market, where the only competitive weapon available to firms was price. No product differentiation or promotion was possible. The basic tasks of all directly involved channel members (manufacturers, wholesalers, and retailers) included: (1) product management, (2) inventory management, and (3) negotiating (buying and selling). Firms competing in the parasimulation had profit maximation as their goal. The parasimulation was composed of seven market periods.

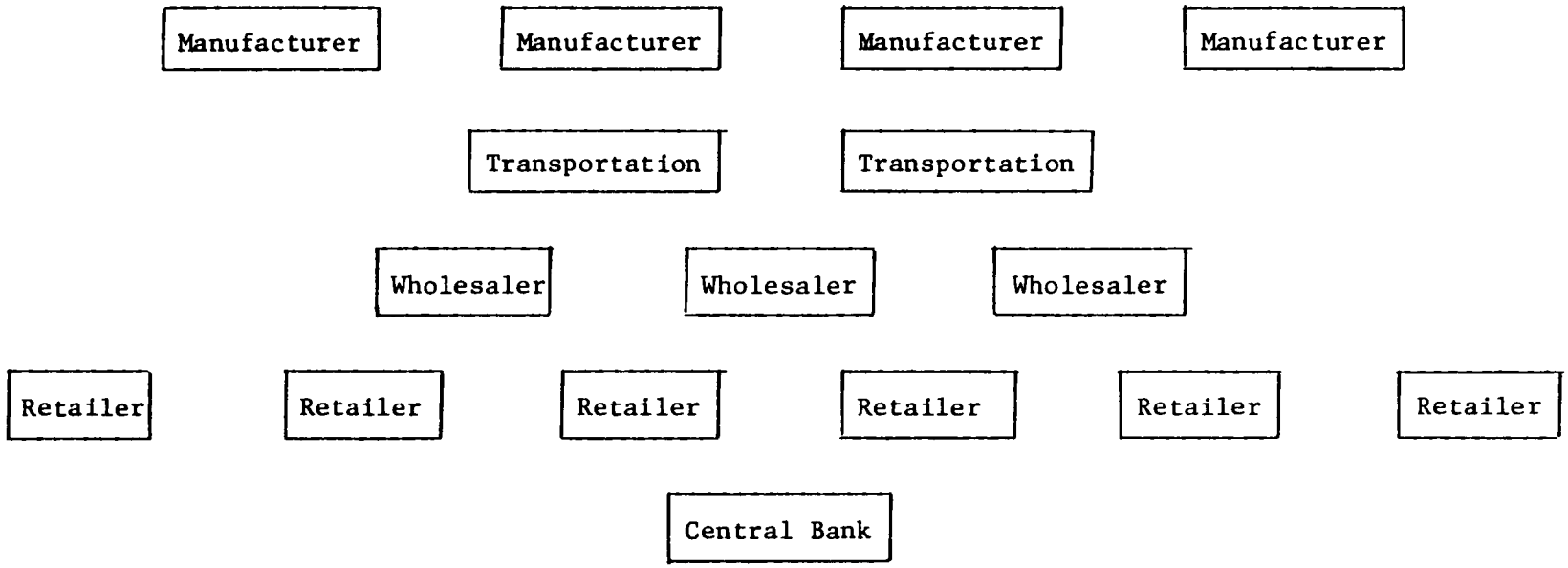


Figure 6. Parasimulation industry structure.

Communication. Communication between companies was a major consideration in the development and modification of the parasimulation. One approach considered was to physically separate teams and allow negotiations only by telephone. This would have allowed a complete record of interfirm communication because all phone calls could have been taped. This alternative, while very appealing, was not utilized due to limited funds and access to appropriate facilities.

Another alternative was to separate firms (although not visually as in the above) and allow only written communications between firms. This alternative would allow complete records of all interfirm communications but without the funds and facilities of the telephone alternative. It was used in a pretest situation and found to be unworkable. The time required to formulate, send, receive, and respond to communication was too great. The channel, for all practical purposes, ceased to function. A final alternative, and the one selected, was that allowing more direct interaction between firms. Firms (groups) were separated in a large lecture hall and allowed to directly negotiate.

To allow for data collection and to provide records for individual firms, all negotiations were recorded on the appropriate forms. The final forms used went through several modifications during the pretest sessions. To assure compliance, all firms were audited and fined if the appropriate forms were not utilized. In a pretest situation, this method was found to allow the channel to function and also to generate the necessary research data.

Suitability. The parasimulation was particularly appropriate for achieving the objectives of this study for several reasons. First,

the environment and nature of the tasks required by firms who competed in the poker chip product/market were of sufficient complexity to develop real world behavior by those firms. Obviously not all real world channel firm behaviors could be produced, but many significant ones were. Participants dealt with competitors through the use of competitive tools and some type of competitive strategy. Management attempted some type of forecasting in order to manage inventories in the face of changing demand. Executives negotiated with suppliers and/or outlets on price, quantity, and transportation charges and thus developed some basic negotiation strategy.

A second reason for the use of this parasimulation was its feasibility from a research standpoint. Two characteristics of the parasimulation added greatly to the feasibility of the research task. The firms in the parasimulation had only one objective--profit maximation. To achieve this objective, firms basically used utilitarian tools, mainly price. From a research standpoint, this allowed the focus to be on costs and benefits of a utilitarian nature and thus allowed a common measurement value--dollars. Second, since the parasimulation had only a single product, measurement and allocation of costs and benefits to appropriate products were simplified.

Finally, the common profit maximation objective could be reasonably assumed to be the chief motivating factor to firms. This was assumed because 10% of students' final course grade was determined by the relative profit level of their firm. This was important because it eliminated the possibility of comparing behaviors and drawing erroneous conclusions about firms whose different motivations required different behaviors.

Channel Setting Checks

Of critical importance to this research was the assurance that the controlled environment created by the parasimulation did indeed produce a reasonably realistic research setting. It was important for the parasimulation to foster typical organizational characteristics of the channel firms. Stern, Sternthal, and Craig (1973, p. 173) developed a questionnaire which indicates if members of contrived groups perceive themselves to be members of organizations. Seven critical attributes (functional differentiation, formal rules and policies, collective goals, communication and criteria for evaluation of communication, cooperative relationships and comradeship, an explicit hierarchical structure, and interdependency) of complex organizations as identified by Weick (1965) were measured (Appendix B). This questionnaire was used to determine if firm members did indeed perceive themselves to be members of an actual organization.

It was also of critical importance to this study that the poker chip product/market parasimulation actually formed a distribution channel. One method to determine if channels existed was to measure how well the poker chip industry met demand. Low levels of demand fulfillment would have implied that few, if any, channels had been developed, while high levels of demand fulfillment would have implied that channels had developed.

Another possible measure of channel formation was a ratio of contracts to contacts made. In early market periods when channel formation was beginning, the ratio should have been low because firms were acquainting themselves with suppliers, outlets, and competitors

and were also developing channel strategies. In later market periods, the ratio should have increased significantly because channels had been formed, and thus communication was concentrated with channel members.

A final measure of channel formation involved learning by firms. The amount of communication between two firms culminating in a contract should have been a function of experience gained by the firms in dealing with each other. In early market periods, the number of pieces of communication between firms that ended in a contract should have been significantly higher than the number in later market periods.

Summary

This chapter has dealt with: (1) describing the variables of the study, (2) the general approach to be taken in measurement, (3) the general relationships between the variables, and (4) choosing and describing the setting of the study. Building on this base, Chapter IV will discuss: (1) the actual methods of variable measurement, (2) the specific relationship between the variables, and (3) methods used for determining the degree of control obtained over possible confounding variables.

CHAPTER IV

MEASUREMENT OF VARIABLES, HYPOTHESES, AND METHODOLOGY

Overview

Chapter IV will present: (1) the measurement procedures for dependence, perceived dependence, perceived power, and perceived conflict; (2) the development of research hypotheses; (3) the experimental setting; and (4) other methodological considerations including statistical tests for hypothesis testing and statistical tests utilized in examining the extent of control provided.

Variable Measurement

Now that the major variables of this study have been delineated, the procedures for measuring the variables will be discussed.

Dependence

As we saw in Chapter III, measurement of the dependence variable breaks down into the measurement of benefits and costs of channel members. In order to obtain a dependence measure in a market period, it was necessary to have a record of all transactions between a company and its actual or alternative supplier or outlet and to know the net benefits (benefits-costs) associated with each transaction. In the parasimulation, this requirement was complicated because of the difficulty of tracing the revenues (benefits) and costs of each transaction. Since products were undifferentiated and companies could have inventory, it was not possible to tell who the chip was purchased from (this was

needed to determine cost) nor was it possible to determine who that chip was sold to (this was needed to determine revenue).

Alternatives. One possible solution would have been to place serial numbers on chips when "produced" and require channel members to record all chip serial numbers when bought and sold along with appropriate costs and revenues (benefits). This method would have provided the necessary cost and benefit data but would have required too much additional work for firms and might have hampered the functioning of the channel.

A second possibility would have been to use average cost and revenue (benefit) values for transactions in a market period. For example, in a period all purchase and sale data would be recorded for a company, and an average cost and revenue value per chip for the period would be calculated. The dependence measure would have been developed by using equation (4), page 81, and the average cost and revenue data. For each relationship with another firm, dependence would have been calculated using the quantities bought from or sold to and the average cost and revenue data. This average option would have provided the cost and revenue (benefit) data and would have allowed the channel to function more freely. However, this approach did not give an accurate measure of dependence. Because of the use of average values for revenues (benefits) per chip for all transactions by a firm in a market period, the dependence would be greatest on the firm which supplied (or bought) the largest volume to the firm. A firm may have sold less but at a price high enough to produce a larger amount of revenue. This would have been disregarded by the use of average price.

The use of average cost data would also have distorted the dependence measure by increasing the measured versus the real costs for a below average cost supplier and decreasing the measured versus real costs for a higher than average cost supplier.

A third possible option would have been to determine the actual (not average) cost and revenue associated with a chip. This approach required an assumption of the first in, first out (FIFO) accounting inventory convention, that the chip which had been in inventory the longest would be the next one sold. For example, company A has five white chips in inventory and purchases another from B for $5.00. When company A sells six chips, its sixth white chip will be assumed to have cost A $5.00. With this actual cost data and recorded information on sale price and quantity, equation (4), page 81, could be utilized, and a dependence measure calculated.

Measurement approach adopted. Of the three possible options for measuring benefits and costs, the third was utilized. This option was chosen because it would not interfere with the operation of the channel (necessary with option one above), and it would produce more accurate measures than option two. However, this required a more complex measurement task due to the necessity of determining the actual prices and costs on each transaction.

Now that the measurement method for the dependence variable has been selected, it was necessary to specify in detail how each benefit and cost in the parasimulation was measured. The discussion of this measurement task will focus only on the benefits and costs associated with the channel relations of manufacturers and retailers. The reason

for the elimination of wholesalers will be discussed in the next session.

Furthermore, it was advantageous to divide the discussion into two parts--one dealing with manufacturers and one with retailers. This dichotomy was necessary because of the nature of the tasks associated with the two types of institutions. Manufacturers obtained their benefits (sales revenue) within the dependence relationship, but retailers obtained their benefits (sales revenue) from outside the dependence relationship. This was true because the benefits that manufacturers obtained were the revenues which they received from other channel members (wholesalers or retailers). The benefits that retailers obtained were the revenues which they received from consumers (actually the central bank in the parasimulation) when the chips were sold.

Manufacturer's Dependence

The measurement of the dependence variable, when a manufacturer in the organization was being considered, is best developed by individually viewing each component of equation (4) as shown in Figure 7. Study of these components reveals that benefits and costs fall into two categories: (1) current and (2) potential.

Numerator--current benefits. In the numerator of equation (4) in Figure 7, both measurements of benefits consider only current benefits and were measured in similar manners. The current benefits which A (a manufacturer) could receive from an outlet (B or any other current outlet, i) would be the revenue obtained from the sale of chips. This sales revenue information was obtained from the negotiation record, which every firm was required to keep.

(4)

$$D_{ab} = \frac{\sum_{i \in T} \left[\begin{array}{l} \text{The benefits A} \\ \text{receives from a} \\ \text{relation with B} \end{array} - \begin{array}{l} \text{The costs A} \\ \text{incurs in} \\ \text{B's behalf} \end{array} \right]}{\sum_{K \in S} \left[\begin{array}{l} \text{The benefits A} \\ \text{receives from a} \\ \text{relation with K} \end{array} - \begin{array}{l} \text{The costs A} \\ \text{incurs in} \\ \text{K's behalf} \end{array} \right]} = \frac{\sum_{i \in T} \left[\begin{array}{l} \text{Revenue from} \\ \text{outlet B} \end{array} - \begin{array}{l} \text{(Production costs + Transportation costs +} \\ \text{Inventory carrying costs + Capacity} \\ \text{increase costs)*} \end{array} \right]}{\sum_{K \in S} \left[\begin{array}{l} \text{(Revenue from all current outlets + potential revenue from other outlets)} \\ \text{Revenue from} \\ \text{outlet B} \end{array} - \begin{array}{l} \text{(Production costs + Transportation costs +} \\ \text{Inventory carrying costs + Capacity} \\ \text{increase costs)***} \\ \text{(Production costs + Transportation costs +} \\ \text{Inventory carrying costs + Capacity} \\ \text{increase costs)*} \end{array} \right]}$$

(4a) (4b) (4c) (4d)

Figure 7. Manufacturer's dependence measurement.

Where T = The alternatives with which A currently has a relationship

S = The total set of alternatives available to A (including T)

*Incurred in dealing with B.

**Incurred in dealing with i.

***Incurred with current and potential outlets.

Numerator--current costs. Costs in the numerator of equation (4) in Figure 7 are those costs incurred with current relationships. Both costs can be measured in similar manners. Current costs which A (a manufacturer) could incur on the behalf of an outlet (B or any other current outlet, i) fall into four categories: (1) production costs, (2) transportation costs, (3) inventory carrying taxes, and (4) production capacity increase costs. These were the only costs possible in the parasimulation.

Since manufacturers in the parasimulation purchased their production from the central bank, costs of chips were obtained from the production order form, which was required by the bank before any chips were delivered. The accumulation of inventory by manufacturers complicated the measurement task somewhat. For example, a shipment of chips could contain chips purchased in different size production lots and, therefore, have different costs--economies of scale for production were possible in the parasimulation. In order to establish the production costs of all chips sold by manufacturers, sales records (past and current), inventory positions (past and current), and an assumption of first in, first out (FIFO) inventory accounting were required.

Transportation costs for manufacturers were obtained from the transportation negotiation record, used by all firms in dealing with the two transportation firms and from the transportation record kept by the transportation companies.

Each firm was taxed for the amount of inventory which it had at the end of each market period, therefore, inventory carrying costs had to be determined for each manufacturer. Inventory taxes, in effect,

increased the investment that a manufacturer (or firm, in general) had in those taxed chips. The task was then to attach these inventory tax costs to those chips and, thus, increase the cost of those chips to the manufacturer. This was done by using the inventory tax form to determine the cost increase and again assuming FIFO to determine which chips received the cost increase and to whom they were sold.

In order to increase their productive capacities and thus lower per unit costs through economies of scale, manufacturers could purchase capacity increases from the bank. The cost of this capacity increase must also be included and allocated in determining a manufacturer's costs. The task became one of attaching the cost of the increase to those chips produced during the first increased capacity production run. This was done using the capacity purchase order form (required by the bank) to determine the per chip cost of the increase and then adding that amount to the per unit cost of the production run. The determination of the buyer of these extra cost chips was made by knowing a manufacturer's inventory position, sales, and by assuming FIFO.

Denominator--current benefits and costs. Measurement of the variables in the denominator of equation (4), Figure 7, will now be discussed. The benefits and costs involved in the channel relations of a manufacturer that are measured by the denominator of equation (4) contain both current and potential benefits and costs. Equation (4d) is the same as equation (4a) whose measurement was previously discussed.

Equation (4c) contains both potential and current variables because the set of organizations S contain present and potential alternatives available to A. Measurement of the benefit and cost variables

in a current relation has already been discussed and will not be repeated; only the measurement of those potential benefits and costs will be discussed.

Denominator--potential benefits. The benefits that A would receive from a relation with K were measured by the sales revenue that would have been received from outlet K if the last offer of outlet K had been accepted by A. The last offer of K was chosen because it represented K's last known negotiating position. This information was obtained from the negotiation record kept by all firms.

Denominator--potential costs. The potential costs that A might have incurred in outlet K's behalf included: (1) production costs, (2) transportation costs, (3) inventory taxes, and (4) production capacity increase costs. These costs were attached to the manufacturer's chips that would have been sold if the last offer of potential outlet K had been accepted.

Potential production costs were calculated by determining which chips would have been sold to K. This was done by determining the manufacturer's inventory position at the time of the last offer from potential alternative K. The inventory position was determined by knowing: (1) the beginning inventory for the market period--from last period's ending inventory tax form, (2) current period production--from production purchase order, (3) chips sold up to the time of K's last offer--all negotiations and sales were recorded, along with their times, on the negotiation form, so the number of chips sold was calculated and then subtracted from beginning of the period inventory and

purchases in the period, and (4) the cost of all chips produced--from production purchase form and by assuming the first chip in inventory was also the first chip sold.

Transportation costs were calculated by assuming that transportation charges (if any) were the same as comparable shipments by the manufacturer in that market period. These data were available from the transportation negotiation record and the transportation record. The transportation record was a master log of all shipments kept by the transportation companies.

Inventory taxes were determined by knowing the inventory position of the manufacturer at the time of potential alternative K's last offer. This was calculated by knowing: (1) the beginning inventory position of the manufacturer, (2) the production purchases made in the current period, (3) the chips sold up to the time of K's last offer, and (4) the inventory tax per unit paid on last period's ending inventory (this period's beginning inventory). These allowed the determination of whether or not (and if so how much) inventory taxes were assessed on those chips that would have been sold to K.

Production capacity increase costs were determined by again establishing which chips would have been sold to K if K's last offer had been accepted and if any of those chips had been produced in the first production run after increased capacity had been purchased. If so, the capacity increase costs per chip $\left(\frac{\text{capacity increase cost}}{\text{number of chips produced}}\right)$ for all appropriate chips were summed to determine potential production capacity increase costs to alternative K.

Retailer's Dependence

Equation (4) as shown in Figure 8 reveals that there are current and potential benefits and costs that a retailer might generate with suppliers in a channel relation. Equation (4)'s numerator contains only current benefits and costs.

Numerator--current benefits. Current benefits which retailer A would have received from a supplier (B or any other current supplier) would be the revenue A obtained from the sale of those chips supplied by that supplier. This sales revenue information was obtained from the retail price list, which showed the amount and price which consumers paid for chips sold in a market period.

Retailer inventory accumulation required the attachment of revenues to the appropriate chips. This was done by calculating the retailer's inventory position during the period. This was determined by knowing: (1) past purchases (supplier and number of chips)--from past negotiation records, (2) current period purchases, and (3) current period sales (quantity and price). By assuming FIFO, it was possible to determine the number of chips from a certain supplier sold by a retailer. With this knowledge, plus the price per chip obtained by the retailer (from the retail price lists required of each retailer), the revenue (benefit) obtained from the sale of chips from a certain supplier was determined.

Numerator--current costs. Current costs that retailer A might have incurred on behalf of a supplier (B or any other current supplier) fell into three groups: (1) production costs, (2) transportation costs,

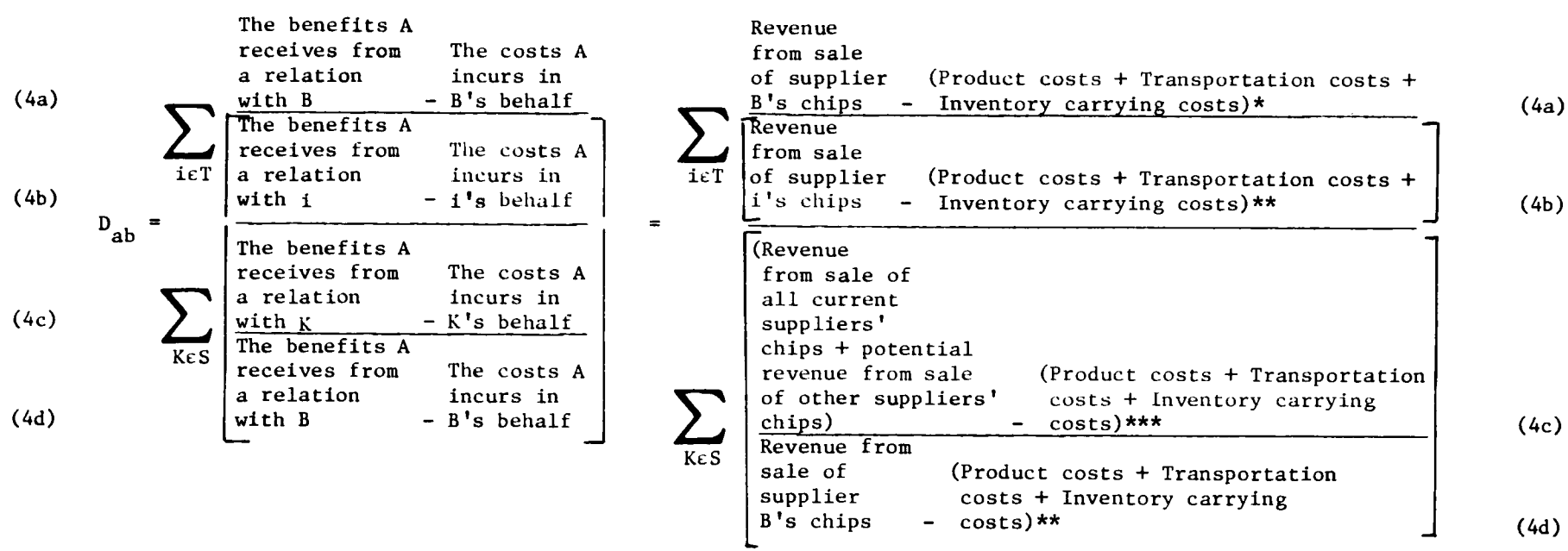


Figure 8. Retailer's dependence measurement.

Where T = The alternatives with which A currently has a relationship

S = The total set of alternatives available to A (including T)

*Incurred in handling supplier B's chips.

**Incurred in handling supplier i's chips

***Incurred in handling current and potential supplier's chips.

and (3) inventory taxes. All of these were determined by first knowing which supplier supplied each chip, as discussed above. Product cost for a retailer in the poker chip product/market was the price which the retailer paid a supplier. This amount was determined from the negotiation record. Transportation costs to the retailer were obtained from the transportation report kept by the transportation companies. Inventory tax costs, which were assessed on a retailer's inventory at the end of a market period, were determined from the inventory tax form which each firm submitted each period.

Denominator--current benefits and costs. Variables in the denominator of equation (4), Figure 8, were of both a current and potential nature. Equation (4d) is the same as (4a) whose measurement has previously been discussed and as a result will not be duplicated. Equation (4c) contains both current and potential benefits and costs because the set of organizations S contains both current and potential suppliers. The measurement of the benefits and costs from current suppliers was measured in the same manner as current suppliers in equation (4)'s numerator.

Denominator--potential benefits. Potential benefits that A would have received from a relation with K were measured by the sales revenue that would have been received from consumers if the last offer of supplier K had been accepted by A. This was done by noting the time of the last offer by K and then assuming that quantity of chips would have been added to A's inventory at that time. As A's inventory was depleted by consumer sales in that market period, those potential chips

from K would be sold (assuming FIFO), and the amount that would have been sold times the selling price of that period equaled the potential benefits A would have received.

Denominator--potential costs. Potential costs which A might incur in supplier K's behalf included: (1) product costs and (2) transportation costs. Cost of each chip on K's last offer was determined from the negotiation record, and with the knowledge of the number that would have been sold (discussed above under potential benefits), product costs were calculated. Transportation costs were measured from A's transportation negotiation form. The potential charge was developed by multiplying the potential number of chips sold by the freight rate negotiated by A for comparable shipments in that market period.

Perceived Dependence

The perceptual measurement of dependence used was specifically developed for this study. Only El-Ansary and Stern (1972) and Etgar (1976) attempted to perceptually measure dependence in marketing channels. Neither of their approaches was chosen because of certain problems in each.

El-Ansary and Stern used Emerson's dependence concept as a base, but the measurement approach formed a dependence score by summing the items that looked at importance and availability. Emerson's conceptualization called for a ratio approach using benefits and availability, not a summing approach. Etgar's perceptual approach only measures the availability of other alternatives and thus does not consider the level of goal accomplishment available from the current alternative. This

was not deemed as an appropriate type of measure for this study.

Two questions were used to measure perceptual dependence (Appendix C). The first question in Appendix C attempted to measure both components (motivational investment and availability) simultaneously. This was done by asking the respondent to judge the effect on his firm's goal achievement if the alternative of interest were removed from the channel. The second question in Appendix C attempted to measure dependence by directly asking the respondent to judge the level of dependence. Since students had been exposed to this concept in class, it was deemed to be appropriate to ask the question in a direct manner.

Perceived Power

Perceived power was measured in a manner similar to those approaches used in the channel literature. These approaches usually assessed one firm's ability to change or control the marketing decisions of another. A level of power is said to exist to the extent that the other firm's marketing decisions are successfully changed or controlled by the first. For example, Etgar (1977) assessed the power of suppliers over retailers using a semantic differential approach.

One of the marketing decisions he focused on was pricing. One end of the scale contained the phrase "You are required to follow the retail price list set up by your supplier." The other end of the scale was anchored by the phrase "You set your own prices--the supplier does not intervene" (p. 72). Retailers assessed the power of the supplier over them by checking the appropriate position on the 7-point scale.

In the parasimulation environment, the major marketing decisions of firms were concerned with price, quantities, and overall channel

strategy issues, such as sharing market information and consignment selling. Three questions were used to assess the degree of success that firms had during negotiations over these marketing decisions. The first question (3, Appendix C) looked at price and quantity decisions, while the second question (4, Appendix C) looked at overall channel strategy. A final question (5, Appendix C) measured perceptual power by obtaining a global measure of success in all aspects of negotiation.

The final power measure (6, Appendix C) also attempted to globally assess power. To try to make the concept clear in the mind of the respondent and to gain some level of uniformity across respondents, this question contained a definition of power.

Perceived Conflict

Perceived conflict was measured using a semantic differential structured questionnaire based on a questionnaire developed by Stern, Sternthal, and Craig (1973, p. 175). The original questionnaire contained 27 items. The length of this portion of the questionnaire combined with the perceived dependence and power section would have resulted in a rather lengthy instrument. Respondent's consistency (reliability) in answering a questionnaire of such length was highly questionable. In order to counteract this problem, the conflict questionnaire was shortened. The reduction method was done by obtaining a factor analysis of the questionnaire from the original authors (Appendix D) and then developing a global semantic differential item for each factor. Four questions were developed (questions 7 through 10, Appendix C). Each question was used as a separate indicator of conflict.

Posttest of Questionnaire

Although the typical approach would have been to pretest the questionnaire before using it to gather data, this was not done. Due to the late development of the questionnaire and the need to conclude this project, the questionnaires were administered without being pretested. However, in an effort to discover the appropriateness of the questionnaire, a posttest approach was used. After the respondents were administered the questionnaire, a group of them were gathered, and the questionnaires were discussed to determine if the items were understandable and that they measured what the researcher desired. Results of this interview process were positive, and the data gathered were utilized.

Time of Collection

All measures for dependence, power, and conflict were taken during or after the last market period. Although information needed to develop the operationalized dependence measure was available for every period, the other measures were not. The perceptual measures dependence, power, and conflict) could not be taken at the end of every market period because of the potential bias caused by the questionnaires (testing effect). If respondents became aware of variables and relationships sought by this study, they might have displayed atypical behaviors. Therefore, since the relationships among the variables (dependence, power, and conflict) were investigated, it was necessary to consider only those variable measurements taken from the last period.

Description of Experimental Setting

This section will describe: (1) the key independent (or experimental) variable, (2) variable relationships to be investigated by the study, and (3) other independent variables and control measures.

As mentioned earlier in the dependence measurement section, this study focused upon manufacturers and retailers in the poker chip product/market. Wholesalers were not a unit of interest because the Cadotte and Stern model of interorganizational dependence is dyadic in nature, and wholesalers had a triadic relationship with manufacturers and retailers.

Channel Structure

The major independent variable (experimental variable) was that of the structure of the channel. Channel structure here meaning the number of potential relationships (suppliers or outlets) that was available to a channel member. In order to understand the importance of the number of potential alternatives, it is necessary to briefly review the relationships which this experimental variable has with dependence, perceived dependence, perceived power, and perceived conflict.

Channel structure and dependence. One of the main determinants of dependence, as identified by the literature and as indicated by the Cadotte and Stern model of dependence, was the number of potential alternatives, outlets, or suppliers that an organization possesses. An organization with relatively more alternatives will be less dependent on those alternatives than if the organization had relatively fewer alternatives.

Perceptual dependence should display characteristics similar to that of the dependence measure. Firm members should feel less dependent on suppliers or outlets when there are relatively more suppliers or outlets available.

Both measures of dependence should be highly associated if they are tapping the same concepts. Measures of dependence on the same firms should be highly associated. Measures of dependence on firms with the same number of potential alternatives should also be highly associated.

Channel structure and power. Emerson's (1962) theoretical foundation identified power as the obverse of dependence. The power that party A has over party B is dependent on the level of dependence which B has on A. If B has no dependence on A, then A has no power over B. The power attributed by a firm to another would be an inverse function of the number of alternatives available to the first. The greater the number of alternatives available, the less the dependence, and, thus, the less the perceived power attributed to the alternatives.

Channel structure and conflict. Perceived conflict is also a function of the dependence level between two organizations. The greater the dependence, the greater the amount of conflict perceived by the organizations. Therefore, the lesser the number of alternatives, the greater the dependence, and, thus, the greater the level of conflict perceived by the firms.

Additional Independent Variables

Other independent variables that will be discussed include: (1) the institutional structure of the poker chip industry, (2) subjects

composing "firms," and (3) economic environment of the parasimulation.

Institutional structure. The institutional structure of the poker chip industry was that of 13 "firms" (4 manufacturers, 3 wholesalers, and 6 retailers). It could have been possible that the nature of the industry structure produced the levels of dependency measured not the number of potential alternatives. In order to determine if this were the case, the parasimulation was carried out twice with slightly different operating rules. In one parasimulation operation, manufacturers were forced to deal only with wholesalers. This forced condition allowed manufacturers only three potential outlets and retailers only three potential suppliers.

In the other operation, manufacturers were allowed to deal openly with retailers if they desired. In this open condition, manufacturers had nine potential outlets and retailers had seven potential suppliers. These relationships are represented by Table 1 below.

Table 1. Experimental variable.

	Channel Structure	
Firm Type	Forced (High Dependence)	Open (Low Dependence)
Retailer	3 alternatives	7 alternatives
Manufacturer	3 alternatives	9 alternatives

By expanding Table 1 and combining it with the characteristics of the dependence, power, and conflict variables, Table 2 was developed.

Table 2. Hypothesized levels of variables by firm type and channel structure.

Firm Type	Channel Structure: Forced (High Dependence)	Channel Structure: Open (Low Dependence)
Retailer	High dependence	Low dependence
	High perceived dependence	Low perceived dependence
	High perceived power	Low perceived power
	High perceived conflict	Low perceived conflict
Manufacturer	High dependence	Low dependence
	High perceived dependence	Low perceived dependence
	High perceived power	Low perceived power
	High perceived conflict	Low perceived conflict

Table 2 provided a springboard for developing possible specific relationships (hypotheses) among the various variables. These possible relationships will be presented in the next section after the other independent variables are discussed.

Subjects. The third independent variable was that of subjects. Subjects in the parasimulation were students. Students in the parasimulation were undergraduate business students who took a marketing channels course at The University of Tennessee, Knoxville, during the winter and spring quarters of 1979. Students from two quarters were used because of the desire to have forced and open conditions and to give the students time to become familiar with the operation of the parasimulation. Approximately 150 students comprised 28 "firms." Students were randomly assigned to teams, and teams were randomly assigned to positions as to firm type.

To insure that the effects measured were not based on the differences in students from one quarter to another, two control checks were used. First, the time of day of the classes used to obtain students needed to be similar in both quarters. By similar, it is meant that all classes used must have met between either 9:00 a.m. to 3:00 p.m. or before 9:00 a.m. and after 3:00 p.m. The early and late classes were more likely to contain older, working students who could behave differently than the typical student (9:00 a.m. to 3:00 p.m. classes).

Second, since students came from marketing channels courses, the level of student learning must be considered. All classes were taught by the same instructor who attempted to present similar materials and use similar teaching techniques in both terms. To assess the student

end of the teaching--learning situation--student test scores were compared from one quarter to the other. The tests from each quarter were multiple choise and contained the same test items.

Economic environment. The last independent variable was that of the economic environment of the two parasimulation operations. The changes in the independent variables could have been attributed to differences in the economic environment of the two parasimulations. The main influence in determining the general economic environment in the parasimulation was consumer demand. Consumer demand was determined by the parasimulation director through the use of two dice. In the first parasimulation, all consumer demand determinations were made by actual use of the dice. Numbers appearing on the dice were recorded and used in the second parasimulation. The director rolled the dice, in the second instance, but he called out those numbers appearing in the first parasimulation. The general economic environment was then the same.

Hypotheses

This section presents hypotheses developed from Table 2, which provided the testing of the various variable relationships necessary to reach this research effort's objectives. Hypotheses are divided into dependence, perceived dependence, power, and conflict classifications.

Dependence hypotheses will be presented in two groups: operationalized and perceptual.

Dependence hypotheses:

D_{1A} In the open condition, the level of dependency on wholesalers will be significantly lower for manufacturers than for retailers.

D_{2A} In the forced condition, the level of dependency on wholesalers will not be significantly different for manufacturers than for retailers.

D_{3A} Manufacturers in the forced condition will be more dependent on their outlets (wholesalers) than manufacturers in the open condition are dependent on their outlets (wholesalers and retailers).

D_{4A} Retailers in the forced condition will be more dependent on their suppliers (wholesalers) than retailers in the open condition are dependent on their suppliers (wholesalers and manufacturers).

Perceptual dependence hypotheses:

D_{1B} In the open condition, perceived dependence on wholesalers will be significantly lower for manufacturers than for retailers.

D_{2B} In the forced condition, perceived dependence on wholesalers will not be significantly different for manufacturers than for retailers.

D_{3B} Manufacturers in the forced condition will be perceived to be more dependent on their outlets (wholesalers) than manufacturers in the open condition are perceived to be dependent on their outlers (wholesalers and retailers).

D_{4B} Retailers in the forced condition will be perceived to be more dependent on their suppliers (wholesalers) than retailers in the open condition are perceived to be dependent on their suppliers (wholesalers and manufacturers).

In addition to the above dependence hypotheses, the operationalized dependence measure and the perceptual dependence measures were correlated to determine their degree of association. In each condition (forced and open), the measures of dependence were correlated for manufacturers and then retailers.

Power hypotheses:

P_1 Perceived power of a wholesaler by an outlet (retailer) in the forced condition is significantly greater than perceived power of a wholesaler by an outlet (retailer) in the open condition.

P_2 Perceived power of a wholesaler by a supplier (manufacturer) in the forced condition is significantly greater than the perceived power of a wholesaler by a supplier (manufacturer) in the open condition.

P_3 In the forced condition, the perceived power of a wholesaler by a retailer is positively associated to the dependence of a retailer on his wholesalers.

P_{3B} In the forced condition, the perceived power of wholesalers by retailers is positively associated to perceived dependence of retailers on wholesalers.

P_{4A} In the forced condition, the perceived power of wholesalers by manufacturers is positively associated to the dependency of manufacturers on wholesalers.

P_{5A} In the open condition, the perceived level of power of wholesalers by manufacturers is positively associated to the dependency of manufacturers on wholesalers.

P_{5B} In the open condition, the perceived level of power of wholesalers by manufacturers is positively associated to the perceived dependence of manufacturers on wholesalers.

Conflict hypotheses:

C_1 In the forced condition, the level of perceived conflict by manufacturers with their outlets (wholesalers) will not be significantly different than the conflict level perceived by retailers with their suppliers (wholesalers).

C_2 In the open condition, the level of conflict as perceived by manufacturers with their outlets (wholesalers and retailers) will be significantly lower than the conflict level perceived by retailers with their suppliers (wholesalers and manufacturers).

C_3 Perceived conflict by retailers with their suppliers (wholesalers) in the forced condition is significantly greater than conflict perceived by retailers with their suppliers (wholesalers and manufacturers) in the open condition.

C_4 Perceived conflict by manufacturers with their outlets (wholesalers) in the forced condition is significantly greater than the level of conflict perceived by manufacturers with their outlets (wholesalers and retailers) in the open condition.

Hypothesis Test Statistics

With regard to test statistics, the hypotheses of the study were broken into two groups. One group of hypotheses required a comparison technique. The other group required an association technique.

Comparison. The dependence, perceptual dependence, and conflict hypotheses required a comparison technique. Power hypotheses P_1 and P_2 also required this type of statistical test. Since the *t* test has several important assumptions which must be met before the test will provide useful results, it was not used for any of the comparison-type hypotheses. Those assumptions include: (1) independent observations, (2) normally distributed populations, (3) equal population variances, and (4) at least intervally scaled variables (Siegel, 1956, p. 19). The dependence hypotheses did not qualify because of the lack of knowledge about the population distribution. The perceptual dependence, power, and conflict variables were not intervally scaled and thus did not meet the *t* test's assumptions. In addition, the types of distributions of these variables were also unknown. The Mann-Whitney *U* test was used since it did not require the stringent assumptions that the *t* test required and, according to Siegel (1956, p. 126), is an excellent alternative.

Association. The hypotheses which required the assessment of the relationship between two variables were hypotheses P_{3A} through P_{5A} and P_{3B} through P_{5B}. Also, the assessment of the relationship between the two measures of dependence required an associational technique. The most common measure of association is the Pearson

product-moment correlation coefficient. This technique requires that the variables be of at least an interval scale. None of the hypotheses met this requirement. Instead, the nonparametric Kendall's Tau statistic was used. This statistic was preferred over the Spearman r because it is more appropriate when a large number of ties appear in the data. Table 3 contains a summary of the statistical tests used for the various hypotheses.

Control Test Statistics

Control tests will be discussed by looking at organizational perception, contract success ratio, the learning measure, and class tests.

Organizational perception. The organizational perception control measure sought to show that there was no significant difference between the students' perception of being an organization member in the two academic quarters and that firm members perceived themselves to be actual organization members. This comparison task used ordinally scaled data and required the use of the Mann-Whitney U test. Determining if students perceived themselves to be organization members was somewhat complicated as Stern, Sternthal, and Craig note:

> no objective criterion was available to determine whether an organization exists in a laboratory setting. Failing, an absolute measure, it was assumed that a hypothetical basal group would neither agree or disagree with any of the twenty-three statements. (1973, p. 173)

Therefore, following along with the above reasoning, responses of this basal group were compared with the parasimulation firm members' responses on the 23-item, 7-point Likert scales.

Table 3. Statistics used in hypothesis testing.

Hypothesis	Task	Statistical Test
D_{1A}	Comparison	Mann-Whitney U
D_{1B}	Comparison	Mann-Whitney U
D_{2A}	Comparison	Mann-Whitney U
D_{2B}	Comparison	Mann-Whitney U
D_{3A}	Comparison	Mann-Whitney U
D_{3B}	Comparison	Mann-Whitney U
D_{4A}	Comparison	Mann-Whitney U
P_1	Comparison	Mann-Whitney U
P_2	Comparison	Mann-Whitney U
P_{3A}	Association	Kendall's Tau
P_{3B}	Association	Kendall's Tau
P_{4A}	Association	Kendall's Tau
P_{4B}	Association	Kendall's Tau
P_{5A}	Association	Kendall's Tau
P_{5B}	Association	Kendall's Tau
C_1	Comparison	Mann-Whitney U
C_2	Comparison	Mann-Whitney U
C_3	Comparison	Mann-Whitney U
C_4	Comparison	Mann-Whitney U

Contract success. To determine if the channel had settled down from the beginning of the parasimulation and had begun to operate more normally, the ratio of negotiated contracts to contacts made was developed. Contacts were measured by counting the number of firms contacted for all manufacturers, wholesalers, and retailers in the first and last market periods. A negotiated contract was the average number of successfully concluded contracts for all manufacturers, wholesalers, and retailers in the first and last market periods. The ratios were then calculated and compared. The Mann-Whitney U was again utilized.

Learning. To determine if the firms learned to operate more effectively in the channel, a comparison was made between the number of communications needed to successfully conclude a contract in the first and last market periods. Communication was the number of times the average firm (manufacturer and retailer) communicated to another firm on the negotiation memo form that resulted in a successfully negotiated contract. The Mann-Whitney U statistic was utilized.

Class tests. The class test control measure attempted to show that there was no significant difference in student's knowledge of marketing channels from one academic quarter to another. A mean score on each class test was developed for each term and then compared. The test score means were ratio scaled, had equal variance, and were independently drawn samples; thus, the t test was used.

Summary

This chapter has presented the basic methodological considerations of the study. Measurement of variables, research hypotheses, and

other methodological concerns were discussed. From this foundation, the next chapter (Chapter V) will discuss the results of the tests of the various hypotheses.

CHAPTER V

RESULTS AND ANALYSES

Introduction

Now that the purposes, development, and methodology of the study have been discussed, this chapter will present and analyze the results of the study. Section one will present and discuss the results of the checks on channel setting development and control of independent variables. Section two will present and discuss the results of the major hypotheses of the study.

Channel Setting Development and Control

This section of the chapter will discuss the development of the channel in the parasimulation environment and the control of certain independent variables. It was important to determine if the parasimulation was successful in creating a relatively good abstraction of an actual marketing channel and if the channel organizations exhibited typical channel behaviors.

Channel Setting

The development of the channel environment was measured by four methods: (1) organizational perceptions of firm members, (2) the extent to which the marketing channels satisfied demand in the poker chip product/market, (3) the bargaining behavior of the firms, and (4) content analysis of each firm's final report. The first measure primarily focused on intraorganizational aspects, while the second, third, and

fourth looked at interorganizational aspects of the firms in the parasimulation.

Organizational perceptions. Following the approach used by Stern, Sternthal, and Craig (1973), student perceptions on 23, 7-point Likert questions were compared with a hypothetical basal group who neither agreed nor disagreed with the statements about organizations. It should be noted that the level of statistical significance used for all tests was alpha = .05.

In the open condition, approximately 75% (77 out of 99) of those participating in the parasimulation provided responses to the organizational perception instrument. Results of the Mann-Whitney test showed that the open condition firm members perceived themselves to be significantly different ($p < .05$) than the basal group on 21 of the items (Appendix B for the questionnaire and Table E-1, Appendix, for the test results). Nineteen of these 21 significant differences were in the direction of perceiving one's self to be in an organization. For example, question 22 showed a significantly greater feeling of comradeship among the firm's member than the basal group.

Items 12 and 20 showed significant differences from the basal group but not in the desired direction. Item 12 was concerned about the president's position in the hierarchical structure of the organization. Firm members perceived themselves to have more say in the decisions of the firm than did the president. Item 20 used the value of the president to the firm to determine if the firm's members perceived functional differentiation within the firm. Open condition firm members felt they could have gotten along without a president.

The first of the two nonsignificant items was question 23, which concerned the hierarchical structure of the organization. The one-tailed p for this question was .264.

The other nonsignificant item was question 17 which assessed the communication network within the organization. The one-tailed p for this question was .07. The other two items which looked at the communication characteristic were significant and in the direction of organizational perception. In general, the open condition firm members did perceive a significant development of communications within their organizations.

One of the nonsignificant items and the two significant anti-organization items all concerned the job of president within the firms in the open condition. One possible explanation for the ineffectiveness of the president might come from the method of selection used by the firms. If the most popular person or most domineering person were chosen and then that person failed to provide adequate leadership to the firm, firm members might look to themselves or another more capable firm member. If this were the case, then the president would have been president in name only. Open condition firms, then, did not have an explicit hierarchical structure between the formal president and the rest of the firm members.

With respect to the functional differentiation characteristic of organizations, the open condition members perceived their firms to be more functionally differentiated than the basal group on the other four items which measured this variable (questions 1, 6, 10, and 19). Functional differentiation can be said to be present in the open condition firms.

Therefore, the open condition firm members perceived themselves to be more like members of an organization with respect to functional differentiation, formal rules and policies, collective goals, communication, and criteria for evaluation of communication, cooperative relationships and comradeship, and interdependency than did the hypothetical basal group.

In the forced condition, approximately 81% (64 out of 77) of those students participating in the parasimulation provided responses to the organizational perception questionnaire. The Mann-Whitney test showed that 20 of 23 questions were significantly different ($p < .05$) than the hypothetical basal group (Table E-2, Appendix). All of these significant items were in the direction appropriate for indicating the perception of an organization.

There were three nonsignificant items. Item 8 which concerned profit maximization as a goal of the organization was one of the nonsignificant items. However, the three other questions (numbers 3, 5, and 14) that measured organizational goals were all significant in the desired direction.

The second nonsignificant question was number 12 which sought to determine if an explicit hierarchy were perceived in the organizations by focusing on the job of president. The other two items which measured this characteristic of organizations (items 15 and 23) did find that the forced condition members did perceive significantly more of an explicit hierarchy than did the basal group.

The final nonsignificant item concerned the office of the president. This was item 20 which assesses functional differentiation

within the organization. This nonsignificance could, as in the forced condition, be attributed to the method of selection of the president. Even though this item was not significant, the four other items (1, 6, 10, and 19) which measured this organization attribute did show significant differences.

In summary, the forced condition team members appeared to perceive themselves to be members of organizations based on the seven critical characteristics of organizations measured by the Stern, Sternthal, and Craig questionnaire.

A direct comparison of the organizational perceptions of open and forced condition team members revealed some statistically significant differences (Table E-3, Appendix). The first organizational characteristic which showed significant differences was in the area of formalized rules. For one of the items which measured this variable (number 2), the open condition members perceived a less formalized rule structure, based on the firm's members' understanding of its rules.

The second organizational characteristic which revealed significant differences was functional differentiation. Two of the five questions (numbers 6 and 10) which measured this characteristic showed that the forced condition team members perceived more functional differentiation than did the open condition members.

The final significant perceptual difference in the organizations concerned their explicit hierarchies. One of the three questions (number 23) showed a significant difference between the groups. Marketing researchers were perceived as having less say in the open condition firms, while salesmen were perceived as having less say in the forced condition.

One plausible reason could be responsible for the significant differences discovered concerning formalized rules and functional differentiation. During most of the nights on which the parasimulation was conducted, the size of the groups in the open condition was about seven, while in the forced condition, the teams averaged between four and five. The larger size of the groups in the open condition could have made the job of managing the groups more difficult. Coupling this with ineffective leadership (the president) would have produced a less formalized rule structure and less well-defined tasks for each team member.

In summary, the organizational perception checks revealed that both open and closed condition firm members perceived themselves to be members of organizations. Although the direct comparison of both conditions did reveal some significant differences in the firms in the two conditions, the differences did not greatly affect the study. Both conditions' firms were significantly perceived to be more like organizations than the hypothetical basal group. The hypothetical basal groups' responses were all the same on every question--neither agree nor disagree. On all four of the significantly different items revealed in the open versus forced analysis, the differences occurred on the side of the scale which indicated the perception of an organization--between the basal group's response and the end of the scale.

In addition, each nonsignificant item was only part of multiple items which assessed an organizational characteristic. For example, in the functional differentiation characteristic, three of five items were not significantly different. Two of three items which measured the explicit hierarchy were not significant. Finally, one of two variables

dealing with formal rules and policies was not significant. Then, generally, even the items which showed significant differences between the two conditions did not reflect the findings of the majority of questions which attempted to assess that organizational attribute.

Channel development checks. Channel development checks were necessary to determine if actual marketing channels did develop during the parasimulation.

Demand. The first development check concerns how well retail firms were able to satisfy consumer demand. This is a direct measure of how well the channel carries out its necessary function (production, transportation, risk taking, pricing, and sales forecasting). Figure 9 shows the percentage of demand that was satisfied per period for both the open and forced conditions. Although the demand for white chips is the least well satisfied in both conditions, this is probably due to the volatile nature of these "cheap, imported" chips. Generally, the channels in both conditions adequately satisfied consumer demand for poker chips.

Bargaining behavior. A second group of channel development checks concerned the bargaining behaviors of the firms. The first check looked at the ratio of contracts to contacts to gauge the extent of channel learning by channel organizations. In the open condition, the ratio of contracts to contacts in period one was significantly lower (alpha = .05, n = 15) than the ratio of contracts to contacts in period seven. In the forced condition, the ratio from the first period was not significantly lower (alpha = .127, n = 19) than the ratio of

Period	Chip Color	Open	Forced
1	Blue	90%	86%
	Red	92%	83%
	White	69%	84%
2	Blue	100%	100%
	Red	90%	100%
	White	70%	85%
3	Blue	92%	100%
	Red	100%	92%
	White	71%	89%
4	Blue	90%	100%
	Red	97%	100%
	White	94%	96%
5	Blue	77%	93%
	Red	83%	89%
	White	61%	91%
6	Blue	93%	100%
	Red	98%	85%
	White	83%	88%
7	Blue	88%	91%
	Red	85%	95%
	White	93%	100%

Figure 9. Percentage of demand satisfied per period.

period seven. It appears, then, that only channel organizations in the open condition did learn and narrow down their number of alternative contacts they made as the parasimulation progressed and channels were formed.

Another channel development check which concerned negotiation learning looked at the ratio of contacts between two firms needed to bring about a contract. In the open condition, the ratio in period one was significantly greater (alpha = .0095, $\underline{n}$ = 29) than the ratio in period seven. In the forced condition, there was no significant difference (alpha = .0918, $\underline{n}$ = 35) between period one's ratio and period seven's. This channel development check was, therefore, inconclusive, with the open condition showing the hypothesized learning behaviors, while the forced did not.

Content analysis. The final method of determining if channels were developed was by studying student reports. These reports were prepared by students as a summary of the parasimulation for their respective firms. Content analysis revealed that most firms in both conditions were actively involved in a channel arrangement. Some even had formal contracts signed by the president of the member firms. The contracts contained clauses which required cash payments by members who broke the contract and left the channel.

Summary. In general, it can be said that the parasimulation was successful in creating a channel setting that was a reasonable facsimile of a real life marketing channel. The parasimulation was successful in developing intraorganizational situations that generally reflected the characteristics of formal organizations.

The parasimulation was also successful in reasonably developing external environments in which marketing channels were formed. The predicted interorganizational behaviors in channel development were only evident in the open condition, however.

Control of Independent Variables

This section will discuss the control of three independent variables which could have confounded the results of the study. These possible confounds fall into two categories: (1) teaching and (2) learning.

Teaching. Since students reacted to the parasimulations based to some degree upon their knowledge of marketing channels and their operation, it was important that the content of the marketing channels course be as similar as possible from one academic session (open condition) to another (forced condition). The instructor attempted to avoid varying the course from the winter to spring quarters, although some minor variation was probably present due to differences in student questions and discussions of those questions.

Learning. The learning group of confound controls was basically interested in determining if there were any significant differences in students and the amount of learning from one session to another. The first control concerned the types of students in each of the conditions. In both conditions, the time of the class meetings was basically the same (the first class period after noon). This class meeting time was an indication that the students in both conditions were full time, "typical" students. This similarity in class meeting time was necessary

in order to prevent having different types of students (part time versus full time) in the different conditions. Students needed to be either mostly full time or part time in both conditions.

The final student learning control concerned the scores of students on the exams given in the marketing channels course. To determine if there was a significant difference between the open and forced condition subjects on the two tests given in the course, a comparison was made using the t test. Results (Table E-4, Appendix) showed no significant differences between the open and forced subjects' scores on either test.

The results of this portion of the study showed that it was successful in developing reasonable abstractions of two industries in which marketing channels formed and operated. The two industries (open and forced conditions) did not differ significantly on several independent variables. These independent variables were examined because of their potentially confounding effects on the results of the study.

Results of the Study

This portion of the chapter will present the results of the statistical tests used to test the hypotheses of the study. Each group of hypotheses (dependence, perceptual dependence, association, power, and conflict) will be discussed separately. Since many of the hypotheses within each group are similar in nature, they will be discussed together. Due to the multiple item approach used to measure most variables and the monotony of discussing each item in each hypothesis tested, a summary method of presenting each hypothesis was

used. Complete information, including sample size and probability level, for each item of each hypothesis is presented in table form. Finally, summaries of the raw data for each condition and variable are presented in table form. Finally, summaries of the raw data for each condition and variable are presented in Appendix G.

Dependence Hypotheses

The purpose of dependence hypotheses D_{1A} through D_{4A} was to test the operationalization of the Cadotte and Stern model of interorganizational dependence. Based on the number of potential options as developed by the forced and open conditions, these hypotheses compared the levels of dependence between types of firms as a method of determining if the operationalized model could predict dependency levels.

Importance. These hypotheses were the central thrust of the study. The validity of the operationalization hinged to a large extent upon the results of tests of these hypotheses. They were also important to the rest of the study, as they were used to develop all the other hypotheses in the study. Failure to establish the desired levels of dependence, as measured by the model, would cause the rest of the hypotheses to produce results which could be counter to those predicted.

Results. Due to the importance of these hypotheses, somewhat more detail was given in discussing these results than was given to some other hypotheses in the study. Results of the Mann-Whitney tests generally did not support the hypothesized relationships (Table 4). Two of the four hypothesized relationships (D_{3A} and D_{4A}) showed no significant differences in the levels of dependence as measured by the

Table 4. Mann-Whitney U's and levels of significance for dependence hypotheses.

Hypothesis	n	U	Significance
D_{1A}	15	7.5	.05*
D_{2A}	17	21.5	.216
D_{3A}	8	3.5	.133
D_{4A}	26	81.5	.499

*Significant at $p \leq .05$

operationalized model. Hypothesis D_{1A} showed a significant difference in the levels of dependence but in the opposite direction than was hypothesized. Open condition manufacturers were more dependent on their outlets than were open condition retailers on their suppliers, even though the manufacturers had more potential alternatives than did the retailers (nine versus seven). Only hypothesis D_{2A}, which predicted no difference in dependence, was supported by the statistical test.

Implications. Based on these results, several implications were possible. First, the most obvious reason for a lack of support for the dependence hypotheses was that the model as operationalized by the study was invalid. The model did not represent the actual variables and interrelationships that constituted interorganizational dependence in marketing channels. Although this was the most obvious cause, it was also the least rewarding from a research standpoint and the most distasteful from a researcher standpoint. However, before this cause is selected, other potential causes must be examined.

A second possible cause of the dependence results was that the model did not measure the most relevant goals of the channel organizations. Although the parasimulation attempted to develop profit maximization as the chief goal of each firm, firms could have developed other goals which were at least as important as profit. If this were the case, then the model would have measured only a small component of the net benefits that constitute dependence. Some support for this possibility was found in the reports written by student teams. Many firms noted that they attempted to establish relationships with other firms to reduce the confusion which resulted during the first night of both

parasimulations. A few firms even stated in their reports that they were pursuing this goal to the extent that they would settle for a more calm relationship even if it were less profitable. Then for at least a few firms, profit maximization was not the most important organizational goal.

A final possibility that could have caused the general rejection of the dependence hypotheses has to do with the perception of the options potentially available to each firm. Consumer behavior research has shown that consumers tend to perceive only a small percentage of potential brands of products (Wilcox and Jarvis, 1974). This subset of brands is called an evoked set. It is possible that the firms did not actively consider all the possible options, i.e., the number of potential options as specified by the open and forced conditions were not the same as the evoked sets used by each firm. If this occurred, the hypotheses generated would not have been appropriate. Even if the predicted relationships between the number of options and the level of dependence were true, the hypotheses would be rejected. Of the three possible causes for the rejection of the dependence hypotheses, this evoked set idea seemed the most plausible cause. To determine if this were a correct assumption, the data will be reanalyzed later in the chapter. This reanalysis will use the relative size of the evoked set of options of each firm as the experimental variable instead of the number of options as determined by the forced and open conditions.

Perceptual Dependence Hypotheses

The purpose of the perceptual dependence hypotheses (D_{1B} through D_{4B}) was to determine if the experimental variable (the number of

potential alternatives available) also produced levels of perceived dependence as predicted by the Cadotte and Stern model.

Importance. Importance of the perceptual dependence hypotheses was based on their ability to reinforce the operationalized model of interorganizational dependence by supporting its predictive capabilities.

Results. The results of the Mann-Whitney tests on the perceptual dependence hypotheses (Table 5) are similar to those of the dependence hypotheses previously discussed. Two of the hypotheses (D_{3B} and D_{4B}) failed to show any significant differences in the perceived levels of dependence. Hypothesis D_{1B} showed, as did D_{1A}, a significantly different level of perceived dependence but in the direction opposite of that predicted. Hypothesis D_{2B} provided the only positive results in this group of hypotheses by showing that there was no difference in the perceived levels of dependence.

Implications. This failure could have two potential causes. A possible cause of the failure of the perceptual dependence hypotheses to be supported could have been the measurement of perceptual dependence. As noted in Chapter IV, past methods of measuring were not deemed appropriate, and new items were developed. It is possible that these new items did not provide a valid measure of perceptual dependence. A second possible cause for these results was that of how firms perceived the number of potential alternatives available to them. This possibly is the concept of an evoked set, which was offered as a possible cause of the general lack of support for the dependence hypotheses.

Table 5. Mann-Whitney U's and levels of significance for perceptual dependence hypotheses.

Hypothesis	Variable	n	U	Significance
D_{1B}	1	59	291	.028*
	2	59	100	.000**
D_{2B}	1	56	308	.265
	2	56	295	.182
D_{3B}	1	68	485	.398
	2	69	405	.090
D_{4B}	1	83	802	.387
	2	83	818	.444

*Significant at $p < .05$.

**Significant at $p < .01$.

Association between Dependence Measures

The purpose of testing the association between the dependence measures was to show a positive relationship between dependence and perceived dependence as measured by the study.

Importance. The importance of showing a positive relationship between the two measures was that it would contribute to developing validity for the Cadotte and Stern model as operationalized in this study.

In light of the results of the dependence and perceptual dependence hypotheses, the association could be important in discovering the causes of those hypotheses yielding nonpredicted results. If there were a significant positive relationship between the measures, this would discount the lack of validity for the operationalized Cadotte and Stern model (as offered in the dependence section) and the lack of validity of the perceptual measures because the two measures would be tapping the same construct.

Results. The results of the Kendall's Tau tests are shown in Table 6. The results did not provide a clear-cut acceptance or rejection of the association between the two dependence measures. Four of the possible eight Tau coefficients were significant at the .05 level. These significant coefficients generally explained a moderate to low amount of the variance between the two dependence measures.

Implications. While it was difficult to draw many implications due to the inconclusive nature of the results, rejection of the Cadotte and Stern model due to its validity and the perceptual measures as

Table 6. Kendall's Tau's and significance levels of the relationship between dependence and perceptual dependence.

Relationship	Variable Pair	n	Tau	Significance
Manufacturers--Open	1	32	.2497	.030*
	2	32	.1858	.081
Retailers--Open	1	39	.2183	.035*
	2	38	.0081	.474
Manufacturers--Forced	1	19	.0817	.331
	2	19	-.0413	.413
Retailers--Forced	1	21	.3686	.021*
	2	21	.6698	.001**

*Significant at $p < .05$.

**Significant at $p < .01$.

causes for dependence and perceptual dependence hypotheses failures would have been premature before seeing the results of the power and conflict hypotheses tests.

Power Hypotheses

With respect to purpose, power hypotheses were divided into three groups. Hypotheses P_1 and P_2 attempted to develop support for the Cadotte and Stern conflict episode model's proposed relationship between power and dependence. This test was done by comparing different levels of power. These power levels were based on the amount of dependency as predicted by the model and the number of potential options available.

The second group of power hypotheses (P_{3A} through P_{5A}) was designed to directly assess the relationship between dependence and perceived power by correlating the two measures.

The final group of power hypotheses (P_{3B} through P_{5B}) sought to assess the relationship between perceptual dependence and perceived power by correlation.

These hypotheses could provide support for Emerson's basic concept of the relationship between dependence and power and thus for the Cadotte and Stern conflict episode model.

Results. The results of hypotheses P_1 and P_2 did not support the relationship (Table 7).

Hypotheses P_{3A} through P_{5A}, which assessed the relationship between dependence and perceived power, were not supported by the test results (Table 8). However, two (P_{3B} and P_{4B}) of the three hypotheses,

Table 7. Mann-Whitney U's and levels of significance for power hypotheses P_1 and P_2.

Hypothesis	Variable	n	U	Significance
P_1	1	69	493	.112
	2	71	623	.472
	3	71	515	.091
	4	70	555	.249
P_2	1	55	252	.459
	2	55	215	.190
	3	55	241	.394
	4	55	131	.002*

*Significant at $p < .01$.

Table 8. Kendall's Tau's and significance levels of the relationship between power and dependence.

Hypothesis	Variable Pair	n	Tau	Significance
P_{3A}	1	30	-.1699	.116
	2	32	-.1429	.150
	3	32	-.2196	.055
	4	32	.2076	.063
P_{4A}	1	19	-.1296	.256
	2	19	-.1196	.271
	3	19	-.2691	.090
	4	19	-.1097	.279
P_{5A}	1	17	.4619	.016*
	2	17	.2113	.166
	3	17	.3796	.041*
	4	17	-.1238	.278

*Significant at $p < .05$.

which assessed the relationship between perceptual dependence and perceived power, were generally supported by the Kendall's Tau test results (Table 9). Eighteen out of a possible 24 relationships showed positive significant relationships. The significant relationships were generally moderate in strength.

Implications. Two implications were possible from the results of the tests of the power hypotheses. First, rejection of hypotheses P_1 and P_2 actually supported the operationalized model of interorganizational dependence. Since these hypotheses attempted to predict the levels of power based on the levels of dependence as specified by the model and the number of options, their support in light of the rejection of the dependence and perceptual dependence hypotheses (D_{3A}, D_{4A}, D_{3B}, and D_{4B}) would have been inconsistent if the model and measures were valid.

Rejection of the dependence-power relationship and acceptance of the perceptual dependence-power relationship could indicate that the perceptual measures were more valid indicators of dependence. One possible reason for the lack of support for the dependence-power hypotheses has been previously mentioned. If firms were emphasizing goals other than profit, which was the only goal considered in measuring dependence, then a perceptual measure encompassed a more complete set of benefits and costs incurred in a relationship than did the dependence measure.

Conflict Hypotheses

The purpose of the conflict hypotheses was to show a relationship between dependence and conflict by comparing levels of perceived

Table 9. Kendall's Tau's and significance levels of the relationship between power and perceptual dependence.

Hypothesis	Variable Pair	n	Tau	Significance
P_{3B}	1	32	.3756	.003**
	2	32	.5324	.001**
	3	34	.3719	.003**
	4	34	.5456	.001**
	5	34	.4061	.001**
	6	34	.5377	.001**
	7	34	.5152	.001**
	8	34	.6483	.001**
P_{4B}	1	22	.6309	.001**
	2	22	.6003	.001**
	3	22	.6095	.001**
	4	22	.6375	.001**
	5	22	.4809	.003**
	6	22	.6145	.001**
	7	22	.6458	.001**
	8	22	.6908	.001**
P_{5B}	1	23	.4041	.009**
	2	23	.1572	.183
	3	23	.2793	.050*
	4	23	.1337	.222
	5	23	.1996	.117
	6	23	.2282	.093
	7	23	-.2050	.109
	8	23	-.0381	.412

*Significant at $p < .05$.

**Significant at $p < .01$.

conflict as predicted by the conflict episode model. Again, the importance of the conflict hypotheses was their ability to substantiate the Cadotte and Stern model by supporting the hypothesized relationship between dependence and perceived conflict.

Of the four conflict hypotheses, only hypothesis C_2, which predicted no difference in perceived conflict, was supported (Table 10). The other three hypotheses found no significant differences in the levels of conflict perceived by firm members. Generally, then, the predicted relationship between levels of conflict was not supported by the test results.

This failure to substantiate the conflict hypotheses could be viewed positively in light of the rejection of the dependence and perceptual dependence hypotheses on which these hypotheses were developed. Although conflict hypothesis C_2 was substantiated, this did not detract from the above, because the dependence and perceptual dependence hypotheses (D_{2A} and D_{2B}), which are counterparts to C_2, were also substantiated. A possible cause for the rejection of these conflict hypotheses was that the levels of dependence created by the forced and open conditions were not in the desired amounts due to the evoked set notion previously mentioned. Although the above cause is highly attractive, at this point the possibility of the conflict episode model not being valid could not be discarded.

Summary and Conclusions of Hypothesis Testing

In general, the analysis did not support the hypothesized relationships. The only notable exception being that a significant positive association was found between perceptual dependence and perceived power.

Table 10. Mann-Whitney U's and levels of significance for comparison of perceptual conflict levels.

Hypothesis	Variable	n	U	Significance
C_1	1	50	166	.005**
	2	52	276	.396
	3	51	282	.577
	4	53	323	.815
C_2	1	91	980	.657
	2	92	1051	.971
	3	90	965	.696
	4	92	863	.060
C_3	1	77	440	.002**
	2	80	615	.061
	3	77	511	.015*
	4	78	712	.401
C_4	1	64	415	.351
	2	64	394	.243
	3	64	381	.192
	4	67	432	.243

*Significant at $p < .05$.

**Significant at $p < .01$.

Causes. Several potential causes for the lack of support for each set of hypotheses were presented. Two causes seem to stand out as the most probable. The first most probable cause was the operationalized Cadotte and Stern model. The operationalized model might not be a good abstraction of the variables and interrelationships which constitute interorganizational dependence in marketing channels (i.e., low or no validity). The only piece of evidence which might favor another cause was the positive relationships, as predicted by the model, found between perceptual dependence and perceived power.

The other potential cause concerned the major experimental variable--the number of available options. The open and forced conditions were designed to provide different groups of firms with differing numbers of potential options. This was done in order to, as specified by the model, produce different levels of dependence. These differing levels of dependence were in turn to produce different levels of perceived dependence, perceived power, and perceived conflict. Failure of the two conditions to set different levels of dependence would have caused all the other groups of hypotheses to be invalid.

Although the open and forced conditions did, from an objective standpoint, achieve the desired array of potential options, they may not have done so from a perceptual standpoint. Research by Wilcox and Jarvis (1974) has shown that consumers only consider a subset (the evoked set) of all possible brands when making a purchase decision. Howard (1977, p. 32) formally defines the evoked set as:

> . . . the subset of brands that a consumer would consider buying out of the set of brands in the product class of which he or she is aware.

This is yet another way in which humans attempt to simplify and make decision making easier.

It was possible that this same method of simplification was used by channel firms in deciding on which channel alternatives would be selected. Although a firm may have been aware of nine possible alternatives, it may have actively considered only a subset--the evoked set--of that group. The number of options actively considered would be a function of the firm's evoked set, not the forced or open conditions as the study originally was designed.

Reanalysis

Purpose. In an attempt to discover if the problems encountered in hypotheses testing were actually caused by firms' differing perceptions of potentially available options, a reanalysis of the data was performed focusing on the evoked sets of parasimulation firms.

Method. Evoked sets for each company were determined by counting the number of firms which were rated on the questionnaires by that company. The more firms rated by a company, the larger its evoked set. Upon viewing the firms and the size of their evoked sets, it was noted that firms in the forced condition had to be in the smaller size set group because they only had three potential options from which to develop their evoked sets.

To overcome this problem, a percentage was developed (following Howard, 1977, p. 32) by dividing the number of firms rated by the number of potential firms available to it. This percentage figure, then, provided a more suitable method of comparing and ranking the size of the

evoked sets of each of the channel firms. It should be noted here that the potential number of options available also included the central bank. This was done because many firms placed money in savings accounts and earned a considerable amount of interest.

Firms were then ranked according to this evoked set percentage (Table F-1, Appendix). Firms with relatively high percentages would have considered a large percentage of their available options and would, therefore, be less dependent on those alternatives. Alternatively, firms with relatively low percentages would have considered a small percentage of their available options and would have been more dependent on those alternatives.

Deciding on what percentage to use as a cutoff point between high and low dependence groups was a difficult and crucial decision. Two approaches were taken in order to improve the validity of the analyses which were performed based on the evoked set percentage. The first approach was to set an upper and lower limit for inclusion in the high and low dependence sets. The limits chosen were greater than or equal to 60% for the high evoked set group and less than or equal to 40% for the low evoked set group. Picking these cutoffs should have increased the chances of the tests to provide positive results because the firms chosen should have had the extreme levels of dependence. The middle group of firms which should have had middle-of-the-road levels of dependence were not used in this analysis. The firms used are shown Table F-1, Appendix.

The second approach used a cutoff point of 50%. Evoked set percentages greater than 50% were included in the high group, while

firms with evoked set percentages equal to or less than 50% were included in the low group. This approach used all of the firms in the analysis (Table F-3, Appendix) and should not have had as great a chance of supporting the operationalized model as the first approach because of this utilization.

Hypotheses. New hypotheses used in this reanalysis again were divided into three major groups: (1) dependence, (2) power, and (3) conflict.

Dependence hypotheses:

Dependence:

D_{1E} Firms with low evoked set percentages should be significantly more dependent on their alternatives than firms with high evoked set percentages are dependent on their alternatives.

Perceptual dependence:

D_{2E} Firms with low evoked set percentages should perceive themselves to be significantly more dependent on their alternatives than firms with high evoked set percentages perceive themselves to be dependent on their alternatives.

To assess the relationship between the two measures of dependence, the two measures were correlated.

Power:

P_{1E} The perceived power of an alternative by a firm with a low evoked set percentage is significantly greater than the perceived power of an alternative by a firm with a high evoked set percentage.

P_{2E} There is a significant positive association between dependence and perceived power.

P_{3E} There is a significant positive association between perceptual dependence and perceived power.

Conflict:

C_{1E} The level of conflict perceived with an alternative by a firm with a low evoked set percentage is significantly greater than the level of conflict perceived with an alternative by a firm with a high evoked set percentage.

In discussing the results for each hypothesis, both approaches will be discussed simultaneously.

Before testing the hypotheses, the makeup of the firms in each group (low and high evoked set) were checked in order to determine if there were any significant differences in the composition of the groups based on type of firm (manufacturer or retailer) and experimental condition (open or forced). Hypotheses were that there were no significant differences in the groups on these two variables. Support of these hypotheses would allow any differences found by the reformulated hypotheses to be attributed to the size of the evoked sets and not these two variables.

Since the approach which used the extreme firms only had a sample size of less than 20 and both approaches had more than 20% of their cells with an expected frequency of less than five, Fisher's exact probability test was used (Siegel, 1956, p. 110) instead of the chi-square test. Results of the tests for both approaches (Table F-4, Appendix) showed no significant differences ($p < .05$) between the

firms in the high and low evoked set percentages with respect to type of firm or original experimental condition. Therefore, any significant differences found should be attributable to the relative sizes of the evoked sets.

Dependence. The results of both approaches can be seen in Table 11. Both approaches strongly supported the dependence hypotheses. This was in contrast to the original findings and supported the contention that the cause of the original rejections was based on the perception of alternatives (evoked set) used by channel firms not by the structure as developed by the experimental conditions (open and forced).

Perceptual dependence. Results of the perceptual dependence hypothesis tests supported this hypothesis (Table 12). Again, these are in direct contrast to the original perceptual dependence findings. Based on the evoked set sizes, it was possible to predict the relative levels of perceived dependence. Again, this provided support for the operationalized Cadotte and Stern model of dependence. This supported the above contention that the original analysis failures were due to perception of alternatives, not the operationalized model.

Association. Kendall's Tau tests found a significant association between the two measures of dependence (Table 13). The sizes of the associations were moderate, however, for both approaches. These results were also in contrast to the inconclusive original findings. Major differences between the original and reanalysis were in the size of the sample. The increased sample size allowed significant positive relationships to surface. These findings helped to build support for

Table 11. Mann-Whitney U's and significance levels for reanalysis dependence hypothesis.

Hypothesis	Approach	n	U	Significance
D_{1E}	Extreme	28	30.0	.002*
D_{1E}	Inclusive	32	40.0	.002*

*Significant at $p < .01$.

Table 12. Mann-Whitney U's and significance levels for reanalysis perceptual dependence hypothesis.

Hypothesis	Approach	Variable	n	U	Significance
D_{2E}	Extreme	1	129	1656	.038*
D_{2E}	Extreme	2	129	1523	.008**
D_{2E}	Inclusive	1	151	2216	.009**
D_{2E}	Inclusive	2	151	2188	.005**

*Significant at $p < .05$.

**Significant at $p < .01$.

Table 13. Kendall's Tau's and significance levels of the relationship between dependence and perceptual dependence in reanalysis.

Approach	Variable Pair	n	Tau	Significance
Extreme	1	92	.2586	.001*
Extreme	2	91	.3256	.000*
Inclusive	1	111	.2717	.001*
Inclusive	2	110	.2775	.001*

*Significant at $p < .01$.

the validity of the two measures. The moderate size of the relationships might have been due to the inability of the dependence measure to measure all goals pursued by channel firms.

Power. Each of the power hypotheses was designed for a separate purpose, and each will be discussed separately. Power hypothesis P_{1E} sought to predict relative levels of perceived power based on the levels of dependence as developed by the number of options available (evoked set). The test results of this hypothesis are shown in Table 14. For the first time in reanalyzing the data, the two approaches did not completely agree. The approach which used the extreme evoked set percentages provided inconclusive results. Two of the four variables which measured power showed favorable significant differences.

The approach which used all the firms was more supportive of the hypothesis, as three of the four variables showed favorable significant differences. Evidently those five firms included in the second approach generally strengthened the hypothesized relationships.

In summary, the analyses provided support for power hypothesis P_{1E} but not to the extent that the previous hypotheses were supported. Power hypotheses P_{2E} and P_{3E} attempted to assess the relationship between the two measures of dependence and perceived power. P_{2E} looked at dependence, while P_{3E} focused on perceptual dependence. The extreme approach revealed a significant relationship, while the inclusive did not (Table 15). However, both approaches revealed significant positive relationships of moderate size between the perceptual dependence measure and perceived power. Again, this could have been because dependence, as operationalized, may not have assessed all pertinent organizational

Table 14. Mann-Whitney U's and levels of significance for power hypothesis P_{1E}.

Approach	Variable	n	U	Significance
Extreme	1	128	1726	.089
Extreme	2	130	1564	.009**
Extreme	3	129	1676	.050*
Extreme	4	129	1777	.116
Inclusive	1	150	2306	.026*
Inclusive	2	152	2126	.002**
Inclusive	3	151	2264	.013*
Inclusive	4	151	2552	.136

*Significant at $p < .05$.

**Significant at $p < .01$.

Table 15. Kendall's Tau's and significance levels of the relationship between power and two methods of dependence measurement.

Hypothesis	Dependence Measurement Method	Approach	Variable Pair	n	Tau	Significance
P_{2E}	Mathematical	Extreme	1	90	.1404	.038*
		Extreme	2	92	.1414	.036*
		Extreme	3	92	.2381	.001**
		Extreme	4	91	.1974	.005**
		Inclusive	1	109	.0536	.229
		Inclusive	2	111	.0469	.257
		Inclusive	3	111	.1038	.073
		Inclusive	4	110	.1866	.004**
P_{3E}	Perceptual	Extreme	1	128	.2499	.001**
		Extreme	2	128	.3356	.001**
		Extreme	3	130	.3321	.001**
		Extreme	4	130	.3641	.001**
		Extreme	5	129	.3660	.001**
		Extreme	6	129	.4189	.001**
		Extreme	7	129	.3694	.001**
		Extreme	8	130	.5160	.001**
		Inclusive	1	150	.3428	.001**
		Inclusive	2	150	.3527	.001**
		Inclusive	3	152	.3261	.001**
		Inclusive	4	152	.3792	.001**

Table 15, continued

Hypothesis	Dependence Measurement Method	Approach	Variable Pair	n	Tau	Significance
P_{3E}	Perceptual	Inclusive	5	151	.3479	.001**
		Inclusive	6	151	.4211	.001**
		Inclusive	7	151	.3854	.001**
		Inclusive	8	152	.5333	.001**

*Significant at $p < .05$.

**Significant at $p < .01$.

goals, while the perceptual measure could have captured these.

The results of P_{3E} reinforced the Cadotte and Stern conflict episode model by supporting its relationship between dependence and power as perceived in the marketing channel.

Conflict. Neither of the analysis approaches supported the conflict hypotheses (Table 16). This was also the case in the original analysis. However, since the dependence and perceptual dependence hypotheses were supported by the reanalysis, this lack of support cannot be viewed as a positive finding.

One possible cause was that the conflict episode model did not correctly portray the relationship between dependence and conflict. Another potential cause could have been the inappropriateness of the conflict measure.

A final, and more appealing, possibility was the nature of the effect that dependence played in the development of conflict. The complete Cadotte and Stern conflict episode model, as discussed in Chapter II, page 67, identified dependence as the necessary condition for conflict and three potential causes of conflict. This study was only concerned with the dependence component and not the three potential causes of conflict. Prediction of conflict was based on the level of dependence only. This approach may have been overly simplistic in its prediction attempt due to this neglect of the three potential causes of conflict. Also, the complete Cadotte and Stern model notes that conflict perception is affected by the costs incurred relative to the benefits received from a relationship. The greater the costs relative to the benefits, the greater the chances of conflict to be perceived.

Table 16. Mann-Whitney U's and levels of significance for comparison of perceived conflict levels in reanalysis.

Approach	Variable	n	U	Significance
Extreme	1	120	1583	.180
Extreme	2	123	1531	.067
Extreme	3	119	1511	.119
Extreme	4	123	1536	.052
Inclusive	1	141	2135	.066
Inclusive	2	144	2040	.011*
Inclusive	3	141	2003	.021*
Inclusive	4	145	2405	.185

*Significant at $p < .05$.

This aspect was not considered in this study, again pointing to an overly simplistic approach.

Reanalysis Conclusion

The above results supported the contention that the problems in the original analysis were mainly attributable to the failure of the experimental variable (number of potential options) to have the desired effect. Using the concept of the evoked set, this problem was controlled. The results of the reanalysis provided good support for the Cadotte and Stern model as operationalized in this study. The formulation of dependence and its predictions were generally supported. Knowledge of the evoked set size allowed predictions of the relative sizes of dependence as measured by the operationalized model. Percpetual measurement of dependence also supported the use of the evoked set and the predictions of the model. Significant correlations between the two measures of dependence also tended to reinforce not only the model but also the measures themselves.

Relationships between dependence and other key channel variables, as specified by the Cadotte and Stern conflict episode model, found mixed support. The relationship between dependence, as perceptually measured, and power was supported, and relative levels of power were predictable based on evoked set size. The formulated dependence measure, however, showed mixed support for its relationship with power. This could have been because the measure only looked at benefits and costs incurred in pursuit of profit maximization as the major organizational goal.

Also, the relationship of conflict in the model received no support. This lack of support might have been a function of using only one of the Cadotte and Stern model's components of conflict (dependence) and not the complete set of components.

Summary

This chapter has presented the results of various statistical tests used to check the development of marketing channels within the parasimulation, the control for possible confounding variables, and, finally, to test the hypotheses of the study. Generally, the checks of channel development were positive. However, bargaining and learning behavior of the firms in the forced condition did not indicate the hypothesized channel behavior. The controls for possible confounds did not reveal any significant differences in the two conditions (forced and open).

Results of the tests of the study are summarized in Table 17. These generally negative results were apparently caused by a failure of the experimental variable (number of potential options) to be perceived as desired. Using a concept from consumer behavior, which notes that consumers actively consider only a limited subset (the evoked set) of all possible brands, firms were reclassified into high and low evoked set groups.

Hypotheses were reformulated and tested. Results of this reanalysis are summarized in Table 18. This revised approach to analysis provided generally more encouraging results. These results supported the perception problem diagnosis of the original analysis and the use

Table 17. Summary of hypothesis testing.

Hypothesis Type	Hypothesis Number	Statistical Results
Dependence	D_{1A}	Not supported
	D_{2A}	Supported
	D_{3A}	Not supported
	D_{4A}	Not supported
Perceptual dependence	D_{1B}	Not supported
	D_{2B}	Supported
	D_{3B}	Not supported
	D_{4B}	Not supported
Power	P_1	Not supported
	P_2	Not supported
	P_{3A}	Not supported
	P_{3B}	Supported
	P_{4A}	Not supported
	P_{4B}	Supported
	P_{5A}	Inconclusive
	P_{5B}	Not supported
Conflict	C_1	Not supported
	C_2	Not supported
	C_3	Inconclusive
	C_4	Not supported

Table 18. Summary of reanalysis hypothesis testing.

Hypothesis Type	Hypothesis Number	Statistical Results
Dependence	D_{1E}	Supported
Perceptual dependence	D_{2E}	Supported
Power	P_{1E}	Supported
	P_{2E}	Inconclusive
	P_{3E}	Supported
Conflict	C_{1E}	Not supported

of the evoked set as a gauge of the number of options considered by firms.

Reanalysis provided support for the operationalized model of interorganizational dependence in marketing channels and for the relationship between power and dependence as predicted by the Cadotte and Stern conflict episode model. The relationship between conflict and dependence was not supported, however. A deficiency in measurement of all the components of conflict was offered as the reason for this lack of support.

CHAPTER VI

IMPLICATIONS AND FUTURE RESEARCH DIRECTIONS

Introduction

Building on the results of the test of the interorganizational dependence model and its operationalization in marketing channels, this chapter will attempt to draw implications from this exploratory study and propose future avenues for marketing channels research. The chapter will consist of three major sections: (1) a brief summary of the study, (2) implications from the study, and (3) directions for future research.

Summary of the Study

Purpose

This study sought to take a theoretical model of dependence developed by Cadotte and Stern and operationalize that model in a marketing channels setting. Previous conceptual writings by various social scientists had suggested that dependence was the key variable in studying power and conflict among organizations. Dependence also was suggested as the link between power and conflict. The study thus looked at the relationships between dependence and the two other major interorganizational variables--power and conflict.

Methodology

A contrived laboratory situation called a parasimulation was used as the experimental setting. This setting was chosen chiefly because it offered a high level of control and allowed accessibility to

data. Subjects were college students who were taking a marketing channels course. This course offered students the background sufficient to become channel executives. The experimental variable was the number of potential options available to the channel firms. It was posited that the greater the potential options, the less dependent; and the fewer the number of potential options, the more dependent. Variation in the number of options was provided by differing the number of firms (retailers, wholesalers, and manufacturers) at each level of the channel.

Dependence was measured by two methods. Actual costs and benefits of relationships were obtained from parasimulation firms. Dependence was then calculated as specified by the dependence model. Dependence was also measured by directly asking firm executives their perceptions of their dependence on the other firms. Power was measured by asking the extent of control the other firms had over marketing decision variables as perceived by firm executives. Conflict was measured by the perception of executives with respect to certain conflictive behaviors exhibited by the other firms.

Hypotheses were developed which dealt with dependence, power, and conflict. Dependence hypotheses tested the validity of the dependence model by predicting levels of dependence. The relationship between the two methods of dependence measurement was also tested. Power hypotheses tested the relationship between power and dependence as specified by the model. Conflict hypotheses tested the relationship between conflict and dependence as specified by the dependence model.

Results

The hypothesized relationship between dependence and the number of options available was not supported by the test results. Since these hypotheses were used to develop the power and conflict hypotheses, their rejection indicated that the power and conflict hypotheses were also inappropriate and would not be supported. This contention was the case for the power and conflict hypotheses. The most promising cause for the lack of support for the dependence hypotheses had to do with the executives' perception of the number of potential alternatives. Consumer behavior research has shown that consumers only perceive a subset (the evoked set) of all potential brands. If channel executives also employed this perceptual mechanism, the number of potential alternatives they perceived and the number of alternatives as determined by the parasimulation may not have been the same. Firms were divided into large and small set groups based on the sizes of their evoked sets. Firms with small evoked set sizes should have been more dependent, while firms with large evoked set sizes should have been less dependent. Hypotheses for dependence, power, and conflict were reformulated using the size of the evoked set as the experimental variable. Test results for the dependence and power hypotheses supported the operationalized dependence model and its relationship with power. These findings indicated that the problem with the original analysis was that of perception of the number of potential options.

The test results for the conflict hypotheses did not support the relationship between conflict and dependence as specified by the dependence model. Failure to measure all the components specified by the

overall channel relations model as producers of conflict was offered as the most probable cause.

Implications

This section will present several implications from the study. These implications will concern: (1) usefulness of the parasimulation, (2) the dependence model and its validity, (3) the total conflict episode model, and (4) the general research approach of the study.

Parasimulation

The parasimulation approach as used in this study is a viable tool for marketing channel research. The parasimulation approach is particularly suited for the generally low level of conceptual development evident in channel research today. The parasimulation approach allowed this study to focus on major channel variables and their interrelationships in a less complex, but not overly simplistic, environment. This quality of not being overly simplistic was evident from the multiple goals which many firms had, even when the researcher desired and attempted to limit the number of goals.

When the level of channel conceptual development reaches a more mature state and is thus in a better position to tackle real channel environments, the experience gained from the parasimulation approach would be useful. Not only the clarification and development of concepts as facilitated by the use of the parasimulation approach but also the experience gained in data gathering methods would be useful as well. This advantage is particularly important in light of the difficulty in the gathering of channel research data.

Dependence Model

In drawing implications about the dependence model based on the results of the study, the discussion must include an assessment of the measurement techniques used as well as the model. This assessment is necessary because the validity of the model cannot be determined to any degree without reliable and valid measures. Although a conceptualization may be valid, if the measures used are inappropriate, the results could indicate it to be invalid. On the other hand, if a conceptualization were invalid but the measures used were appropriate, test results should indicate this invalidity. Therefore, the appropriateness of the measurement techniques must be addressed when discussing the validity of a concept or model.

The operationalized model of interorganizational dependence received reasonable support and thus provided some validity for the conceptualization. An assessment of the model by this researcher must be tied to an analysis of the measurement techniques. Data were gathered by requiring firms to use certain forms as part of their channel operations. The only area of concern was for the obtainment of data which indicated communication between firms as to unsuccessful purchase negotiations. Although this researcher tried to insure that all inquiries were made in written form, it was inevitable that some firms had knowledge of potential alternatives' purchase or sale intentions without use of the appropriate forms. This problem had an effect in the denominator of the model in that the denominator was understated due to missing potential net benefits.

The effect on the total dependence model was that the model tended to overstate dependence. However, if this occurred to all firms

on an equal basis, then it had little effect on the results. This lack of effect was true because the nonparametric statistical methods utilized data rankings and not the absolute size of the dependence measures.

From a practical standpoint, the necessity of the model to predict the exact level of dependence present is questionable. As long as the model understates or overstates dependence on a consistent basis, it could be useful for channel decision makers. The model would still provide a correct ranking of alternatives as to dependence and thus give the decision maker an indication of the relative dependence of the alternatives. In the selection of a retailer, a manufacturer who desires a dependent outlet in a certain geographical area would choose the retailer who would become the most dependent relative to the other alternatives. Even though this retailer may, from an absolute sense, not be very dependent on the manufacturer, he will become the most dependent of the retail alternatives available. Considering the above, this researcher believes that the operationalized model is an adequate representation of interorganizational dependence in marketing channels.

Although the general data gathering technique for dependence measurement was somewhat complicated, it would be appropriate in field settings. Data necessary for dependence measurement could be obtained from purely secondary sources as long as utilitarian goals were the most important. Actual revenue and cost data would be available from accounting records, while potential revenues and costs could be determined from price quotations, bids, or catalogues. Little, if any, executive time would be needed using this approach. This characteristic

is in contrast to a completely perceptual approach which would require time from all executives who have a significant effect on channel policy. A company might be more willing to provide the secondary data than to give of its executives' time.

Conflict Episode Model

The total Cadotte and Stern conflict episode model specifies the relationship between dependence, power, and conflict. Results of the study supported the dependence construct and its relationship with power. Again, the appropriateness of the dependence and power measures determine to a great degree the trust which can be given to the study findings. The appropriateness of the operationalized dependence measure has previously been discussed, but the perceptual approach has not.

The perceptual dependence measures were constructed with the aim of capturing the essence of Emerson's conceptualization. Study results seemed to indicate that the perceptual dependence measure was more valid. In determining the relationship with perceived power, the perceptual approach showed a stronger relationship than did the operationalized approach. Since power was measured in a manner consistent with many previous channel studies and since the same power measures were used in testing both operationalized and perceptual dependence measures, the perceptual measure appeared to be more appropriate. This more appropriateness of the perceptual measures was not surprising since the operationalized approach used only net benefits associated with the profit goal, while the other goals and benefits were not included. For example, some firms stated that a smooth-running relationship was pursued instead of profit maximization as the chief organizational goal.

Also, the operationalized dependence measure probably failed to assess all the potential net benefits available due to the data gathering problems previously mentioned. However, the perceptual approach allowed the respondent to weigh and combine all the actual and potential net benefits of which he or she was aware, thus providing a more complete measure of dependence. Therefore, the complete model probably does accurately portray the relationship between power and dependence.

The study results failed to provide support for the relationship between dependence and conflict. The conflict measure consisted of four semantic differential questions developed from a longer questionnaire developed by Stern, Sternthal, and Craig. These were the only major variable measurement items not specifically developed for the study. The factor analysis reduction method used to develop the four items from the much longer original questionnaire may not have retained the sensitivity of the original. This was the only measurement technique which would have been changed if the study were repeated. Specific items would be developed which pertained to the poker chip product/market, as developed by the parasimulation. Also, a single global question would be developed to directly assess the respondents' perception of conflict. Since respondents would have been exposed to the conflict concept in class, they should be able to provide a reasonable assessment of the level of conflict they perceived. This doubt about the appropriateness of the conflict measure and the failure of the study to measure all the potential causes of channel conflict made any assessment of the validity of this part of the total conflict episode model premature.

With respect to measurement in general and the total conflict episode model, one major problem stood out. In the original paper,

Cadotte and Stern provide very exact mathematical relationships between dependence, power, and conflict. To fully test these mathematical relationships, measurement must provide data which can be subject to several mathematical operations. Appropriate data must be at least intervally scaled. Objective measures, such as the operationalized dependence developed in this study, would seem to be more suitable than perceptual measures. However, certain channel variables seem to be more valid if measured perceptually. The executive's perception of power and conflict control his actions rather than the objective levels of power and conflict that are present. If prediction of the executive's behavior is a goal, then the perceptual measures seem to add considerably to understanding. Thus, the original presentation of the model seems to require objective measurement approaches, while some of the variables lend themselves to perceptual approaches.

General Research Approach

The research approaches that are available when attacking a complex model like the total conflict episode model fall on a continuum from micro to macro. The micro approach attempts to take the model one piece at a time and study that one piece thoroughly and then proceed to the next. The advantage of this approach is that it starts with the less complex model piece and attempts to study that piece in all its complexity. Through this complex study of a piece of the overall model, the researcher hopes to maximize the knowledge about that piece. After the study of each piece of the model, the knowledge level about each piece should be high. There are, however, potential problems with this approach. The researcher may never be able to successfully understand

that piece of the overall model in sufficient detail to feel that he can go on to another model piece.

The micro approach is still susceptible to another weakness. Since the emphasis is on individual pieces of the model, researchers can neglect the interrelationships between the variables. This leads to little knowledge about the interrelationships and, thus, a low level of understanding about the overall model, since the model pieces must interact in someway to represent the concept that the model attempts to portray.

The macro approach attempts to test the complete model at one time by simplifying the model as much as possible. This approach thus concentrates on the total concept rather than its components. This concentration of effort on testing the total concept is the chief advantage of the approach. A major disadvantage of the approach is that the internal workings of the model can become "black box" in nature. The simplification of the model variables and interrelationships can be such that these components are poorly delineated and understood. Another disadvantage of this approach comes in the simplification task. The researcher must be sure that the simplification of the model variables and interrelationships does not cause the simplified model to loose the essence of the original concept.

The approach taken by this study was more towards the micro end of the research approach continuum. However, the dependence construct was the major component of the conflict episode model, and the relationships between dependence, power, and conflict were also tested. Thus, this study overcame the basic problems of the micro approach by

focusing on the major model piece and some of the interrelationships among model components.

Evoked set. A final implication of the study involves the use of the evoked set as an indicator of the number of alternatives available to a channel organization. Generally, when past channel research considered dependence, it focused on the benefits portion (numerator) of Emerson's dependence concept. This study attempted to develop a measure which simultaneously looked at the benefits (numerator) and the available alternatives (denominator) which compose Emerson's conceptualization. This availability component has been shown by this study to be best measured by using the evoked set of alternatives, as perceived by the firm's channel executives.

Future Research Directions

From the methodology and results of this study, several potentially fruitful research directions are evident. These areas include: (1) suggestions for replicating the study, (2) understanding of the nature of goals, (3) conflict causes, and (4) relationship between dependence and the bases of channel power.

Replication

Future research might want to replicate this study but with certain methodological changes. Improvement of the data gathering mechanism for the measurement of the operationalized dependence model is needed in the area of potentially available net benefits. If funds were available, the telephone approach mentioned in Chapter III would

allow all contacts between firms to be recorded. Another approach might be to use computer terminals as communication mechanisms and have the computer keep a record of all contacts and details. Inclusion of the potentially missing alternative net benefits would improve the validity of the model. Also, improved methods of conflict measurement would need to be developed to allow a more valid assessment of the model's conflict relationship. This might be done by developing questions which assess the executive's perceptions of specific conflictive behaviors which other companies within the poker chip product/market could exhibit.

Goals

One of the most fruitful avenues for future channel research concerns organizational goals. Goals, according to the Cadotte and Stern conflict episode model, play a major part in the makeup of dependence and conflict.

Several questions and problems pertaining to goals and dependence need to be answered. First, the problem of combining benefits and costs obtained in pursuing multiple organizational goals must be solved. This is particularly important with respect to increasing the validity of the dependence measurement methodology developed by this study. Resolving this issue is also important if this methodology is ever to be used in field settings.

With respect to conflict, the problem of measuring goals is crucial. If, indeed, goal incompatibility is a cause of intrachannel conflict, some methodology for measuring goals is needed. Measuring goals is necessary before determining the difference (incompatibility) between the goals of two organizations. The multiple goal problem is

also present and thus requires some method of summation to obtain a value for the level of goal incompatibility.

Conflict Causes

Problems similar to that involved with organizational goals are evident in dealing with the two other hypothesized causes of conflict--domain dissensus and perceptual incongruency. Operational definitions and measurement methodologies must be developed to assess the relationship between these two concepts and channel conflict.

Bases of Power

The channel literature indicated that most effort in the area of power research had concentrated on determining the relationship between the bases of power and developed power. Results consistently showed that a relationship did exist. This study showed a strong relationship between perceptual dependence and power. Future research should be directed at determining the relationship between dependence and power bases. Are the bases of power really the mechanisms by which benefits are given and obtained? In other words, are the bases of power contained in the motivational investment component of Emerson's dependence concept? If an organization builds up its capacity to give benefits (increase the other's motivational investment) and thus increases the other organization's dependence, does this also increase the first organization's power bases and its power over the second? This study would seem to indicate that this would happen. However, research with this relationship as its central thrust needs to be performed.

Final Summary of the Study

This study operationalized and tested a theoretical model of interorganizational dependence in marketing channels developed by Cadotte and Stern (1979). Interorganizational literature suggested that dependence was the key to understanding power and conflict between organizations.

In a contrived laboratory situation (parasimulation), the operationalized dependence model and its relationship with power and conflict were tested. The experimental variable was the number of potential options available to a given channel organization. The hypothesized relationship being that the greater the number of potential options, the less the dependence. The structure of the channel created by the parasimulation provided the variation in the number of options.

The hypothesized relationship between dependence and the experimental variable was not supported by the test results. Since this relationship was used to construct the hypotheses concerning the relationship between dependence and power and conflict, its rejection indicated a rejection of the other hypotheses of the study. Indeed, the relationship between dependence and power and dependence and conflict were rejected. It was believed that the problem with the above analysis was caused by a difference between the number of options, as developed by the channel structure, and the number of options as perceived by firm executives (evoked set). Using the perceived number of alternatives as the experimental variable, hypotheses were reformulated and tested. Results were supportive for the operationalized dependence model and its relationship with channel power. The relationship

between dependence and conflict was not supported.

There were several implications from the study. First, the further use of the parasimulation as a research tool was recommended. Methods for improving the measurement of dependence and conflict were also suggested.

Future research directions included suggestions for replicating the study and effort in the study of goals, conflict causes, and the relationship between dependence and power bases.

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APPENDICES

APPENDIX A

LIVE CHANNEL SIMULATION

Preface

These instructions are designed to provide all the necessary operating information to enable you to efficiently participate in the simulation. Read the entire instructions but do not try to digest all the information at once. You will not be expected to memorize every detail but rather gain some idea of the procedure. These instructions should be kept as a reference to be used throughout the game. The information will become clearer as problems relating to it arise throughout the quarter. Feel free to ask questions in class about any points you do not understand since other students will probably be confused on these points also. Be sure to discuss the game with your fellow team members and make certain everyone understands the procedure before the first round.

Dr. E. R. Cadotte Marketing Systems

Live Channel Simulation

Channels of distribution are composed of basically autonomous firms which compete vigorously for the scarce resources of sales, profit, market, market dominance, long- and short-run growth, etc. The instructor and the textbook argue strongly that there is great need and opportunity to manage channels of distribution as systems in order to maximize the resources available to all channel members. In theory, this argument shows great merit, and you may be willing to accept it on face value. In practice, the management of distribution channels is very difficult indeed.

In order for you to better comprehend the problems and opportunities of channel management, a live channel simulation case has been developed. The case is similar to other class cases you have had or will have in that you must analyze market conditions, identify alternative courses of action, and make specific decision recommendations based upon that analysis.

The case differs from other marketing cases in two important respects. First, the case is a simulation of the marketing channel. In all important respects, the channel environment will be reproduced in a classroom. You will be dealing with wholesalers, retailers, manufacturers, and freight carriers. You will have to make decisions regarding buying, selling, price setting, and taking inventory. You will have to make decisions in the face of uncertainty. Most importantly, you will have the opportunity to observe the effect of your decisions on the performance of your firm.

The case differs from other marketing cases in that it is live. Your competitors, suppliers, and customers will be in the room with you competing for the same resources which you are trying to win. You will have to try to out guess them even as they are trying to out guess you. You will always be competing with time. You will have decisions which must be made regularly and frequently. These decisions cannot be postponed while you gather additional information or give the problem some more thought. In short, you must be decisive and quick thinking.

The description of the live channel simulation follows and is divided into four parts. Part I discusses the general channel environment in which you must compete, including market and product characteristics and channel structure. Part II provides detailed descriptions of the channel decision to be made by the manufacturers, wholesalers, retailers, and freight carriers who make up the channel. Part III contains a description of the role of the bank and Internal Revenue Service. Part IV contains a list of rules by which the simulation will be run. Finally, the documents to be used in your decision making are included in the appendix.

Part I. Channel Environment

The market setting for the channel simulation is the poker chip product market. The market is highly competitive in that it exhibits many of the characteristics of the economist's conception of pure competition. For example, there are no brand name poker chip manufacturers and, therefore, very little brand loyalty. For the most part, sales and market shares are determined by a firm's price in relation to the prices of other competing firms in the market. However, the market for poker chips is not entirely pure. Traditionally, there have been three classes of poker chips--blue chips, red chips, and white chips. Each product class exhibits unique market characteristics which distinguish it from the other two.

Blue chips are precision manufactured out of the finest quality plastic and, therefore, tend to be very expensive. Demand for blue chips is relatively small, accounting for only 15% of the poker chip market. However, it is relatively stable from one period to the next.

Red chips are mass produced out of good quality plastic. They tend to be moderately priced and account for a major share of the poker chip market. Red chip demand is less stable than blue chip demand. That is, demand may jump or drop by as much as 25% from one period to the next and channel members have no way to control this variability.

White chips are imported from the orient by U.S. manufacturers. They are made out of inexpensive plastic and appeal to the price conscious consumer. On the average, white chips make up approximately 55% of the poker chip market. However, demand is quite volatile and may vary by as much as 35%, up or down, from one period to the next.

Competition for the poker chip market is very active. There are four manufacturers who produce poker chips, and each is capable of manufacturing or importing all three kinds. Three wholesalers work with the manufacturers and their retail customers. All three wholesalers have traditionally handled all three classes of poker chips. Finally, there are six retailers who sell all three types of poker chips to the ultimate consumer.

In addition to the manufacturers, wholesalers, and retailers, there are three service firms. Two transportation firms handle all freight movements at negotiated rates. The last is a bank which is the ultimate supplier and market for all poker chips. The Bank will also extend a line of credit for a nominal interest rate and pay interest on money deposited with the bank.

Part II. Channel Participants and Their Decisions

The distribution channel for poker chips is composed of retailers, wholesalers, manufacturers, freight carriers, and a central bank. The market environment and decision-making structure of each are described below.

The retail market. Retailers are faced with four basic decisions in the channel simulation--produce mix, price setting, inventory management, and supplier negotiation. In terms of product mix, retailers are free to choose which of the product lines they wish to carry or emphasize. For example, each retailer will start out with 25 cases (chips) of blue poker chips, 50 cases of red chips, and 160 cases of white poker chips. However, a retailer may wish to unload his white chips and concentrate only on the blue and red, or vice versa.

Overall market demand for each poker chip product class will be determined largely by what the demand was for the chips during the previous period. However, market demand will not be stable from period to period but will in part be determined by the toss of two dice. The randomness in demand will be most pronounced for white chips and be least pronounced for blue chips. The specific equations which will be used to determine overall demand for each period for each product class are as follows:

$$\text{Blue chip market demand}_t = .85 \text{ X blue chip market demand}_{t-1} + .15 \text{ X blue chip market demand}_{t-1} \text{ X } \frac{\text{toss of dice}}{7}$$

$$\text{Red chip market demand}_t = .75 \text{ X red chip market demand}_{t-1} + .25 \text{ X red chip market demand}_{t-1} \text{ X } \frac{\text{toss of dice}}{7}$$

$$\text{White chip market demand}_t = .65 \text{ X white chip market demand}_{t-1} + .35 \text{ X white chip market demand}_{t-1} \text{ X } \frac{\text{toss of dice}}{7}$$

Illustration: If market demand for blue chips last period was 100 cases and the instructor threw a 9 with the dice, then market demand for blue chips this period would be 104 cases (.85 X 100 + 100 X 9/7). In contrast, if the market demand for white chips last period was 100 and the instructor threw a 9 with the dice, then market demand for white chips this period would be 110 (.65 X 100 + .35 X 100 X 9/7).

One of the most important, and perhaps most risky, decisions to be made by retailers is pricing. Since the market for poker chips is purely competitive within a product class, a retailer's share of the consumer market will be based solely on price. If the retailer prices the chips too high, he will only receive a small share of the market. If the retailer prices the chips too low, he will be allocated a substantial share of the market demand but may not have sufficient inventory to cover the demand. In addition, he may not be able to cover his out-of-pocket expenses.

Each retailer will establish a market price for each product class independently of the other retailers and without knowledge of

what his competitors' prices will be. The retailer is free to change prices from one period to the next.

New retail prices will be kept secret until the instructor signals that new prices are to be posted. At his signal, all retailers will simultaneously display their prices on a price list sheet. With all retail prices known for each poker chip class, market shares will be computed by the bank. A retailer's market share will be determined by the following formula:

$$\text{Market share} = \sqrt{\frac{\text{Average market price}}{\text{Retailer's price}}} - .83$$

Example: If all retailers select the same price for, say, blue chips, then each retailer would win 17% of the market demand for blue chips. If one retailer priced blue chips at 10% above the market price, and a second at 10% below the market price, and the remaining four retailers selected the market price, then the first retailer would receive 12% of the blue chip market, the second retailer would receive 22% of the market, and the remaining four retailers would each receive 17% of the market. Obviously, the problem will be to anticipate what your competitors' prices will be and price accordingly.

Inventory management is the third decision area which must be coordinated by all retailers. That is, retailers must decide on a continuing basis how much inventory should be on hand for blue chips, red chips, and white chips. The inventory decision is important because all sales must be made from existing inventory. If the demand for any poker chip exceeds the available supply of the retailer, the excess demand is lost to the retailer. In other words, the retailer can only sell out of current inventories. The retailer must be cautious, however, not to carry too much inventory for three reasons. First, excess inventory will reduce the retailer's flexibility to respond to changes in market demand. Second, it may cost the retailer money if it is financed by a loan from the bank. Finally, the Internal Revenue Service will assess a 10% carrying charge for all poker chips left in inventory at the end of each market period.

The last decision area which the retailer must manage is supplier negotiation. A retailer is free to buy from any of the three wholesalers.

An integral element in the supplier selection decision will be the negotiation with suppliers regarding purchase prices and order quantities. At the wholesale level, supplier prices and order quantities are not determined by the instructor but by private negotiation between suppliers and their customers. All retailer-supplier negotiations must be conducted in writing using the negotiation memorandum. Failure to use this form will result in a $100 fine.

Illustration: A retailer may initiate negotiations by forwarding a memorandum to a wholesaler inquiring as to what the delivered purchase price would be for 25 cases of blue chips. The wholesaler would then

respond in writing with the appropriate purchase price. The wholesaler might also elect to provide additional information which he considers relevant to the decision or propose new price-quantity alternatives for the retailer to consider.

Once the retailer and his supplier agree on a purchase price and order quantity, this agreement will be considered a contract. The order will then be shipped to the retailer, and the agreed-upon purchase price from the retailer will be collected.

Retailer-supplier negotiations are not constrained to specified time periods but may occur as frequently as the participating firms prefer. Retailers are cautioned, however, to recognize that consumer demand will occur on a regular schedule which will necessitate having sufficient inventory on hand at all times.

The wholesale market. Wholesalers in the channel simulation are faced with three basic decisions: (1) retailer negotiations, (2) manufacturer negotiations, and (3) inventory management. Retailer negotiations basically involve the process of agreeing on purchase prices and order quantities with retailers as described above. Wholesalers are responsible for transporting the freight to the retailers and normally there is no charge for this service.

Manufacturer negotiations are also similar to retailer-supplier negotiations. Wholesalers and manufacturers must agree on prices and quantities using the negotiation memorandum. Once the terms of sale are agreed upon, the manufacturer ships to the wholesaler via the freight line. The freight carrier collects the purchase price from the wholesaler and returns it to the manufacturer.

Inventory management presents the same management problem for the wholesaler as it does for the retailer. Wholesalers must assess how much inventory should be kept on hand in each product class in order to insure adequate supplies for retail customers and yet avoid unnecessary inventory investments. The inventory management problem is somewhat more complicated for the wholesaler since he must maintain inventory for quick access by one or more retailers.

The manufacturer market. Poker chip manufacturers are faced with four basic decisions: (1) wholesaler negotiation, (2) freight carrier negotiation, (3) production scheduling, and (4) inventory management. Manufacturer-wholesaler negotiation is essentially the same as wholesaler-retailer negotiations. The only difference between them is the addition of freight charges which must be borne by the manufacturer in shipping to wholesalers.

In the context of the channel simulation, manufacturers are located a considerable distance from the consumer market. Therefore, manufacturers must contract with a freight carrier to move their freight to the wholesale market. Since there are no established freight rates, manufacturers must negotiate with the freight carriers regarding

shipping charges and shipping quantities using the transportation negotiation memo.

Poker chip production is also an important decision area for manufacturers since it determines how much and what type poker chips will be available to channel members and the ultimate consumers. The production decision requires two separate but related decisions: (1) capacity purchases and (2) production scheduling. In terms of the capacity purchase decision, each manufacturer will begin the simulation with sufficient capacity to produce 200 cases of poker chips per time period. If, at any time, a manufacturer wishes to expand capacity, the manufacturer will have to submit a capacity purchase order to the central bank.

The manufacturer may purchase additional capacity according to the schedule presented in Table A-1. Observe that small capacity purchases are very expensive on a per unit basis, while larger capacity purchases are substantially less expensive on per unit basis. The problem for the manufacturer to resolve will be to balance the lower per unit costs of larger capacity purchases against the lower absolute cost of smaller capacity purchases.

The second element of the production decision is the scheduling of the actual production. The cost-quantity schedule for each product class is presented in Table A-2. As might be anticipated, the cost of production on a per unit basis declines with increasingly larger production runs. Again, the decision for the manufacturer to resolve is the balancing of the economies of larger production runs against the lower absolute costs of smaller production runs. The manufacturer may elect to produce poker chips of all the same color or in any combination of blue, red, and white. The only constraint with which the manufacturer must deal is that the total number of chips produced must not exceed the plant's current capacity.

Production runs are made once each quarter for each of the three product categories. To schedule production run, a manufacturer prepares a production order and submits it to the central bank. Production scheduled in the current period will not be available for sale until the start of the next period when it is delivered by the bank. The manufacturer must pay the bank for the inventory at the time it receives the inventory from the bank.

The fourth decision area which concerns manufacturers is inventory management. In the same fashion as retailers and wholesalers, manufacturers must decide how much inventory to have on hand in each product class in anticipation of wholesaler demand. The inventory decision is compounded by the one period delay in the production of poker chips. Thus, manufacturers must schedule production in the current period in order to have sufficient inventory on hand next period to meet actual demand.

The transportation market. Two transportation companies operate within the live channel simulation--Pony Express and Star Trek. Their

Table A-1. Capacity cost.

Quantity (Cases)	Cost
0-100	1,000
101-200	1,600
201-300	2,100
301-400	2,500
401-500	2,800
501-600	3,000

Table A-2. Production cost.

Quantity (Cases)	Blue Chip	Red Chip	White Chip
0-100	16.00	12.00	8.00
101-200	15.60	11.70	7.80
201-300	15.20	11.40	7.60
301-400	14.80	11.10	7.40
401-500	14.40	10.80	7.20
501-600	14.00	10.50	7.00
601-700	13.60	10.20	6.80
701-800	13.20	9.90	6.60
801-900	12.80	9.60	6.40
901-1,000	12.40	9.30	6.20
1,001 and above	12.00	9.00	6.00

function is twofold. First, they are responsible for moving all freight between the manufacturers and their wholesale customers. Second, they collect payment for the poker chips from wholesalers in behalf of manufacturers (all freight is shipped cash-on-delivery or C.O.D.).

As a matter of procedure, whenever a manufacturer elects to ship freight to a wholesaler, the transportation firm prepares the transportation report for all freight to be shipped to the wholesale market.

The Internal Revenue Service taxes all freight movements according to the schedule shown in Table A-3 plus a drop charge of $100. The interstate charges represent a tax on line-haul movements between manufacturers and the wholesale markets. The drop charge represents a tax on all drop points for freight movements. (Note, wholesalers pay no freight charges on any poker chips they personally deliver to retailers. It is assumed they have their own private truck fleet for local delivery.)

The Internal Revenue Service computes its interstate tax based upon the total number of poker chips reported on the transportation report. The drop freight tax is then computed based upon the number of individual wholesale establishments receiving shipments. All taxes are to be paid to the Internal Revenue Service before any freight is delivered and should accompany the bill of lading and the transportation report.

The transportation firms have two major decisions to make throughout the channel simulation: (1) rate negotiation and (2) freight consolidation. Each firm must set shipping rates through a process of negotiation with manufacturers. Transportation firms are free to charge whatever rate they can fairly negotiate from individual manufacturers. However, they must set their freight rates so as to meet their out-of-pocket expenses (taxes) and provide a reasonable profit. The transportation negotiation memo must be used for all transportation negotiations.

One method for the transportation firm to enhance their profit potential and/or lower the rates they charge to manufacturers is to consolidate shipments moving to the wholesale market. That is, freight carriers can effectively reduce their expenses by delaying the delivery of freight until they have more than one shipment to move. The incentive to consolidate shipments is due to the structure of the tax table and the single drop charge which provide for a lower per chip tax with larger shipping quantities.

Part III. Service Firms in the Distribution Channel

The two service firms in the channel simulation are the central bank and the Internal Revenue Service. The bank is a regulated monopoly for the purpose of facilitating channel exchanges. The bank performs six tasks or functions as follows:

Table A-3. Interstate freight taxes.

Number	Tax
0-50 cases	$140.00
51-100 cases	$230.00
101-150 cases	$310.00
151-200 cases	$380.00
201-250 cases	$440.00
251-400 cases	$490.00
401-450 cases	$530.00
451-500 cases	$560.00
501-550 cases	$580.00
551-600 cases	$590.00
600 cases or more	$600.00

1. The bank serves as the consumer market for poker chips. That is, the bank is the purchaser of all poker chips from the retailers as determined by overall market demand and individual market shares.

2. The bank serves as the source of poker chips for all manufacturers. Manufacturers purchase poker chips from the bank based upon available capacity and desired production schedules.

3. The bank serves as the purchaser of last resort. If any member of the channel decides to liquidate any part of its inventory, the bank will buy the poker chips at one-half the seller's purchase price. The seller's purchase price will be determined by his earliest purchase of the poker chips in question (First-in-First-out inventory valuation).

4. The bank serves as a lender to all channel participants. Any member of the channel can approach the bank for a loan for purposes of financing inventory, production, etc. The bank will lend in total up to 100% of the borrower's equity (common stock plus retained earnings). The bank charges 10% interest per period for all money on loan. Interest on loans is payable at the end of each market period.

5. The bank serves as a depository for all excess cash which other members of the channel might accumulate. The bank will pay 5% interest on all money per period it receives from channel members.

6. The bank collects three types of market information which channel members can purchase for a small fee. Specifically, the bank will sell retail price and market share information for any period for $150. In addition, it will sell market demand for each color chip for any period for $100. Finally, it will sell information on total production for each color chip for any period for $100. All information is at least one period old since it is based upon transactions in earlier periods.

The central bank earns an income by loaning money to channel members at an interest rate above the rate it pays for the money on deposit. In addition, the bank earns money by selling the market information to which it has access by virtue of its position as the buyer and seller of all poker chips. The bank must understand that all teams will not recognize the value of its financial services or the information it has to sell. Therefore, the bank will have to promote its services to the other members of the channel in order to maximize its return on investment.

The Internal Revenue Service is operated by the instructor, and its purpose is fourfold. First, it will assess transportation taxes on all freight moved by the transportation firms. Second, the Internal Revenue Service will assess an inventory carrying tax on all poker chips held by manufacturers, wholesalers, and retailers at the end of each market period according to the schedule shown in Table A-4. Third, the Internal Revenue Service will authorize all production capacity

Table A-4. Inventory carrying charges.

	Blue	Red	White
Manufacturers	$1.40	$ .90	$ .40
Wholesalers	$1.50	$1.00	$ .50
Retailers	$2.00	$1.50	$1.00

expansions. Manufacturers wishing to expand capacity purchase order form to the Internal Revenue Service together with the appropriate purchase price. The Internal Revenue Service will then forward a memo to the bank authorizing the expansion of capacity. (Note, the bank cannot accept production orders in excess of existing capacity. In order to allow sufficient time to process the paperwork, capacity expansion purchases should be made at least 5 minutes ahead of the production purchase.) Finally, the Internal Revenue Service will be responsible for auditing all companies to determine if they are correctly using the appropriate forms. The Internal Revenue Service will randomly audit each firm's records. Firms not using or incorrectly using the forms will be fined $100. The Internal Revenue Service will also collect the fines.

Part IV. Simulation Operating Rules

The operating rules for the channel simulation are relatively simple and include the following:

1. The channel simulation will be divided into seven market periods of approximately 50 minutes each. Each market period will begin with the tossing of the dice to determine market demand for the period. (The first two market periods will be 70 minutes each in order to give all the teams a chance to get a feel for the market.)

2. Manufacturers must purchase the poker chips which they ordered from the bank during the previous period within 10 minutes after the start of the market period.

3. New market prices must be submitted to the bank within 20 minutes after the start of the market period. Any retailer not submitting a price list at the specified time will loose the opportunity to sell its poker chips during the current market period (any chips not sold will be taxed by the Internal Revenue Service at the end of the market period).

4. Within 30 minutes after the start of the market period, the bank will inform each retail team of the quantities of each type of poker chip it will purchase at the stipulated price. Each team will have 10 minutes to prepare its order and return to the bank for the exchange of poker chips for money.

5. Each manufacturer must submit its purchase order no later than 5 minutes before the end of the market period.

6. The price-quantity negotiations and sale of poker chips between channel members may occur at any time during a market period. Channel members are cautioned, however, to watch the clock since all buying and selling should be coordinated with sales in the consumer market.

7. Capacity and production purchases by manufacturers may occur only once during each market period and purchase will not become available until the start of the next period.

8. All negotiations between channel members must be done on the appropriate negotiating forms. All negotiations must be dated in terms of the market period and time which it is sent. Failure to use the forms will result in fines. All negotiating forms must be turned in to the Internal Revenue Service at the end of each market period.

9. Student teams are required to allocate the responsibilities of buying, selling, marketing research, and accounting to different team members in order to facilitate decision making and avoid being caught short by the clock. It is also necessary to elect a president who can allocate tasks and make quick decisions during the simulation. The assignment of team responsibilities should be done prior to the first market period. The team members and their tasks must be recorded on the channel strategy analysis form along with the strategy of the team for that session.

10. It is necessary for each student team to have at least one calculator in order to facilitate the calculation of prices, breakeven points, costs, etc.

11. At the end of each 50-minute market period, there will be a 10-minute "cooling off" period. During this time, all transactions and negotiations will be temporarily interrupted, and an accounting will be made of the firm's performance during the previous market period. Each firm should prepare an income statement and balance sheet for the period. In addition, the firm's accountant should estimate its inventory carrying charge and pay the appropriate tax to the Internal Revenue Service. The income statement, balance sheet, and inventory tax form must be turned in to the Internal Revenue Service before the start of the next market period.

12. The instructor cannot force a potential buyer to buy poker chips or a potential seller to sell poker chips if either party decides to cancel a previously agreed upon contract. However, the instructor will enforce a penalty clause in a contract. A contract will be considered to be concluded when both firms agree to a specific price and quantity. This agreement will be shown by the initials of each company on the appropriate negotiating forms.

13. The financial position of each team at the start of the simulation will be as follows (Table A-5).

14. Before the start of the first period of the channel simulation, all manufacturers are to turn in purchase order to the bank. The poker chips will be ready to be picked up from the bank within 5 minutes after the start of the simulation.

Table A-5. Financial position of each team at the beginning of the simulation.

Channel Member	Cash	Inventory	Total Assets	Debt	Common Stock	Retained Earnings	Total Debt Plus Equity
Manufacturers	5,000	0	5,000	0	4,500	500	5,000
Wholesalers	6,000	0	6,000	0	5,400	600	6,000
Retailers	3,500	0	3,500	0	3,150	350	3,500
Transportation	500	0	500	0	450	50	500
Bank	50,000	NA	NA	50,000	0	0	NA

15. Transportation firms must prepare a rate schedule before the start of the first period. The schedule need not be distributed to the manufacturers but should be used for negotiating purposes.

16. Manufacturers should have established price points (less transportation charges) before the start of the first market period in order to facilitate negotiations with wholesalers.

17. On the channel strategy analysis form, each firm must indicate their buying and selling strategy for each session. At the end of the session, each firm should review their strategy and events in the session. This review must be reported on the appropriate section of the channel strategy analysis form. The channel strategy analysis form must be turned in at the end of each session.

18. At the end of each simulation session, each student team must turn in all poker chips and the notebook. The poker chips will be distributed at the start of the next simulation session.

APPENDIX B

ORGANIZATIONAL PERCEPTION QUESTIONNAIRE

	Very Strongly Agree	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Very Strongly Disagree
1. During the simulation, the function that I performed for my firm was different from those performed by other members of my firm.							
2. I understood the manner in which the actions of my firm were coordinated.							
3. The primary goal upon which my firm acted was to come to agreement with other firms as quickly as possible.							
4. Prior to coming to the simulation, the members of my firm had worked together in organizing for the simulation.							
5. I thought that my firm would make more profit than it did.							
6. A division of labor did not exist within my firm.							
7. I had no basis for evaluating the information the other members of my firm gave me.							
8. The primary goal upon which my firm acted was to make as large a profit as possible.							
9. The relationship among the members of my firm could be characterized as cooperative.							
10. I did not understand the functions that I was to perform during the simulation.							
11. I don't think that the other members of my firm knew what they were doing.							
12. (Not applicable for the president) Within my firm, the president had more say in the decisions than I did.							
13. The way in which I performed my functions depended on how the other members of my firm performed their functions.							
14. The primary goal upon which our firm acted was to maintain as friendly a relationship as possible with the other firms.							
15. (Not applicable for the marketing researcher) Within my firm, the marketing researcher had more say in the decisions than I did.							
16. Prior to coming to the simulation, the members of my firm had a chance to get to know one another.							
17. I knew what my firm was doing all the time.							
18. In my estimation, the goals of my firm were reached.							
19. The position assignment within my firm was not equitable.							
20. Without a president, my firm would have had difficulty functioning.							
21. The other firms seemed more capable of coping with this exercise than my firm.							
22. There seemed to be a feeling of comradeship among the members of my firm.							
23. (Not applicable for salesmen or purchasing agents) Within my firm, the salesmen (purchasing agents) had more to say in the decisions than I did.							

APPENDIX C

ITEMS DEVELOPED FOR MEASURING PERCEPTUAL VARIABLES

1. If this supplier were taken out of the channel, what effect would it have had on your firm's achievement of its goals?

Achievement would have been impossible — 10 9 8 7 6 5 4 3 2 1 0 — No effect on achievement

2. Overall, how dependent was your firm on this supplier in achieving your goals?

Completely dependent — 10 9 8 7 6 5 4 3 2 1 0 — Not dependent

3. How strong was this supplier's bargaining position during negotiations with your firm over purchase prices and quantities?

Very Strong | Strong | Somewhat Strong | Neither Strong Nor Weak | Somewhat Weak | Weak | Very Weak

4. How strong was this supplier's bargaining position during negotiations regarding your firm's channel strategy (exclusive dealing, long-term price, agreements, sharing market information, consignment selling, etc.)?

Very Strong | Strong | Somewhat Strong | Neither Strong Nor Weak | Somewhat Weak | Weak | Very Weak

5. Overall, how successful was this supplier in winning concessions from your firm in all aspects of channel negotiations?

Very successful | Successful | Somewhat successful | Neither successful nor unsuccessful | Somewhat unsuccessful | Unsuccessful | Very unsuccessful

6. If power is defined as the ability to change another's decisions, how much power did this supplier have over your firm in all phases of channel negotiations?

Complete power — 10 9 8 7 6 5 4 3 2 1 0 — No power

The following is a list of words or phrases which could be used to describe this supplier. Place a check (✓) on the line nearest to the word that most closely represents your feeling.

		Extremely	Very	Somewhat	Neither	Somewhat	Very	Extremely	
7.	hostile								friendly
8.	cooperative								not cooperative
9.	dishonest								trustworthy
10.	calculating								not calculating

APPENDIX D

ROTATED FACTOR MATRIX OF ORIGINAL CONFLICT QUESTIONNAIRE

Table D-1. Rotated factor matrix.

Variables	Factors				
	1	2	3	4	5
Anxious to make a satisfactory contract--Not anxious to make a satisfactory contract	-0.18731	0.15007	0.00638	-0.71666	0.05301
Greedy--Not greedy	0.41790	-0.53166	0.22123	0.32219	-0.17177
Flexible--Rigid	-0.56172	0.15091	-0.16004	-0.57277	0.05646
Hostile--Friendly	0.12618	-0.60646	-0.15234	0.41960	0.34909
Not antagonistic--Antagonistic	-0.37238	0.08059	-0.12408	-0.75141	-0.00327
Disparaging--Not disparaging	-0.06055	-0.64771	-0.07919	0.26479	0.10345
Not malicious--malicious	-0.40976	0.30528	0.32384	-0.52360	-0.35328
Stubborn--Desire to give and take	0.50735	-0.61449	0.25228	0.13301	0.06335
Conciliatory--Not conciliatory	-0.73832	0.13863	0.00286	-0.13494	-0.32046
Unresponsive--Responsive	0.46348	-0.65994	0.13623	0.04008	-0.01384
Fair--Unfair	-0.75395	0.26429	0.02448	-0.22059	0.06345
Premeditated--Random	-0.07184	-0.07707	0.21474	0.01418	0.78487
Aggressive--Passive	0.13624	-0.25863	0.50805	-0.26208	0.48451
Willing to compromise--Not willing to compromise	-0.74011	0.16556	-0.19124	-0.35580	-0.02235
Tyrannical--Benevolent	0.18055	-0.84040	0.07497	0.09056	0.08809
Deceptive--Open	0.31224	-0.81024	0.02461	-0.03454	-0.02780
Cooperative--Not cooperative	-0.77356	0.25263	-0.09427	-0.29096	0.07047
Dishonest--Trustworthy	0.11479	-0.82524	-0.15525	0.10753	0.11935
Tried to maximize profits--Did not try to maximize profits	0.05042	-0.05443	0.81540	0.05663	0.11116
Realistic--Unrealistic	-0.69916	0.08904	0.22446	-0.08785	0.13960
Calculating--Not calculating	-0.36850	-0.03728	0.69903	0.11703	0.09652
Broad-minded--Narrow-minded	-0.71413	0.32860	0.19619	-0.14390	0.14770
Frustrating--Encouraging	0.42116	-0.68825	0.17188	0.08961	0.02829
Helpful--Harmful	-0.72667	0.23641	0.09942	-0.01289	-0.09653
Tried to obstruct--Supportive	0.16988	-0.81503	0.01559	0.15030	-0.10282
Permissive--Resisting	-0.73555	0.18961	0.03985	-0.15820	-0.08770
Ruthless--Empathetic	0.22694	-0.69005	0.21702	-0.08855	0.20049

APPENDIX E

RESULTS OF ORGANIZATIONAL PERCEPTION

Table E-1. Mann-Whitney U's and levels of significance for organizational perception: Open versus basal groups.

Question	n	U	Significance
1	151	1330	.000**
2	151	1064	.000**
3	152	1786	.000**
4	151	684	.000**
5	151	1824	.000**
6	150	1558	.000**
7	150	1482	.000**
8	152	1862	.000**
9	151	532	.000**
10	152	912	.000**
11	152	1558	.000**
12	144	2166	.031*
13	151	1292	.000**
14	151	2166	.003**
15	143	1440	.000**
16	152	1330	.000**
17	151	2508	.078
18	152	1900	.000**
19	151	1938	.000**
20	151	2356	.021*
21	152	1254	.000**
22	152	874	.000**
23	113	1330	.264

*Significant at $p < .05$.

**Significant at $p < .01$.

Table E-2. Mann-Whitney U's and levels of significance for organizational perception: Forced versus basal groups.

Question	n	U	Significance
1	128	992	.000*
2	127	192	.000*
3	127	960	.000*
4	127	704	.000*
5	128	864	.000*
6	128	768	.000*
7	126	640	.000*
8	128	1824	.115
9	128	32	.000*
10	128	96	.000*
11	128	576	.000*
12	117	1600	.265
13	128	1088	.000*
14	128	1024	.000*
15	124	1440	.000*
16	128	1088	.000*
17	127	1248	.000*
18	127	1344	.000*
19	128	1152	.000*
20	127	1760	.086
21	128	608	.000*
22	128	224	.000*
23	98	544	.000*

*Significant at $p < .01$.

Table E-3. Mann-Whitney U's and levels of significance for organizational perception: Open versus forced groups.

Question	n	U	Significance
1	139	2161	.294
2	138	1814	.013*
3	139	2175	.340
4	138	2004	.112
5	139	2193	.372
6	138	1896	.037*
7	136	1929	.095
8	140	2063	.115
9	139	1976	.061
10	140	1663	.001**
11	140	2020	.017
12	121	1519	.134
13	139	2137	.249
14	139	2089	.174
15	127	1647	.061
16	140	2226	.368
17	138	1975	.086
18	139	2166	.323
19	139	2203	.387
20	138	1931	.059
21	140	2283	.521
22	140	2112	.160
23	71	442	.025*

*Significant at $p < .05$.

**Significant at $p < .01$.

Table E-4. Mean scores and levels of significance for class exams: Open versus forced groups.

Exam	Group	n	Mean	Standard Deviation	Significance
1	Open	99	33.19	6.339	
					.464
1	Forced	77	33.87	5.720	
2	Open	98	29.05	6.062	
					.068
2	Forced	77	27.47	5.131	

APPENDIX F

REANALYSIS INFORMATION

Table F-1. Firms ranked by evoked set size.

Name	Type	Condition	Percentage Size of Evoked Set
Four Kings	R	F	100
Hearts	R	F	100
Diamonds	R	O	75
Full House	M	F	75
Ace's	R	F	75
Caesar's Palace	R	F	75
Full House	M	O	62
Hearts	R	O	62
Perfect Poker	M	F	50
Royal Flush	M	F	50
Tripoly Corp.	M	O	50
Casino Royal	R	F	50
Diamonds	R	F	50
Royal Flush	M	O	40
Four Kings	R	O	36
Ace's	R	O	36
Perfect Poker	M	O	20
Tripoly Corp.	M	O	20
Casino Royal	R	O	12

R = Retailer

M = Manufacturer

O = Open

F = Forced

Table F-2. Firms used in extreme approach.

Name	Type	Condition	Evoked Set Percentage Group
Four Kings	R	F	High
Hearts	R	F	High
Diamonds	R	O	High
Full House	M	F	High
Ace's	R	F	High
Caesar's Palace	R	F	High
Full House	M	O	High
Caesar's Palace	R	O	High
Hearts	R	O	High
Royal Flush	M	O	Low
Four Kings	R	O	Low
Ace's	R	O	Low
Perfect Poker	M	O	Low
Tripoly Corp.	M	O	Low
Casino Royal	R	O	Low

R = Retailer

M = Manufacturer

O = Open

F = Forced

Table F-3. Firms used in inclusive approach.

Name	Type	Condition	Evoked Set Percentage Group
Four Kings	R	F	High
Hearts	R	F	High
Diamonds	R	O	High
Full House	M	F	High
Ace's	R	F	High
Caesar's Palace	R	F	High
Full House	M	O	High
Caesar's Palace	R	O	High
Hearts	R	O	High
Perfect Poker	M	F	Low
Royal Flush	M	F	Low
Tripoly Corp.	M	O	Low
Casino Royal	R	F	Low
Diamonds	R	F	Low
Royal Flush	M	O	Low
Four Kings	R	O	Low
Ace's	R	O	Low
Perfect Poker	M	O	Low
Tripoly Corp.	M	O	Low
Casino Royal	R	O	Low

R = Retailer

M = Manufacturer

O = Open

F = Forced

Table F-4. Results of Fisher's test on reanalysis groups in both approaches.

Test	Approach	n	Significance
Group X Condition	Extreme	15	.58
Group X Type	Extreme	15	.302
Group X Condition	Inclusive	20	.10
Group X Type	Inclusive	20	.648

APPENDIX G

DATA SUMMARIES

Table G-1. Open condition summary data of dependence.

Firm	Dependent on	Dependence
Full House (M)	None	
Perfect Poker (M)	Black Jack (W)	.333
Royal Flush (M)	Kings and Queens (W)	.9757
Tripoly Corp. (M)	MGM (W)	1.0000
Ace's (R)	Kings and Queens (W)	1.0000
Casino Royal (R)	Kings and Queens (W)	.9115
	MGM (W)	.0031
	Royal Flush (M)	.0000
Caesar's Palace (R)	Black Jack (W)	.1775
	Kings and Queens (W)	.2925
	MGM (W)	.1588
	Tripoly Corp. (M)	.0040
Diamonds (R)	Kings and Queens (W)	.1738
	MGM (W)	.4762
	Royal Flush (M)	.0043
Four Kings (R)	Black Jack (W)	.3336
	MGM (W)	.5648
	Perfect Poker (M)	.0000
Hearts (R)	Black Jack (W)	.0750
	MGM (W)	.4020

R = Retailer

M = Manufacturer

W = Wholesaler

0 = No Dependence

1 = Complete Dependence

Table G-2. Open condition summary data of perceptual dependence--question 1.

Firm	n	Median
Full House (M)	14	6.167
Perfect Poker (M)	9	6.75
Royal Flush (M)	10	5.0
Tripoly Corp. (M)	14	7.5
Ace's (R)	7	5.375
Casino Royal (R)	3	3.0
Caesar's Palace (R)	6	4.5
Diamonds (R)	9	2.333
Four Kings (R)	11	3.25
Hearts (R)	13	5.375

R = Retailer

M = Manufacturer

0 = No effect on achievement

10 = Achievement would have been impossible

Table G-3. Open condition summary data of perceptual dependence--question 2.

Firm	n	Median
Full House (M)	14	6.167
Perfect Poker (M)	9	7.0
Royal Flush (M)	10	8.167
Tripoly Corp. (M)	14	8.0
Ace's (R)	7	5.0
Casino Royal (R)	3	5.0
Caesar's Palace (R)	5	3.0
Diamonds (R)	9	4.25
Four Kings (R)	11	5.625
Hearts (R)	14	5.70

R = Retailer

M = Manufacturer

0 = Not Dependent

10 = Completely Dependent

Table G-4. Open condition data summary of perceived power--question 1.

Firm	n	Median
Full House (M)	14	3.929
Perfect Poker (M)	9	4.75
Royal Flush (M)	10	4.0
Tripoly Corp. (M)	14	5.0
Ace's (R)	7	3.25
Casino Royal (R)	3	4.250
Caesar's Palace (R)	6	4.5
Diamonds (R)	9	4.0
Four Kings (R)	11	5.25
Hearts (R)	14	4.667

R = Retailer

M = Manufacturer

1 = Very Strong

7 = Very Weak

Table G-5. Open condition summary data of perceived power--question 2.

Firm	n	Median
Full House (M)	14	3.833
Perfect Poker (M)	9	5.083
Royla Flush (M)	10	4.0
Tripoly Corp. (M)	14	7.75
Ace's (R)	7	4.33
Casino Royal (R)	3	4.75
Caesar's Palace (R)	6	4.5
Diamonds (R)	9	3.625
Four Kings (R)	11	4.667
Hearts (R)	14	4.250

R = Retailer

M = Manufacturer

1 = Very Strong

7 = Very Weak

Table G-6. Open condition summary data of perceived power--question 3.

Firm	n	Median
Full House (M)	14	3.250
Perfect Poker (M)	9	4.525
Royal Flush (M)	9	5.75
Tripoly Corp. (M)	14	5.0
Ace's (R)	7	4.0
Casino Royal (R)	3	4.75
Caesar's Palace (R)	6	3.5
Diamonds (R)	9	3.667
Four Kings (R)	11	3.75
Hearts (R)	14	4.10

R = Retailer

M = Manufacturer

1 = Very Successful

7 = Very Unsuccessful

Table G-7. Open condition summary data of perceived power--question 4.

Firm	n	Median
Full House (M)	14	5.25
Perfect Poker (M)	9	5.75
Royal Flush (M)	10	6.0
Tripoly Corp. (M)	14	5.0
Ace's (R)	7	3.0
Casino Royal (R)	3	3.75
Caesar's Palace (R)	5	1.33
Diamonds (R)	9	4.8
Four Kings (R)	11	4.75
Hearts (R)	14	4.75

R = Retailer

M = Manufacturer

0 = No Power

10 = Complete Power

Table G-8. Open condition summary data of perceived conflict--question 1.

Firm	n	Median
Full House (M)	14	3.357
Perfect Poker (M)	7	2.917
Royal Flush (M)	10	2.50
Tripoly Corp. (M)	14	2.278
Ace's (R)	5	2.0
Casino Royal (R)	3	2.0
Caesar's Palace (R)	5	2.25
Diamonds (R)	9	2.875
Four Kings (R)	11	3.25
Hearts (R)	14	3.5

R = Retailer

M = Manufacturer

1 = Extremely Hostile

7 = Extremely Friendly

Table G-9. Open condition summary data of perceived conflict--question 2.

Firm	n	Median
Full House (M)	14	4.643
Perfect Poker (M)	7	4.75
Royal Flush (M)	10	5.167
Tripoly Corp. (M)	14	5.625
Ace's (R)	6	5.833
Casino Royal (R)	3	6.0
Caesar's Palace (R)	5	3.25
Diamonds (R)	9	5.125
Four Kings (R)	11	2.75
Hearts (R)	14	4.944

R = Retailer

M = Manufacturer

1 = Extremely Cooperative

7 = Extremely Not Cooperative

Table G-10. Open condition summary data of perceived conflict--question 3.

Firm	n	Median
Full House (M)	14	3.30
Perfect Poker (M)	7	4.0
Royal Flush (M)	10	2.5
Tripoly Corp. (M)	14	2.056
Ace's (R)	5	2.0
Casino Royal (R)	3	3.75
Caesar's Palace (R)	5	5.0
Diamonds (R)	9	3.6
Four Kings (R)	11	4.6
Hearts (R)	13	3.33

R = Retailer

M = Manufacturer

1 = Extremely Dishonest

7 = Extremely Trustworthy

Table G-11. Open condition summary data of perceived conflict--question 4.

Firm	n	Median
Full House (M)	14	3.5
Perfect Poker (M)	9	5.0
Royal Flush (M)	10	5.5
Tripoly Corp. (M)	14	5.0
Ace's (R)	5	5.75
Casino Royal (R)	3	4.0
Caesar's Palace (R)	5	4.33
Diamonds (R)	9	4.625
Four Kings (R)	11	5.25
Hearts (R)	13	3.80

R = Retailer

M = Manufacturer

1 = Extremely Calculating

7 = Extremely Not Calculating

Table G-12. Forced condition summary data of dependence.

Firm	Dependent on	Dependence
Full House (M)	Black Jack (W)	.1645
	MGM (W)	.2136
Perfect Poker (M)	MGM (W)	.5291
Royal Flush (M)	Kings and Queens (W)	1.0000
Tripoly Corp. (M)	Black Jack (W)	.1805
Ace's (R)	Black Jack (W)	.0177
	MGM (W)	.6661
Casino Royal (R)	Kings and Queens (W)	.4025
	MGM (W)	.0001
Caesar's Palace (R)	Kings and Queens (W)	.0224
	MGM (W)	.5931
Diamonds (R)	Black Jack (W)	1.0000
Four Kings (R)	Kings and Queens (W)	.2528
	MGM (W)	.0150
Hearts (R)	Black Jack (W)	.2555
	Kings and Queens (W)	.1064
	MGM (W)	.0157

R = Retailer

M = Manufacturer

W = Wholesaler

0 = No Dependence

1 = Complete Dependence

Table G-13. Forced condition summary data of perceptual dependence--question 1.

Firm	n	Median
Full House (M)	8	4.5
Perfect Poker (M)	5	8.0
Royal Flush (M)	7	5.25
Tripoly Corp. (M)	2	9.0
Ace's (R)	7	7.0
Casino Royal (R)	4	5.5
Caesar's Palace (R)	4	5.5
Diamonds (R)	4	6.5
Four Kings (R)	6	4.167
Hearts (R)	9	3.75

R = Retailer

M = Manufacturer

0 = No effect on achievement

10 = Achievement would have been impossible

Table G-14. Forced condition summary data of perceptual dependence--question 2.

Firm	n	Median
Full House (M)	8	5.0
Perfect Poker (M)	5	8.0
Royal Flush (M)	7	5.75
Tripoly Corp. (M)	2	9.0
Ace's (R)	7	6.25
Casino Royal (R)	4	3.5
Caesar's Palace (R)	4	6.0
Diamonds (R)	4	4.5
Four Kings (R)	6	2.5
Hearts (R)	9	3.667

R = Retailer

M = Manufacturer

0 = Not Dependent

10 = Completely Dependent

Table G-15. Forced condition summary data of perceived power--question 1.

Firm	n	Median
Full House (M)	8	4.50
Perfect Poker (M)	5	5.125
Royal Flush (M)	7	4.333
Tripoly Corp. (M)	2	6.0
Ace's (R)	7	4.25
Casino Royal (R)	4	6.50
Caesar's Palace (R)	4	4.833
Diamonds (R)	4	2.50
Four Kings (R)	6	3.167
Hearts (R)	7	3.667

R = Retailer

M = Manufacturer

1 = Very Strong

7 = Very Weak

Table G-16. Forced condition summary data of perceived power--question 2.

Firm	n	Median
Full House (M)	8	4.10
Perfect Poker (M)	5	5.125
Royal Flush (M)	7	4.125
Tripoly Corp. (M)	2	6.0
Ace's (R)	7	4.875
Casino Royal (R)	4	6.833
Caesar's Palace (R)	4	5.0
Diamonds (R)	4	3.0
Four Kings (R)	6	3.167
Hearts (R)	9	3.40

R = Retailer

M = Manufacturer

1 = Very Strong

7 = Very Weak

Table G-17. Forced condition summary data of perceived power--question 3.

Firm	n	Median
Full House (M)	8	4.50
Perfect Poker (M)	5	5.667
Royal Flush (M)	7	4.0
Tripoly Corp. (M)	2	6.0
Ace's (R)	7	5.0
Casino Royal (R)	4	6.50
Caesar's Palace (R)	4	5.833
Diamonds (R)	4	2.50
Four Kings (R)	6	3.50
Hearts (R)	9	4.625

R = Retailer

M = Manufacturer

1 = Very Successful

7 = Very Unsuccessful

Table G-18. Forced condition summary data of perceived power--question 4.

Firm	n	Median
Full House (M)	7	3.333
Perfect Poker (M)	4	6.167
Royal Flush (M)	5	4.875
Tripoly Corp. (M)	2	7.0
Ace's (R)	5	4.250
Casino Royal (R)	3	4.0
Caesar's Palace (R)	3	4.250
Diamonds (R)	3	4.0
Four Kings (R)	6	3.50
Hearts (R)	6	3.00

R = Retailer

M = Manufacturer

0 = No Power

10 = Complete Power

Table G-19. Forced condition summary data of perceived conflict--question 1.

Firm	n	Median
Full House (M)	6	4.167
Perfect Poker (M)	5	2.0
Royal Flush (M)	7	2.375
Tripoly Corp. (M)	2	3.0
Ace's (R)	6	1.833
Casino Royal (R)	4	2.0
Caesar's Palace (R)	4	2.0
Diamonds (R)	3	2.75
Four Kings (R)	5	3.0
Hearts (R)	8	1.70

R = Retailer

M = Manufacturer

1 = Extremely Hostile

7 = Extremely Friendly

Table G-20. Forced condition summary data of perceived conflict--question 2.

Firm	n	Median
Full House (M)	6	3.50
Perfect Poker (M)	5	5.875
Royal Flush (M)	7	5.8
Tripoly Corp. (M)	2	3.0
Ace's (R)	7	5.375
Casino Royal (R)	4	3.5
Caesar's Palace (R)	4	5.0
Diamonds (R)	4	6.50
Four Kings (R)	5	4.0
Hearts (R)	8	5.833

R = Retailer

M = Manufacturer

1 = Extremely Cooperative

7 = Extremely Not Cooperative

Table G-21. Forced condition summary data of perceived conflict--question 3.

Firm	n	Median
Full House (M)	6	4.0
Perfect Poker (M)	5	2.0
Royal Flush (M)	7	2.0
Tripoly Corp. (M)	2	3.0
Ace's (R)	6	2.5
Casino Royal (R)	4	2.0
Caesar's Palace (R)	4	2.167
Diamonds (R)	4	2.5
Four Kings (R)	5	3.125
Hearts (R)	8	1.833

R = Retailer

M = Manufacturer

1 = Extremely Dishonest

7 = Extremely Trustworthy

Table G-22. Forced condition summary data of perceived conflict--question 4.

Firm	n	Median
Full House (M)	7	4.375
Perfect Poker (M)	5	4.333
Royal Flush (M)	7	5.0
Tripoly Corp. (M)	2	3.0
Ace's (R)	6	4.0
Casino Royal (R)	4	3.5
Caesar's Palace (R)	4	4.5
Diamonds (R)	4	3.5
Four Kings (R)	6	5.0
Hearts (R)	8	5.0

R = Retailer

M = Manufacturer

1 = Extremely Calculating

7 = Extremely Not Calculating

VITA

John C. Keyt was born in Bristol, Virginia, on January 17, 1950. He attended elementary schools in that city and was graduated from Virginia High School in 1968. In August of 1973, he received a Bachelor of Science degree in Marketing from East Tennessee State University. The following September he entered Graduate School at the same university and earned the Master of Business Administration degree in December 1974.

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