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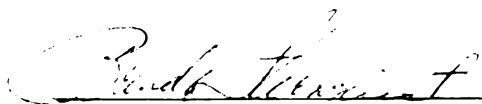GROUP-BASED RIVALRY:
A SOCIAL CONFLICT THEORY ON THE INFLUENCE
OF GROUP MEMBERSHIP ON COMPETITIVE BEHAVIOR

presented by

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GROUP-BASED RIVALRY:
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By

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ABSTRACT

GROUP-BASED RIVALRY:
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A new form of competition, group versus group, is emerging in many industries as firms form groups to increase their competitive edge in the marketplace. This paper develops a theory to explain the effect group membership has on inter-group competitive behavior and its outcomes. Social conflict theory is used as the basis from which to derive the proposed theory. Rivalry research provides support for propositions concerning behaviors of individuals in competitive situations. Group research provides the foundation for proposing the effects of group membership on behavior. The merging of social conflict theory, rivalry research and group research provides a new method of examining the influence of group membership on competitive behavior. The research found that, for retail cooperative members, group member identification with the group of affiliation resulted in an increased awareness of goal conflicts with rivals, and, that feelings of group identification inspired action of group members, manifested in an increased use of rivalrous behaviors. Contrary to expectations, increased awareness of goal conflict did not influence the use of rivalrous behaviors, and higher levels of rivalrous behaviors did not relate to financial performance.

ACKNOWLEDGMENTS

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Chapter 1

Introduction

Significance of Study

In 1995, the top one hundred U.S. retailers averaged sales increases of 10.4% with profit

decreases of 24.4% over 1994 (Schulz 1996a). Some industry observers contend that the

current environment is the most difficult since the early 1970s (Johnson and Mendelson

1996). Because of an "intensive wave of bankruptcies, mergers and store closings" in

1995 (Schulz 1996a, p. 56), fewer, larger competitors remain to capture consumer dollars.

An examination of 1982, 1987 and 1992 retail concentration ratios does confirm that

smaller players are losing market share to larger players. The four largest retailers

controlled 5.5% of retail sales in 1982, 5.2% in 1987, and increased their share to 6.8% in

1992. The fifty largest retail firms captured 19.8% of retail sales in 1982, 20.3% in 1987,

and 22.4% in 1992 (U.S. Department of Commerce 1995, 1990, 1985). Yet even large

size does not guarantee success in this trying environment. In the fourth quarter of 1995,

Wal-mart, the nation's largest retailer, recorded its first earnings decline in 99 quarters

("State of the Industry," 1996). What effect will such intense competition have on

retailers and the retail industry? What can retailers do to survive such intense

competition?

For many years, firms have used partnering strategies to compete in threatening environments. These collaborative partnering efforts, often called strategic alliances, take many different forms, ranging from "the simplest transactional relationship to licensing and outsourcing to anything short of a merger" (Maynard 1996, p. 19). To help classify these partnering strategies, Maynard proposed a spectrum of collaborative business relationships based on degree of collaboration, level of formality and amount of expected added value. For example, low levels of collaboration and formality characterize external, tactical transactions, such as arm's length agreements with vendors and equity investments, and result in a small amount of added value to the partners. Extended partner networks, such as buying cooperatives, franchise agreements and joint ventures, require higher levels of formality and collaboration to execute than tactical transactions. We call these extended relationships strategic alliances because the partnering firms rely on the capture of interfirm synergies to provide added value. Mergers and acquisitions are examples of partnerships using internal growth to add value. These strategies allow partners to realize synergies and share risks and benefits by internalizing them (Gomez-Casseres 1994, Maynard 1996).

Estimates show that between 1986 and 1996, the number of alliance partnerships, as defined in the spectrum proposed by Maynard, increased 25% annually (Maynard 1996). The result of the popularity of alliance partnering for competing in difficult environments is that, in many industries, multiple groups are beginning to appear. In other words, a new form of competition is emerging: "group versus group." (Gomez-Casseres 1994, p. 62). Industry observers believe that increased formation of alliance groups will intensify

industry competition (Gomez-Casseres 1994). The challenge of this new competitive situation is to understand how group membership influences the competitive behaviors of group members. Developing an understanding of group-based competition is a necessary skill for survival in today's marketplace. The purpose of this paper is to develop a theory of inter-group competitive behavior that will enable groups in an industry to better understand their competitive environment.

Problem Definition

In the fierce economy of the 1990s, organizations are turning to group-based methods of competing to fully capitalize on their resources. These organizations are exploring largely unknown territory because theories that explain and predict dynamic, group-based competition do not exist. In addition, little empirical evidence exists to explain the effect that group-based competition has on firms, groups or the industry. This paper seeks to solve this problem by developing a theory that will propose the effects of group membership on competitive behaviors and the outcomes of those behaviors.

Recent empirical studies in the strategy literature (Chen 1996a; Chen 1996b; Chen and Hambrick 1995; Smith, et al. 1997) have added to our understanding of competitive behaviors of firms by analyzing the conduct of individual pairs of specific firms in a single industry. Strategists term this dyadic behavior rivalry. We distinguish rivalry, the competitive interactions of individual pairs of specific firms, from competition, a general term describing actions of nonspecific firms in a market. By distinguishing between rivalry and competition, strategy researchers have provided a more effective method of explaining

and predicting causes and characteristics of competitive behavior than economic theories and competitor analysis. This paper will apply the construct of rivalry to group-based behavior to develop an effective method of analyzing group-based competition.

I derive the proposed theory from social conflict theory. Its use is particularly appropriate for the development of a theory of intergroup rivalry because it examines the role of conflict between groups in a social system. Social conflict theory provides a realistic picture of the competitive climate faced by practitioners because it recognizes the dynamics of group interdependence. In deriving this marketing-oriented theory of intergroup rivalry from social conflict theory, the proposed theory will address the following research questions: how does group membership influence the behavior of group members, and, what impact does the behavior of group-oriented members have on the outcomes of rivalrous interactions?

A review of relevant literature follows in Chapter 2. I review the concept of rivalry and present its dimensions. Then I provide a review of group research, focusing on group identification and group cohesion. In the section entitled Theoretical Framework I explore the relevance of social conflict theory to the development of the proposed theory. Finally, the propositions and supporting text are presented in the Theory Development section. Chapter 3 explains the methodology, including sampling, measures, instrument, data collection and data analysis. Chapter 4 presents results of the analysis. A discussion of results, limitations and implications for future research follow in Chapter 5.

Chapter 2

Literature Review

Competitive tension exists between individual firms in a market. Such tensions are the unit of analysis in studies of individual rivalry. Competitive tensions also exist between alliance groups. This tension between groups is the unit of analysis in studies of intergroup rivalry. The merging of rivalry and group research provides a new method of examining the influence of group membership on competitive behavior. Social conflict theory effectively explains implications of group-based rivalry, which examines conflict episodes between groups in a social system. This chapter begins with reviews of rivalry and group research. In the last section of the chapter I explain the relevance of social conflict theory and develop propositions for this group-based theory of rivalry.

Rivalry

Rivalry has been a topic of study in several disciplines (see Appendix A for rivalry literature review table). Management strategists and economists define it as: firms jockeying for incompatible market positions (Porter 1980; Scherer and Ross 1990), firms jockeying for incompatible market positions and resources (Baum and Korn 1996), firms jockeying for patronage of buyers (Brenner 1987), and competitive interactions between specific pairs/sets of firms (Chen 1996a; Chen, Smith and Grimm 1992; Smith, et al.

1997). Rivalry refers to the exchange of competitive moves between specific firms, which distinguishes it from competition, a general concept describing a market or industry rather than specific entities within it (Baum and Korn 1996; Chen 1996a; Chen 1996b; Chen and Hambrick 1995; Chen and MacMillan 1992; Chen, Smith and Grimm 1992; Smith, et al. 1997). Sociologists describe rivalry as a competitive outcome, where the goal is to minimize the absolute gains of the competitor (Knight and Kagan 1977). Social psychologists define sibling rivalry as children in a family competing for parental attention (Irish 1964). Studies of sibling rivalry suggest it to be a dimension of a relationship, which results in conflict (Furman and Buhrmester 1985; Rafaelli 1992). Studies of rivalry between individuals comprise the bulk of rivalry research. Strategic management studies have examined inter-firm rivalry and behavioral science studies examined sibling rivalry. Only a few studies of rivalry between groups have appeared, primarily in the strategic group literature.

Group Research

Sociologists derive group identification from social identity theory (Kelly and Kelly 1994), which proposes that engaging in social comparisons of out groups motivates individuals to achieve positive social identity through in group distinctiveness (Hogg, Terry and White 1995). They define group identification as the desire an individual has to connect with or work with a particular group (Kelly and Kelly 1994). Social conflict theorists propose that the likelihood of intergroup conflict increases if groups develop a sense of identity (Rubin, Pruitt and Kim 1994).

Group cohesion is a construct found in the psychology literature that is very similar in meaning to group identification. Psychologists define it as the attraction of a group to its members (Roether and Peters 1972), the connectedness of the group (Budman, et al. 1989) and the willingness to continue to work together (Vinokur-Kaplan 1995).

Theoretical Framework

Social Conflict Theory

Social conflict theory explains disorder and change in society. In particular, it analyzes "elements of inequality, power, domination and conflict in human societies" (Turner 1991, p. 183). Social conflict theory proposes that conflict is a process that helps to maintain the social system, which is composed of members vying for scarce resources (such as power or competitive advantage). Mechanisms that generate change and disorder in society, such as power differentials, scarce resources and different interest groups, cause conflict to erupt and, therefore, are critical in understanding social systems.

The recent work of Thomas (1992) recognizes conflict as a basic process which organizations must manage. Structural conditions of the system influence the process, it has an internal logic, and it produces consequences for the accomplishment of tasks and the maintenance of the social system. As a basis for a theory of group-based rivalry, conflict theory has an advantage over competition theory because it studies conflicts of interest between groups within a society and recognizes the interdependence of behaviors, environment, and outcomes. Thus, conflict theory provides a unique viewpoint for the development of propositions concerning group-based competition in an industry.

According to a general model of conflict (Thomas 1992), structural conditions of the social system influence the conflict process, such as the characteristics of the parties, the characteristics of the relationship between the parties, and the characteristics of the environment (see Figure 1). The important party characteristic in this study is the level of group identification found in an alliance group. According to the model, as a structural characteristic, the level of group identification may have an influence on the behaviors exhibited by group members in a conflict situation. The conflict process includes awareness or perception of a goal conflict between the groups and the behaviors exhibited by those groups. A goal conflict exists when the results wanted by one party are incompatible with the results wanted by the opposing party. Awareness/perception of goal conflict serves as the link between the structural influences on the potential conflict parties and the actual execution of behavior. The parties must perceive a conflict before they take action. Outcomes are the results of the conflict episode. For organizations, these results might be expressed as sales figures, profit figures or other financial data, or as desirable attributes, such as innovation or creativity. This model serves as the basis for the structural model derived from the proposed theory.

Theory Development

In the proposed theory, rivalry is the result of a goal conflict between a firm protecting and one challenging the current distribution of scarce resources. It is based on a win-lose outcome preference. Rivalry is the cause of two or more individuals/firms interacting to capture scarce resources to which all parties believe they are entitled, at the expense of the

competitor. Two distinct characteristics indicate intergroup rivalry: a 'win-lose' orientation and an 'us versus them' stance. See Figure 2 for a model of the proposed theory.

Causes/Antecedents

The conflict process developed by Thomas (1992) proposes that awareness triggers a conflict episode. Awareness is the realization that goal conflicts exist between groups concerning the distribution of scarce resources. Coser (1956) proposed that the existence of unequal distribution of resources does not necessarily lead to rivalry. "Before a social conflict between negatively and positively privileged groups can take place, before hostile attitudes are turned into social action, the negatively privileged group must first develop the awareness that it is, indeed, negatively privileged" (Coser 1956, p. 37).

Some researchers studying rivalry between individual units have suggested that certain motives cause rivalrous behavior. A study of the airline industry (Baum and Korn 1996) identified a motive that influenced rivals to cooperate to avoid retaliation. MacCrimmon and Messick (1976), in a theoretical paper, proposed social motives for behavior based on outcomes and payoffs for self and other. Those influenced by self-interest and self-sacrifice motives consider only payoffs to self. Others influenced by altruism and aggression consider only payoffs to other. Those influenced by cooperation and competition motivations consider payoffs to self and other. Relative, rather than absolute, payoffs characterize these motives. A study of competitive actions in the U.S. airline industry identified three behavioral antecedents as positively related to interfirm rivalry:

awareness of interfirm relationships and action implications, motivation to act and

capability to act (Chen 1996b; Miller and Chen 1994).

Hare (1976) proposed that group members have many observations and facts available

from which to interpret reality and to problem solve. Opinions expressed in groups are

more thoughtful and prepared than opinions of individuals. Group discussion eliminates

some observations. Groups tend to make fewer, more effective decisions than individuals,

due to intra-group interaction. The wide knowledge range and better quality decisions

make groups more aware than individuals of goal conflicts between competitors. Hartford

(1971) proposed that group decisions are the result of exploration of various possibilities

of alternative issues, and a consensus happens only after much interaction. The

implication is that groups are more aware than individuals of potential conflict situations.

Struch and Schwartz (1989) found empirical evidence of a negative relationship between

group identification of religious groups and perceived conflict in the prediction of

aggressive behavior. However, the authors note that strong social pressures existing at

the time of the study may have confounded perceptions of perceived conflict. Based on

social conflict theory and group research, I propose that group identification, a structural

characteristic in the conflict process, will influence awareness of conflict. Thus, I propose:

P1: **The greater the level of group identification, the greater the perceived**

awareness of goal conflict.

Behavior

Coser (1956) proposes that when the existing distribution of scarce resources in a social system is no longer considered acceptable, individuals with common interests will form groups to signal their dissatisfaction with the status quo. Dissatisfaction is expressed through conflict behaviors. Rubin, Pruitt and Kim (1994) propose that group support affirms the legitimacy of a group's goals, increasing the likelihood that the group will initiate conflict behaviors to attain its goals. They also note that groups protest more than individuals because the identity of individual members depends on the belief that one's own group is superior to other groups.

Hartford's (1971) social work research led her to propose that an increased level of group cohesion is associated with an increase in member motivation to participate in group tasks. Insko et al. (1992) found empirical evidence that groups of students competing in Prisoner's Dilemma type games were more competitive than individuals, and that groups became more aggressive in their competitive behaviors as individual members began to identify with their group. In an experiment with schoolchildren, perceived similarity of competing groups increased intergroup rivalry in a competitive situation as the groups attempted to maintain their uniqueness and superiority (Brown 1984). Group identification was a significant predictor of participatory behavior of union members (Kelly and Kelly 1994). The above research suggests a direct, positive influence of group identification on behavior.

       P2:   **The greater the level of group identification, the greater the use of rivalrous behaviors.**

Thomas (1992) proposes that structural factors, such as characteristics of the parties, characteristics of the environment, and characteristics of the relationship between conflict parties influence the conflict process. Empirical studies show that these factors influence behavior. Researchers proposed that numerous characteristics influence rivalry between individual units. Empirical evidence in airline industry studies suggests that past performance, experience breadth, and age of organization relate positively to the range of rivalrous behaviors used (Miller and Chen 1996). In addition, firm size is a significant indicator of a firm's propensity to initiate competitive actions and firm propensity to respond to competitive attacks (Chen and Hambrick 1995). Retailers use technology and market criteria to develop cognitive categorizations defining competitive relationships between rivals, with managers defining rivals as only those stores most similar to their own organization in terms of self-defined technology and market factors (Porac and Thomas 1994). In the child development literature, children reported greater rivalry with younger than older siblings. Also, feelings of rivalry were greater with wide-spaced younger siblings in large families (Furman and Buhrmester 1985). Older children (twelfth graders) reported less rivalry with older siblings than did younger children (third graders) (Buhrmester and Furman 1990).

Characteristics of the individual units also influence group based rivalry. The group to which participants belonged influenced rivalry between strategic groups. Behaviors between members of the same strategic group were less competitive than behaviors between members of different strategic groups (Peteraf 1993).

Studies concerning the influence of environmental characteristics on rivalry all examined rivalry between individual units. Market diversity, breadth of customers and competitors in a market, and market growth are inversely related to the range of rivalrous behaviors initiated (Miller and Chen 1996). Market concentration relates to the incidence of rivalrous behaviors in a U-shaped curve; when concentration is low, more firms enter the market by initiating rivalrous behaviors, as concentration increases fewer firms enter the market and market concentration drops (Baum and Korn 1996). Brahm (1995) proposes that aggressive national targeting policies promote overinvestment in high technology industries, which increases rivalrous interactions between firms.

Characteristics of the relationship between competitors also influence rivalry. Interdependence, defined in the management literatures as an overlap of customers, markets and/or resources, is associated with a decrease in the initiation of rivalrous behaviors between individual units (Baum and Korn 1996; Chen 1996b; Porac and Thomas 1994; Porter 1980) and between strategic groups (Mehra 1996).

Absolute deprivation does not always result in conflict behaviors; it is the awareness of relative positions that leads groups to initiate conflict behaviors (Turner 1991). Coser (1956) proposes that when groups compare positions, the negatively privileged perceive a position of relative deprivation and emulate and seek the resources possessed by groups they consider to be relatively more privileged. In the attempt to gain the coveted resources of the positively privileged groups, the less privileged initiate conflict behaviors. Struch and Schwartz (1989) found a positive relationship between group identification and

aggressive behavior, however, they noted an indirect link between the two constructs.

Their study of religious group conflict showed that perceived awareness of conflict

moderated the impact of group identification on group behavior. Thus, I propose:

> **P3:** **Perceived goal conflict results in a greater use of rivalrous behaviors**
>
> **in the presence of strong group identification.**

Outcomes

The conflict process of Thomas (1992) proposes that behaviors influence outcomes.

Studies of rivalry between individual units confirm Thomas, that characteristics of

actions/behaviors influence outcomes of rivalry. Failure to follow typical industry

behavior harms performance. Positive or negative deviations from group norms of action

execution speed hurt small airline performance and deviations from group norms of

propensity to initiate actions and response announcement speed hurt large airline

performance (Chen and Hambrick 1995). Other research on the airline industry by Chen

and his colleagues exposes numerous behavioral characteristics. Visibility and centrality

of rivalrous behaviors relate positively to the likelihood of retaliation while difficulty of

implementing response behaviors relates inversely to the likelihood of retaliation. The

authors suggest that avoiding retaliation increases success (Chen and Miller 1994). In the

airline industry, a narrow range of competitive activities results in poor performance in

periods of uncertainty and market growth (Miller and Chen 1996). The number of

competitors directly affected by an attack and the degree that an action threatens a firm's

key markets relate positively to the number of responses provoked by an attack. The

effort required to implement an attack relates inversely to the number of responses

provoked by the action, the more difficult the implementation, the fewer the responses to that action. Strategic actions have a negative influence on the number of competitive response behaviors and tactical actions have a positive influence on the number of competitive responses (Chen, Smith and Grimm 1992).

Characteristics of responses, such as number of responses and length of response lag, influence outcomes for the initiating and responding firms. The greater the number of responses an action provokes, the lower the performance of the initiating firm (Chen, Smith and Grimm 1992). The greater the lag between an action and a response, the greater the performance of the responding firm. This unusual finding suggests that the time spent on developing an effective response is productive (Smith, Grimm, Gannon and Chen 1991).

Studies examining rivalry between individual firms found that intense and extended rivalry negatively influences rate of return (Brahm 1995), risk-return outcomes (Cool, Dierickx and Jemison 1989), and return on assets and sales (Schul, Davis and Hartline 1995). Intensity of rivalrous behaviors is associated with negative outcomes (Baum and Korn 1996). Excessive rivalry between college athletes and a sibling was found to result in poor athletic performance (Hanna 1993). Irish (1964) suggests that sibling rivalry has dysfunctional effects on the socialization of children. It disrupts and hinders the child's development of the ability to function as a member of the family and society.

The social conflict theory of Coser (1956) proposes that conflict between groups provides functional benefits for the groups and for the social system. In contrast, rivalry between strategic groups in the pharmaceutical industry negatively affects industry and firm profits (Cool and Dierickx 1993).

Group cohesion is a psychological concept that is equivalent to the sociological concept of group identification. Empirical results of early group research show that cohesiveness relates positively to productivity, that more cohesive groups are more productive (Hare 1976). Several more recent studies support the early research. Budman et al. (1989) provided empirical evidence that the more cohesive the psychotherapy group an individual patient participated in, the greater the patient's improvement in symptoms. However, the researchers noted that group process played an important role in the outcome; highly cohesive groups exhibited more effective group therapy behaviors than less cohesive groups, resulting in more positive outcomes. A strong positive relationship between group cohesion and effectiveness of mental health teams was found, and group cohesion and effective outcomes were dependent on the collaborative behaviors of group members (Vinokur-Kaplan 1995). A study of female, collegiate golfers found that the level of cohesion of the golf team related positively to performance (Williams and Widmeyer 1991). This study also noted a link with behavior, specifically, that more cohesive teams demonstrated better communication and coordination skills during their golf matches.

A study of sexual offenders found those participating in cohesive groups were more likely than those in less cohesive groups to experience treatment failure (Roether and Peters

1972). Hostile behavior during group therapy, rather than group cohesiveness, was associated with treatment success for offenders. McGrath also found a negative cohesion-performance relationship (1962) in a study of rifle teams. Since most research shows a positive relationship between group identification and performance, and notes behavior as a direct antecedent to outcome, I propose:

P4: Rivalrous behavior produces positive outcomes in the presence of strong group identification.

In summary, the proposed theory suggests that the level of identification alliance group members feel toward their group is an important structural factor that influences rivalry with other groups. Strong feelings of group identification heighten awareness of goal conflicts with rival groups and increase the use of rivalrous behaviors. Heightened awareness of goal conflicts also directly increases the use of rivalrous behavior. Following the conflict theory of Lewis Coser (1956; 1967), I propose that increased use of rivalrous behaviors produces positive outcomes for the alliance groups. The methodology used to test this theory is presented in the next chapter.

Chapter 3

Methodology

Measures

Group Identification

Group identification measures the connectedness a group member feels toward the retail cooperative group of affiliation, in comparison to other retail cooperative groups. This construct is a 'characteristic of the parties' in the general conflict model. I used a scale adapted for the marketing literature from social identity theory that measured group identification of art museum members (Bhattacharya, Rao and Glynn 1995). Respondents in the cited study answered the six scale questions on a five-point Likert-type scale, and the authors reported a Cronbach's alpha of 0.87. For the current study, the questions were adapted for use with cooperative groups by changing the word 'museum' to 'cooperative group.' This study used a five-point Likert-type scale (1=strongly disagree, 3=neutral, 5=strongly agree). See Table 1 for item content.

Goal Conflict

Goal conflict measures the extent to which a group member perceives a conflict between his or her unit goals and the goals of his or her primary retail cooperative competitor. Conflicting goals mean one party will achieve their goals only at the expense of the other party. The perception of goal conflict is the precursor to behavior. Therefore it is a

critical link between the level of group identification that a party feels and the behaviors

that result in a goal conflict situation. To measure this construct, I used a measure of

intergroup conflict developed by Rahim (1983; Rahim and Psenicka 1995). Respondents

indicated their level of agreement with six questions concerning conflicting versus

cooperative relationships with their primary retail cooperative competitor. Respondents

provided answers to the Likert-type questions on a five-point scale (1=strongly disagree,

3=neutral, 5=strongly agree). Questions 1, 3 and 5 were reverse scored. Rahim reported

an alpha reliability of .79 for this scale. See Table 2 for question content.

Behavior

A scale from the entrepreneurial literature covering a broad range of competitive

behaviors typical of general business strategies comprises the behavior section of the

instrument (Covin 1991). The original scale asked respondents for their level of

agreement to twenty, five-point Likert-type questions (1=strongly disagree, 3=neutral,

5=strongly agree) concerning their competitive behaviors. Covin calculated separate

reliabilities for several sub-scales within the overall group of behaviors. Coefficient alphas

by sub-scale include external financing = .69, advertising = .84, product quality = .79,

operating efficiency = .73, external independence = .66, and industry awareness = .80.

Covin used the remaining questions as single-item measures. Craig, Martin and Horridge

(1997) recently used this scale and calculated an alpha of .76 for the entire twenty

questions. Their exploratory factor analysis showed the scale is composed of six

behavioral factors corresponding to advertising, quality, forecasting, cost, financing and

service strategies. Pretests for the current study revealed that three questions (minimize

dependence on single supplier, minimize dependence on single customer, and offer superior warranties) from the original twenty were inappropriate for the population due to the unique nature of the retail hardware cooperative business. I deleted these three questions on the final instrument. Only one question of Craig et. al's (1997) cost factor remained after the deletion. Based on Covin's factors, I expected this question to load on the quality factor, resulting in five behavioral factors, rather than six. The subtractions resulted in a scale composed of seventeen questions. I asked that respondents indicate the importance of each behavior in competing against their most important cooperative-affiliated competitor on a five-point scale (1=not at all important, 3=moderately important, 5=extremely important). See Table 3 for question content. Behavior is treated as a second-order factor in the analysis, meaning it is composed of several first-order factors. These first-order factors correspond to the specific types of competitive behaviors contained in this scale.

<u>Outcome</u>

Relative performance, in terms of effectiveness (sales growth) and efficiency (profitability), was the measure for outcome and was captured by a three-item scale from the retailing literature (Smith, Venkatraman and Wortzel 1995). The authors of the scale asked respondents how their sales and profit results compared with competitors on three, five-point Likert-type questions (1=much below competition, 3=same as competition, 5=much better than competition). Pretests for the current study found that retailers were unable to assess their results in comparison to competitors. They were, however, aware of industry averages. So, respondents compared sales and profit results of their store to

industry average (1=much below industry average, 3=same as industry average, 5=much above industry average). The authors of the scale reported a coefficient alpha of .83. See Table 4 for question content.

Sample

The sample for this study was chosen from the set of retail firms employing partnering strategies. Retail buying cooperatives are a common partnering strategy (Maynard 1996). Buying cooperatives are attractive because they allow small retailers to increase operating efficiency, gain bargaining power with suppliers, and enhance market presence with consumers (Ghosh 1994, Lewison 1994).

The study sample consists of members of retail buying cooperatives in the home improvement industry. This industry is attractive for a study of intergroup rivalry for two reasons. The first reason is the recent competitive conditions experienced by industry members. Since 1982, concentration in the home improvement industry has shifted from small retailers to large retailers (U.S. Department of Commerce 1995, 1990, 1985). For example, in 1982, the four largest building material and garden centers controlled 7.1% of the market; in 1992, they controlled 16%. The four largest hardware stores increased their share of the market from 7.9% in 1982 to 9.7% in 1992. The National Retail Hardware Association estimated the top twenty-five home-improvement chains controlled more than 35% of the market in 1995 (Quintanilla 1996). This industry has experienced a highly competitive environment in the 1990s. Hardware cooperatives are competing with national hardware chains, such as Home Depot and Lowe's, and with other retail

hardware cooperatives (Quintanilla 1996, Schulz 1996b, 1996c, Stankevich 1996). The hardware industry is also a good choice for this study because several retail cooperatives have national representation. A national sample avoids bias that may result from unusual regional conditions, making the results of the study generalizable to a larger population.

The member list of the National Retail Hardware Association (NRHA) comprised the sampling frame. This list contains 60,300 contact names from 26,200 retailers and NRHA updates and audits the list monthly. NRHA includes members of all the national retail hardware cooperatives, ensuring variability in the independent variables in the study. I purchased a sample of 1700 names from the NRHA. They selected every fifteenth store from their list in a systematic random sampling routine. They included only names of owners or presidents on the purchased list and they omitted duplicate contact names in the sampling routine.

Data Collection

I developed and pretested a three-page questionnaire on a small group of twelve member owners of retail hardware cooperative stores. A pretest of twelve to twenty-five cases is generally sufficient to reveal problems with an instrument (Rossi, Wright and Anderson 1983). I telephoned representative retail hardware cooperative owners to solicit participation in the pretest, mailed a questionnaire to those agreeing to participate, and made an appointment for pick up. I debriefed respondents at the pick up appointment, noted actual respondent completion times and questionnaire problems and made adjustments accordingly.

I mailed the final instrument to a random sample of 1599 member owners (Appendix B). From the list of 1700 purchased from NRHA, I deleted seven store owners who had been contacted for the pretest. I also deleted 94 names from stores with multiple owner/executive contacts. For stores with multiple contacts, only the first name appearing on the list received a questionnaire. A personalized letter from the researcher accompanied questionnaires suggesting the relevance of the study to the participants. I also invited respondents to request results of the survey. Approximately ten percent of respondents did so.

From the initial mailing of 1599, I received 377 responses within four weeks. Six surveys were returned as undeliverable and were deducted from the quantity initially mailed and not replaced. A total of 377 received from a total of 1593 distributed resulted in a total response rate of 24%. Over half of the stores (52%) in the sample have been in operation twenty-five years or less. Respondents tended to operate only one store (82%), with five or fewer full-time employees (44%), under 10,000 square feet (69%), with sales volume under one million dollars in 1996 (49%). See Table 5 for sample characteristics.

The NRHA was unable to segment its list into cooperative versus non-cooperative members. It also does not maintain records about the type of store each member operates. All of the major retail hardware cooperatives have several different types of stores that sell hardware, the most usual types being hardware stores, lumberyards, and home centers. The three types of stores differ in annual sales volumes, square footage, number of employees, and customer base (retail end-user versus contractor customers). Because it is

unknown whether owners of different types of stores differ on the key constructs in the study, the instrument contained questions to subdivide respondents into the proper segments for analysis. The questionnaire also contained several questions to discover the competitive situation of the respondent, to ensure that they were eligible to participate. Based on the screening questions, I grouped respondents into categories and analyzed only hardware stores, who were members of a retail hardware cooperative, and recognized a cooperative-affiliated competitor from a different cooperative group. Out of 377 respondents, 38 (10%) were not members of a cooperative, 93 (25%) were members of a non-hardware cooperative group, 67 (18%) did not recognize a competitor belonging to a retail buying cooperative, and 32 (8%) cited a member of their own cooperative group as the most important competitor (intra-group competition). Subtracting all of the above as not eligible for the current study results in a usable sample size of 147 hardware retailers who are affiliated with a retail hardware cooperative and recognize as an important competitor a hardware retailer who is a member of a different hardware cooperative.

Representativeness of the usable sample was checked using a one-sample t-test on average sales volume, average square footage and average number of employees. The one-sample t-test tests the null hypothesis that there is no difference between the mean of a population and a known test value. The NRHA provided industry averages for these three variables for all three types of stores. I used the NRHA figures for hardware stores as the known test values. Using .05 as the cutoff, the t-tests show that the 147 hardware stores in this sample were not significantly different from the average U.S. hardware store on any of the three variables. See Table 6 for results.

A test for non-response bias was performed on the 147 hardware stores using independent

sample t-tests to probe for differences between early and late respondents. Comparing the

means of the summed scores of each of the key constructs in the study tested the null

hypothesis that the scores of early respondents are equal to the scores of late respondents.

T-tests show no significant difference between early and late respondents on any of the

constructs. See Table 7 for t-test results.

Data Analysis

I tested the proposed theory with a structural equation model. Following the two-step

approach recommended by Anderson and Gerbing (1988), I estimated the measurement

model first and then continued with the structural model. To assess the measurement

model, I performed a confirmatory factor analysis on the first order factors, group

identification, awareness of goal conflict, quality behavior, financing behavior, forecasting

behavior, advertising behavior, customer service behavior, and performance outcome (see

Figure 3). I used the covariance matrix of the scale items as input for the measurement

model. Chapter 4 describes estimation and adjustment of the measurement model. The

covariances of the factors (phi matrix) produced by the revised measurement model served

as the input for the second stage of the analysis, the structural model. The final model is

presented in Figure 4. Chapter 4 explains the results of the data analysis.

Chapter 4

Results

The first section of this chapter explains the confirmatory analysis performed on the first

order factors in the measurement model. A discussion of the structural model follows and

the chapter closes with the results of the hypothesis testing. Figure 3 shows the initial

measurement model that was subjected to confirmatory analysis. Figure 4 shows the final

measurement model and the structural equation model tested in this analysis. I used

generalized least squares estimation in the EQS program (Version 3.00) to fit the model.

Measurement Model

I began the process by estimating a confirmatory factor analysis to test the hypothesized

relationships of the thirty-one observed variables to the nine latent constructs. Eight first-

order constructs were specified with unit variances, as recommended by Gerbing and

Hunter (1982). These constructs were modeled as a six-item group identification factor

(F1: Group Id), a five-item awareness of goal conflict factor (F2: Goal Conflict), a five-

item quality behavior factor (F3: Quality), a two-item financing behavior factor (F4:

Financing), a three-item forecasting behavior factor (F5: Forecasting), a four-item

advertising behavior factor (F6: Advertising), a three-item customer service factor (F7:

Customer Service), and a three-item performance outcome factor (F9: Outcome). This

model was under identified. To revise the model, I examined the pattern of standardized residuals and the Lagrange multiplier tests (the equivalent of the chi-square difference test), and deleted two variables from the behavior scale items that loaded onto multiple factors.

The revised model produced a solution. However, the Lagrange multiplier test indicated many problems with this measurement model. The Lagrange multiplier test evaluates the effect of adding parameters to a model. For the model under consideration, the Lagrange multiplier test showed that several indicators loaded onto more than one construct with statistical significance. Anderson and Gerbing (1988) note the importance in structural equation modeling of unidimensional constructs and propose that deleting indicators from a model is preferable to relating one indicator to multiple factors because interpretation is difficult when indicators are assigned to multiple factors. Therefore, I deleted variables with significant multivariate probability in the Lagrange multiplier test from the model sequentially until I achieved a parsimonious model. Deletion of eight behavioral indicators resulted in the deletion of three first-order behavior factors. This left three first-order behavioral factors, quality, control, and advertising, loading onto behavior, the second-order factor. The final model contains nineteen observed variables and seven underlying constructs, one of which is the second-order factor (see Figure 4).

I assessed the measurement of each construct in the model for internal consistency. Measures of composite reliability, Cronbach's alpha, and variance extracted provide evidence of internal consistency. See Appendix C for formulas used to calculate

composite reliability and variance extracted. Table 8 presents these figures for the revised

measurement model. All constructs exceed the .7 recommendation for composite

reliability and Cronbach's coefficient alpha, providing evidence of internal consistency.

Measures of variance extracted, which shows the amount of variance of the indicators

accounted for by the latent construct, exceed the recommended benchmark of .5 for all but

two constructs. Group identification and awareness of goal conflict show variance

extracted measures of .43 and .46 respectively. These two constructs are derived from the

sociology literatures and the low variance extracted may indicate a need for further

measure refinement. Evidence of convergent validity is provided when the coefficient of

each indicator (variables with a V label in Figure 4) to its construct is significant. The

parameter estimate for every indicator in the tested measurement model is significant (see

Figure 4 and Table 8).

Table 8 also contains the overall results of the revised measurement model. The chi-

square value for the model is 160.553, based on 137 degrees of freedom, with a

probability of 0.083, indicating a good fit. The chi-square value is an absolute measure of

fit and can be sensitive to sample size and number of indicators in the model. The number

of indicators in this model is high, so fit indices other than the chi-square should be

examined. Incremental fit measures compare the fit of a tested model to a null baseline

model. EQS provides two incremental fit measures. The first, the Bentler-Bonett

Normed Fit Index (NFI) is .982 for the model. The second, the Bentler-Bonett

Nonnormed Fit Index (NNFI), takes into account the degrees of freedom in a model. This

index is .997. Both of the incremental fit indices indicate a good fit of the data to the

measurement model. Parsimonious fit measures are more precise than absolute fit and incremental fit indices because they evaluate the fit of a model in relationship to its degrees of freedom and sample size. The parsimonious fit index calculated in the EQS program is the Comparative Fit Index (CFI). The Comparative Fit Index for the proposed measurement model is .997. The various fit indices generally support the revised measurement model.

Structural Model

Estimation of the structural parameters is the second step in the structural equation modeling technique recommended by Anderson and Gerbing (1988). The results of this step are presented in Table 9. The overall fit of the model is adequate, with chi-square of 12.414, 8 degrees of freedom, and p = .134. The Bentler-Bonett Normed Fit Index (NFI) is .990, the Bentler-Bonett Nonnormed Fit Index (NNFI) is .993, and the Comparative Fit Index (CFI) is .996. Behavior is a second-order factor in the structural model and the three first-order factors (quality, control and advertising) loading onto behavior were all significant. The loadings are included in Figure 4 and Table 9.

Hypotheses

Examination of the parameter estimates shows support for most of the linkages in the proposed theory (see Table 9). I proposed a positive relationship between level of group identification and awareness of goal conflict in Proposition 1. The path between F2 (goal conflict) and F1 (group identification) represents this relationship in Figure 4. Results show a significant positive relationship between group identification and awareness of goal

conflict (F2 F1 = .146; p < .05). This suggests that the more a retail cooperative member

identifies with his or her group of affiliation, the more likely he or she is to perceive a goal

conflict with a rival. Such a finding is consistent with Hare's (1976) proposition that

groups are more aware than individuals of goal conflicts between rivals and with

Hartford's (1971) proposition that groups are more aware of potential conflict (rivalrous)

situations.

Proposition 2 proposed a positive relationship between the level of group identification

and the use of rivalrous behaviors. The path between F8 (behavior) and F1 (group

identification) represents this relationship in Figure 4. The significant F8 F1 link supports

this proposition (F8 F1 = .345; p < .01), implying that the more a cooperative member

identifies with the group, the greater the use of rivalrous behaviors. This finding is

consistent with propositions and empirical findings in the sociology literature. Rubin,

Pruitt and Kim (1994) proposed that group support increases goal-oriented group

behaviors. Hartford (1971) proposed increased levels of group cohesion to be associated

with increased motivation to participate in group tasks. Studies by Insko et al. (1992) and

Brown (1984) found that intergroup rivalry in student groups increased as the groups

developed identities. Findings in the current study also support those of Kelly and Kelly

(1994), who found that group identification was a significant predictor of participatory

behavior of union members.

I proposed a positive relationship between awareness of goal conflict and the use of

rivalrous behaviors in Proposition 3 and the path between goal conflict (F2) and behavior

(F8) represents this relationship. The link between F8 and F2 is not significant. This finding suggests that a group member's awareness of goal conflict with a rival does not influence the use of rivalrous behaviors. This is contrary to the findings of Struch and Schwartz (1989), who found that the greater a group member's awareness of goal conflict, the more aggressive the behaviors used. Perhaps this suggests a missing link in the conflict process tested in the model. Perceived goal conflict may not directly cause rivalrous behaviors, but may instead influence motives, which directly cause behavior. A few respondents noted that their behaviors derive from their motives toward either their customers or their competitors.

The last proposition proposed a positive relationship between rivalrous behavior of group members and performance outcomes. A non-significant link between F9 (outcome) and F8 (behavior) in Figure 3 does not support this proposition. This implies that behaviors arising from feelings of group identification and awareness of goal conflicts with rivals do not affect financial performance of group members. This finding is inconsistent both with management literature, which generally find a negative relationship between rivalrous behaviors and financial performance (Cool and Dierickx 1993; Brahm 1995; Cool, Dierickx and Jemison 1989; Schul, Davis and Hartline 1995), and sociology literature, which propose a positive relationship between rivalrous behavior and performance (Williams and Widmeyer 1991; Vinokur-Kaplan 1995; Budman et al. 1989). Such a finding may suggest that financial performance is not an appropriate measure for behavioral results. In such a competitive market, retailers may have competed profits away, making other outcome measures, such as customer satisfaction or innovation more

appropriate.

Overall, the results of the current study show that group identification relates positively to awareness of goal conflict and the use of rivalrous behaviors. This infers that higher levels of group identification increase the awareness of goal conflict with a rival and the use of rivalrous behaviors. Awareness of goal conflict is not significantly related to the use of rivalrous behaviors. The study did not find a significant relationship between the use of rivalrous behaviors and financial outcomes. I discuss these results in Chapter 5.

Chapter 5

Conclusion

The current study set out to examine characteristics of a type of competition gaining prominence in the marketplace, competition between groups. Although group-based methods of competing have been a part of the retail industry for many years, we should not underestimate the effect of their recent gain in popularity. From the sample responding to this study, 18% (67) of the total sample, and 28% (39) of the hardware stores answered that their number one competitor was a member of another retail cooperative group. While the majority of the respondents considered inter-type competition, for example competition between cooperatives and Big Box retailers, the biggest threat, the number of retailers considering group based competition to be a threat was noteworthy. With more than 44,000 home improvement outlets operating in the U.S. in 1996, and over 20,000 stores belonging to wholesaling cooperatives, the importance to the retail industry of this rising form of competition becomes clear ("The Industry's Annual Report," 1996). It is critical that hardware retailers understand the dynamics of group-based behavior to survive in a competitive environment where they must compete on two fronts, against category killers and group-based retailers.

I developed the proposed theory to explain how group identification influences the competitive behaviors of group members. Group identification is a feeling of connectedness that a member feels with other members of the group. Cooperative management and fellow members can foster this feeling. Interaction of members is a key factor in the development of group identification. This theory proposed that group member awareness of goal conflicts with rivals would be more acute because of the interaction between group members. The analysis supported this proposition. A second proposition of the theory is that feelings of solidarity and support among group members inspire action, which results in increased rivalrous behaviors in groups with higher levels of group identification. The analysis also supported this proposition. Contrary to expectations, the study found that increased awareness of goal conflict did not influence the incidence of rivalrous behaviors, perhaps indicating that another construct, such as motives, directly influences rivalrous behavior. The last finding of the study, that higher levels of rivalrous behaviors do not relate to financial performance, suggests that other types of outcomes may be more important in a highly competitive environment. This study has provided some useful empirical evidence about group-based competition in the retail hardware industry upon which to build future research.

Implications

The influence of group membership on individual behavior raises some important implications for this theory. Being a member of a retail cooperative will influence the behavior of the independent owner. Owners expect certain rights as independents, but also take on responsibilities and face behavioral norms as members of a cooperative.

Member owners and cooperative management need to be aware of and understand this influence to operate effectively.

Group identification should not be confused with conformity. Social conflict theory warns of the dangers of high levels of forced conformity to group goals and ideals. Such conformity may lead to within-group conflict, ultimately resulting in a split of the group into rival factions. So, while I advise that cooperative groups foster feelings of group identification within the group, the goal is to increase the interaction of group members, not the conformity.

An implication that is sometimes considered counterintuitive is that cooperative groups should encourage inter-group rivalry, rather than discourage it. Rivalry fosters innovation and creativity of a group. If not carried to excess, increased inter-group rivalry may improve operating results.

Limitations and Future Research

Several limitations of this theory exist. The generalizability of the study results is one limitation. The findings may not apply to types of alliance groups other than retail cooperatives. Retail cooperatives may possess unique levels of group identification or exhibit behaviors peculiar to their industry. Also, theoretical application may be limited to the retail industry. Retailers face a distinct set of marketing mix decisions, which may result in behaviors not applicable to other industries. Hardware retailers may currently be facing a unique situation within the retail environment, making their situation unique in

comparison to retailers competing in other lines of business. Thus, we must undertake careful consideration before generalizing the results of this study to populations other than retail hardware cooperatives.

This theory proposes relationships between sociology-based constructs applied to a retail-oriented business setting. To test the model, I adapted measures for several proposed constructs from the sociology literature. Although I pretested these scales on a small sample, refinements are still needed, as evidenced by the reliability scores and variance extracted of the adapted scales. Future research efforts should be made to refine the scales used in this study or develop new ones.

This theory proposes a dynamic process. Therefore, longitudinal measurement may add more to our understanding of inter-group rivalry than one-time measurements. Future replication projects are encouraged to learn more about the dynamic nature of the influence of group membership on competitive retail behaviors and outcomes.

Antecedents to group identification may be a salient research topic. Alliance groups in the business community need to know what increases the identification of members to the group. Such knowledge can help groups attract and retain members, and increase the effectiveness of the group. This is another area where we must adapt measures from sociology to a business application.

The sociology literature suggests that level of group identification is inversely related to group size, as membership increases, levels of group identification suffer. Since level of group identification affects the perceptions of group members and the behaviors of group members, cooperative management may be able to manipulate member identification with the group. Cooperative group managements may be interested in learning more about the effect of size on level of group identification as this form of competition continues to increase in popularity and as groups merge to form larger groups.

Survey respondents suggested an additional area for future research in notes on the questionnaires. Some commented that their behaviors were driven not by their competitors but by their customers. This suggests that the motives of retailers may differ, with some concentrating primarily on their customers and others concentrating on their competitors. Such a notion is consistent with the social conflict and sociology literatures reviewed. However, before motive can be added to the model, researchers must develop a measure of motive.

The findings of this study show that group identification is an important sociological concept that applies to the business setting. With the tremendous rise in the use of alliance groups in the current economy, an understanding of factors influencing the behavior of group members is critical to the success of the alliance effort. I have shown that group identification is one factor that influences the behavior of group members. While this study has answered a few questions about the effect of group membership on behavior, it has presented new questions that may serve as fruitful research projects in the future.

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Figures
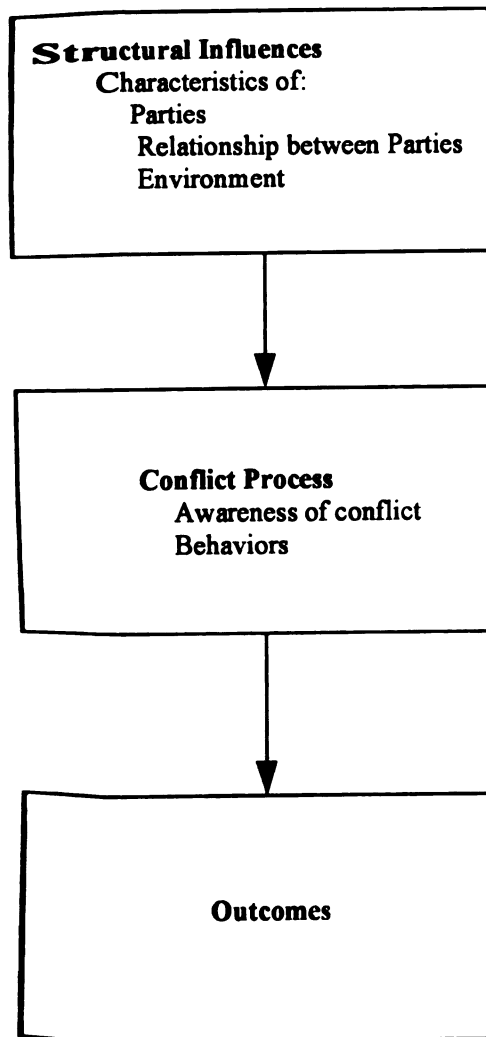
Adapted from Thomas (1992).

Figure 1. **General Conflict Model**
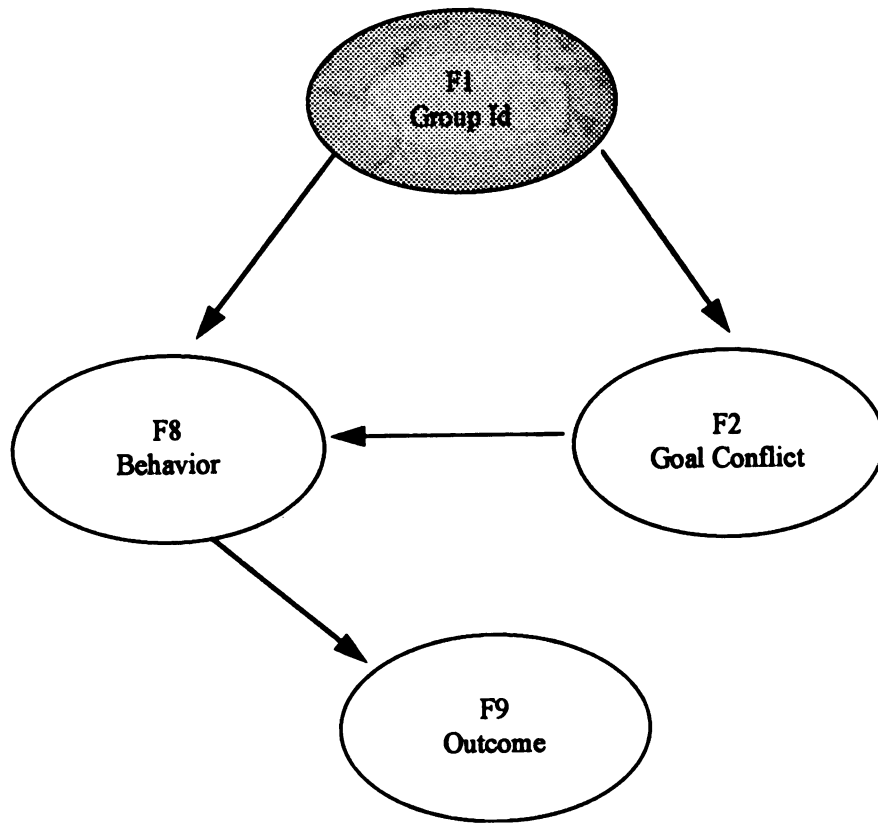
Figure 2. Theoretical Model
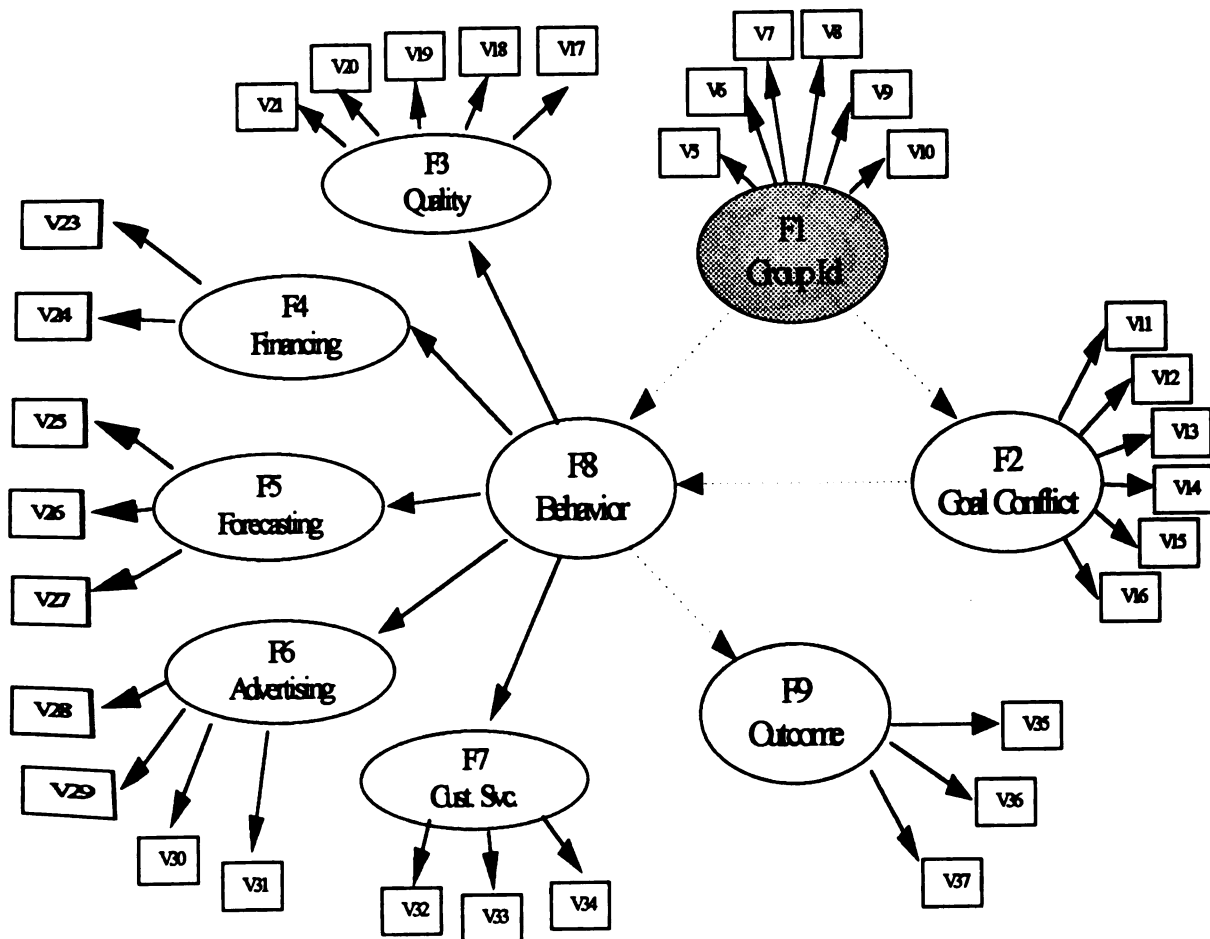
Figure 3. Initial Model
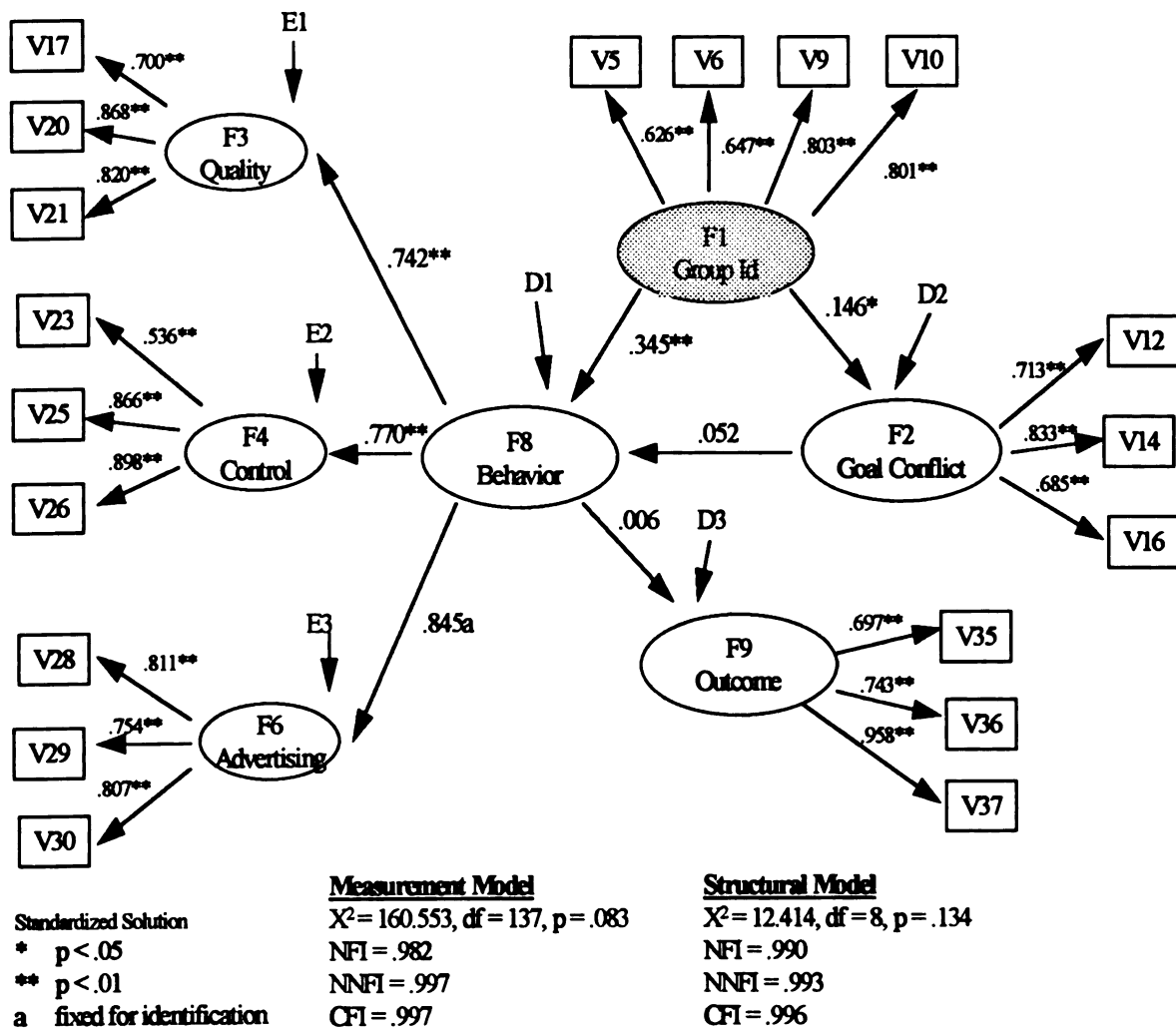
Figure 4. Revised Model

Tables

Table 1. Item Content: Group Identification

Scale	Label	Statements
Group Identification	V5	When someone criticizes my coop, it feels like a personal insult.
	V6	I am very interested in what others think about my coop.
	V7	When I talk about my coop, I usually say we rather than they.
	V8	My coop's successes are my successes.
	V9	When someone praises my coop, it feels like a personal compliment.
	V10	If a story in the media criticized my coop, I would feel annoyed.

Table 2. Item Content: Goal Conflict

Scale/Factor		Statements
Goal Conflict	V12	_____ doesn't play by the rules that allow each of us to profitably serve out respective market niches.
	V13	The relationship between my store and _____ is harmonious, allowing each of us to profitably serve our respective market niches.
	V14	There is mutual antagonism between my store and _____.
	V15	There is implicit cooperation between my store and _____.
	V16	_____ has a winner takes all attitude towards my store.

Table 3. Item Content: Behavior

Factor	Label	Statements
Quality	V17	To offer more high quality products/services
	V18	To emphasize more strict quality control
	V20	To improve employee productivity and operations efficiency
	V21	To provide more extensive customer service
	V22	To emphasize cost reduction in all facets of business operations
Finance	V23	To maximize use of outside financing to help gain advantage
	V24	To frequently explore for new sources of funds to help gain advantage
Forecasting	V25	To actively attempt to predict industry trends to gain advantage
	V26	To actively attempt to predict competitors' moves to gain advantage
	V27	To actively attempt to predict customer tastes and requirements to gain advantage
Advertising	V28	To use more sharply-focused advertising
	V29	To use more frequent advertising
	V30	To use advertising which clearly differentiates my products/services
	V31	To sponsor more frequent promotional activities
Customer Service	V32	To extend more generous customer credit
	V33	To offer a wider range of products/services
	V34	To offer products/services at lower price

Table 4. Item Content: Outcome

Scale/Factor	Label	Statements
Performance Outcome	V35	Profitability of your store (fiscal 1996)
	V36	Percent dollar sales growth of your store
	V37	Percent profit growth of your store

Table 5. Sample Characteristics

	Freq	%	Mean
Years			35.61
1-10	66	20%	
11-25	102	32%	
26-50	80	25%	
51-75	35	11%	
76-100	26	8%	
> 100	13	4%	
# Stores			1.31
1	253	82%	
2	36	12%	
3	11	4%	
4	3	1%	
5	2	1%	
6	3	1%	
7	1	0%	
Full-Time Employees			11.10
1-5	141	44%	
6-10	92	29%	
11-15	37	12%	
> 15	48	15%	

	Freq	%	Mean
Square Footage			13,687.37
< 5,000	70	70%	
5,000 - 10,000	148	47%	
10,001 - 15,000	38	12%	
15,001 - 25,000	27	9%	
25,001 - 50,000	20	6%	
> 50,000	9	3%	
1996 Sales Volume			$2,233,117
< $500,000	54	20%	
$500,000 - 999,999	84	29%	
$1,000,000 - 1,499,999	51	18%	
$1,500,000 - 4,999,999	71	25%	
$5,000,000 - 9,999,999	16	6%	
> $10,000,000	9	3%	

Table 6. Representativeness of Sample

One-sample t-tests						
Variable	**# Cases**	**Mean**	**Test Value**	**t-value**	**df**	**Sig**
average volume	115	996774	913498	1.10	114	.275
average square footage	132	7879	7000	1.93	131	.056
average # employees	103	9.27	9	.37	102	.713

Table 7. Non-response Bias

t-test for equality of means						
	Early Respondents		Late Respondents			
Scale	Mean	S.D.	Mean	S.D.	t-value	sig
Group Identification	23.3025	4.445	22.2000	5.531	.85	.406
Goal Conflict	12.3193	3.659	12.4500	4.322	-.13	.899
Behavior	67.8151	11.776	68.0000	11.211	-.07	.947
Performance Outcome	9.5304	2.583	9.7000	2.203	-.31	.759

Table 8. Measurement Model Results

Internal Consistency

Construct	Composite Reliability	Coefficient Alpha	Variance Extracted
Group Identification	.75	.80	.43
Awareness of Goal Conflict	.72	.77	.46
Quality Behavior	.76	.79	.52
Control Behavior	.75	.80	.51
Advertising Behavior	.75	.72	.51
Performance Outcome	.77	.81	.54

Table 8. (cont'd).

Parameter Estimates

Construct	Path Labels	Parameter Estimate	t-value	Standardized Estimate	Standardized Residual Variance
Group Identification	V5 F1	.559	6.315**	.626	.780
	V6 F1	.534	6.683**	.647	.763
	V9 F1	.737	9.102**	.803	.597
	V10 F1	.689	8.962**	.801	.599
Goal Conflict	V12 F2	.651	7.209**	.713	.701
	V14 F2	.726	8.517**	.833	.553
	V16 F2	.649	7.232**	.685	.728
Quality Behavior	V17 F3	.479	7.847**	.700	.714
	V20 F3	.602	10.042**	.868	.497
	V21 F3	.464	9.406**	.820	.572
Control Behavior	V23 F4	.559	5.088**	.536	.844
	V25 F4	.738	9.919**	.866	.500
	V26 F4	.789	9.986**	.898	.440
Advertising Behavior	V28 F6	.812	8.979**	.811	.585
	V29 F6	.673	7.979**	.754	.657
	V30 F6	.782	9.604**	.807	.590
Outcome	V35 F9	.570	7.450**	.697	.717
	V36 F9	.631	8.051**	.743	.669
	V37 F9	.798	11.546**	.958	.288

* $p > .05$

** $p > .01$

Overall Fit

	Chi-square	df	p	NFI	NNFI	CFI
Measurement Model	160.55	137	.083	.982	.997	.997

Table 9. Structural Model

Overall Fit

	Chi-square	df	p	NFI	NNFI	CFI
Structural Model	12.41	8	.134	.990	.993	.996

Second Order Factor: Behavior

Parameter	Path Labels	Parameter Estimate	t-value	Standardized Estimate	Standardized Residual Variance
Behavior → Quality Behavior	F8 F3	.873	7.857**	.742	.671
Behavior → Control Behavior	F8 F4	.907	8.031**	.770	.638
Behavior → Advertising Behavior	F8 F6	1.000*		.845	.534

Path Estimates

Path		Parameter Estimate	t-value	Standardized Estimate	Standardized Residual Variance
Group Identification → Awareness of Goal Conflict	F1 F2	.151	1.651*	.146	.989
Group Identification → Behavior	F1 F8	.303	3.608**	.345	.934
Awareness of Goal Conflict → Behavior	F2 F8	.044	.564	.052	
Behavior → Outcome	F8 F9	.006	.056	.006	1.000

*   parameter fixed for identification purposes
* $p > .05$
** $p > .01$

Appendices

Appendix A

Appendix A. Patterns and Dimensions of Rivalry

	Patterns of Rivalry					
	Between Groups		Within Groups		Between Individual Units	
Causes						
Factors underlying action					Chen 1996	Interfirm rivalry: awareness, motivation to act, capability to act
Motives					MacCrimmon & Messick 1976	interpersonal rivalry: aggression, competition, proportionate competition
					Baum & Korn 1996	interfirm rivalry: mutual forbearance

	Patterns of Rivalry					
	Between Groups		Within Groups		Between Individual Units	
Effects						
Effects on performance	Cool & Dierickx 1993	rivalry between strategic groups affects industry & firm profits	Cool & Dierickx 1993	rivalry within strategic groups affects industry & firm profits	Brahm 1995	excessive interfirm rivalry results in industry ROR below competitive rate
					Cool, Dierickx & Jemison 1989	intensity of interfirm rivalry influences risk-return outcomes
					Schul, Davis & Hartline 1995	extended interfirm rivalry, mediated by strategy, influences firm ROA & sales
					Hanna 1993	sibling rivalry resulted in poor athletic performance
Functions of rivalry					Irish 1964	functions of sibling rivalry include: socialization, conflict resolution, intro to rights of others, develop role model

	Patterns of Rivalry					
	Between Groups		Within Groups		Between Individual Units	
Structural Influences						
Internal - characteristics of parties					Miller & Chen 1996	past performance, experience breadth, age of organization, size of organization
					Furman & Buhrmester 1985	family constellation variables: relative age, age difference, family size, birth order, gender
					Chen & Hambrick 1995	firm size, firm propensity & firm responsiveness to act & respond,
					Porac & Thomas 1994	cognitive categorization of relationships (taxonomy used by mgr)
					Peteraf 1993	membership status: old members versus new entrants

	Patterns of Rivalry					
	Between Groups		Within Groups		Between Individual Units	
External - characteristics of environment					Miller & Chen 1996	market characteristics: market diversity, market growth, market uncertainty
					Baum & Korn 1996	market concentration, intensity of rivalry
					Cool, Dierickx & Jemison 1989	intensity of rivalry
					Brahm 1995	national targeting policy
					Schul, Davis & Hartline 1995	supplier & buyer power & threat of substitutes

	Patterns of Rivalry					
	Between Groups		Within Groups		Between Individual Units	
Characteristics of Relationship	Mehra 1996	interdependence: resources of strategic groups, customers of strategic groups			Buhrmester & Furman 1990	quality of sibling relationships: warmth, power, conflict
					Chen 1996	interdependence: market commonality, resource similarity
					Porac & Thomas 1994	interdependence: technological similarity, market similarity
					Baum & Korn 1996	interdependence: market domain overlap, multi-market contact
					Porter 1980	interdependence: market segments

	Patterns of Rivalry					
	Between Groups		Within Groups		Between Individual Units	
Characteristics of Moves/Actions					Chen & Hambrick 1995	speed & visibility
					Chen & Miller 1994	move characteristics: visibility, difficulty, centrality
					Chen, Smith & Grimm 1992	characteristics of actions: competitive impact, attack intensity, implementation requirement, type of action (strategic, tactical); characteristics of responses: # of responses, response lag
					Miller & Chen 1996	simplicity, complexity

Appendix B

Appendix B. Questionnaire

Section I.

1. Are you a member of a retail hardware buying cooperative? _____yes _____no

     If no, please do not continue with the survey, but please do return it following the directions on the back page. Thank you.

2. How many retail hardware buying cooperatives do you belong to? _____

3. If one, what retail hardware buying cooperative do you belong to? _____

4. If more than one, on which do you depend for the greatest percent of your purchases? _____

Please answer all questions in this survey about 'your cooperative' in reference to the cooperative you answered for #3 or #4 above.

Section II.

To answer the questions in Section II, please circle the number that shows your level of agreement with the statement.

	STRONGLY DISAGREE		NEUTRAL		STRONGLY AGREE
1. When someone criticizes my cooperative, it feels like a personal insult.	1	2	3	4	5
2. I am very interested in what others think about my cooperative.	1	2	3	4	5
3. When I talk about my cooperative, I usually say 'we' rather than 'they'.	1	2	3	4	5
4. My cooperative's successes are my successes.	1	2	3	4	5
5. When someone praises my cooperative, it feels like a personal compliment.	1	2	3	4	5
6. If a story in the media criticized my cooperative, I would feel annoyed.	1	2	3	4	5
7. In general, I favor a strong emphasis on the marketing of tried and true products or services	1	2	3	4	5
8. In the past 5 years, I have marketed very many new lines of products or services in my store.	1	2	3	4	5
9. In the past 5 years, the changes in products or services in my store have been mostly of a minor nature.	1	2	3	4	5
10. In general, I have a strong tendency to choose high-risk projects (with chances of very high returns).	1	2	3	4	5
11. In general, I believe it is best to explore the hardware retail environment gradually via timid, incremental behaviors.	1	2	3	4	5
12. When confronted with decision-making situations involving uncertainty, I typically adopt a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.	1	2	3	4	5

Section III.

1. In your town/city or neighboring area, is there another **hardware store** who is a **member of a retail buying cooperative**?

     _____ yes _____ no

     If no, please go to page 3 and complete Section VII only. If yes, please complete all sections of the survey. Thank you.

2. If yes, what is the name of the store? (If there is more than one, which one poses the biggest threat, real or potential, to your store?)

     _____ **(store)**

3. What hardware **cooperative** is the store in #2 affiliated with?

     _____ **(cooperative)**

Section IV.
Please circle the number showing how important achieving each statement is for your store. For a 'blank' within a question, think of the store you mentioned in Section III, question #2. For example, if you identify Happy Hardware as a local, cooperative-affiliated store, insert Happy Hardware in the blanks.

		NOT AT ALL IMPORTANT		MODERATELY IMPORTANT		EXTREMELY IMPORTANT
1.	To use more sharply-focused advertising than _____ (store).	1	2	3	4	5
2.	To use more frequent advertising than _____ (store).	1	2	3	4	5
3.	To use advertising which clearly differentiates my products/services from those of _____ (store).	1	2	3	4	5
4.	To sponsor more frequent promotional activities (community events, how-to clinics, celebrity appearances, etc.) than _____ (store).	1	2	3	4	5
5.	To sponsor more sharply-focused promotional activities than _____ (store).	1	2	3	4	5
6.	To sponsor promotional activities which clearly differentiate my store from _____ (store).	1	2	3	4	5
7.	To offer more high quality products/services than _____ (store).	1	2	3	4	5
8.	To emphasize more strict quality control than _____ (store).	1	2	3	4	5
9.	To provide a more attractive, customer-friendly physical store environment than _____ (store).	1	2	3	4	5
10.	To improve employee productivity and operations efficiency more than ___ (store).	1	2	3	4	5
11.	To provide more extensive customer service/support than _____ (store).	1	2	3	4	5
12.	To initiate customer service/support programs more frequently than _____ (store).	1	2	3	4	5
13.	To actively attempt to predict industry trends to gain advantage over _____ (store).	1	2	3	4	5
14.	To actively attempt to predict competitors' moves to gain advantage over _____ (store).	1	2	3	4	5
15.	To actively attempt to predict customer tastes and requirements to gain advantage over _____ (store).	1	2	3	4	5
16.	To emphasize cost reduction in all facets of business operations so I can make more profit than _____ (store).	1	2	3	4	5
17.	To maximize use of outside financing to help gain advantage over _____ (store).	1	2	3	4	5
18.	To frequently explore for new sources of funds to help gain advantage over _____ (store).	1	2	3	4	5
19.	To extend more generous customer credit than _____ (store).	1	2	3	4	5
20.	To offer a wider range of products/services than _____ (store).	1	2	3	4	5
21.	To offer a range of products/services which clearly differentiates my store from _____ (store).	1	2	3	4	5
22.	To offer products/services at a substantially lower price than _____ (store).	1	2	3	4	5

Section V.
Please circle the number that shows your level of agreement with the statement. For questions 1-4, where you encounter a 'blank' within a question, think of the cooperative you mentioned in Section III, question #3. For example, if you identify Happy Hardware as a local, cooperative-affiliated store and Happy Hardware is a member of Ace Cooperative, insert Ace in the blanks.

		STRONGLY DISAGREE		NEUTRAL		STRONGLY AGREE
1.	I feel a strong sense of "them and us" between members of my retail cooperative and members of _____ cooperative.	1	2	3	4	5
2.	You can never really trust members of _____ cooperative.	1	2	3	4	5
3.	I feel that members of my retail cooperative and members of _____ cooperative are really on opposite sides in my industry.	1	2	3	4	5
4.	If my retail cooperative group didn't exist, members of _____ cooperative would try to drive members of my coop group out of business.	1	2	3	4	5

For questions 5-13, where you encounter a 'blank' within a question, think of the store you wrote in the blank in Section III, question #2.

		STRONGLY DISAGREE		NEUTRAL		STRONGLY AGREE
5.	There is unspoken agreement between my store and _____ (store) about our respective market niches in the retail hardware industry.	1	2	3	4	5
6.	_____ (store) doesn't 'play by the rules' that allow each of us to profitably serve our respective market niches.	1	2	3	4	5
7.	The relationship between my store and _____ (store) is harmonious, allowing each of us to profitably serve our respective market niches.	1	2	3	4	5
8.	There is mutual antagonism between my store and _____ (store).	1	2	3	4	5
9.	There is implicit cooperation between my store and _____ (store).	1	2	3	4	5
10.	_____ (store) has a 'winner takes all' attitude towards my store.	1	2	3	4	5
11.	In relation to _____ (store), I typically respond to actions which they initiate.	1	2	3	4	5
12.	In relation to _____ (store), I am very often the first to introduce new products/services, operating technologies, etc.	1	2	3	4	5
13.	In relation to _____ (store), I typically seek to avoid competitive clashes, preferring a 'live-and-let-live' posture.	1	2	3	4	5

Section VI.
In comparison to other retail hardware cooperatives, please show your store's and your cooperative's performance on these dimensions:

		MUCH BELOW INDUSTRY AVERAGE		SAME AS INDUSTRY AVERAGE		MUCH ABOVE INDUSTRY AVERAGE
1.	Profitability of your store (fiscal 1996)	1	2	3	4	5
2.	Percent Dollar Sales Growth of your store (fiscal 1996)	1	2	3	4	5
3.	Percent Profit Growth of your store (fiscal 1996)	1	2	3	4	5
4.	Profitability of your cooperative group (fiscal 1996)	1	2	3	4	5
5.	Percent Dollar Sales Growth of your cooperative group (fiscal 1996)	1	2	3	4	5
6.	Percent Profit Growth of your cooperative group (fiscal 1996)	1	2	3	4	5

Section VII.
Please answer the following questions about characteristics of your store.

1. Most stores have several competitors in their trading area. Of the competitors in your trading area, what one store is your most important competitor? _____

2. What type of store is this competitor (circle one)?

   Big Box   Cooperative   Independent   National Chain   Regional Chain   Wholesale Voluntary   Other _____

3. How many years has your operation been in business?   _____ years

4. How many stores were there in your operation in fiscal 1996?   _____

5. How many people, on average, did you employ in your operation in fiscal 1996?   _____ full-time   _____ part-time

6. What is the approximate square footage of your total operation?   _____ sq. ft.

7. What sales growth/decline did your total operation achieve in fiscal 1996?   _____ % growth, or   _____ % decline

8. What was the approximate sales volume of your total operation in fiscal 1996? $_____

_#_ _____

Thank you for participating in this research.

To return the questionnaire, fold the booklet into thirds along the horizontal lines with the return address and postage on the outside, tape or staple it closed, and put it in the mail. To ensure confidentiality, **do not put your own return address on the booklet.**

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Appendix C

Appendix C. Formulas for Composite Reliability and Variance Extracted

Construct Reliability $= \dfrac{\text{(Sum of standardized loadings)}^2}{\text{(Sum of standardized loadings)}^2 + \text{sum of indicator measurement error}}$

Variance Extracted $= \dfrac{\text{Sum of squared standardized loadings}}{\text{Sum of squared standardized loadings} + \text{sum of indicator measurement error}}$

From: Hair, J.F., Jr., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995). Multivariate Data Analysis with Readings, Fourth Edition. Englewood Cliffs, New Jersey: Prentice Hall, p. 653.