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Effect of strategic orientation on innovation and performance : the case of multiple channel retailing (MCR)

Marguerite Moore
University of Tennessee

To the Graduate Council:

I am submitting herewith a dissertation written by Marguerite Moore entitled "Effect of strategic orientation on innovation and performance : the case of multiple channel retailing (MCR)." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Human Ecology.

<div align="right">Ann Fairhurst, Major Professor</div>

We have read this dissertation and recommend its acceptance:

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Accepted for the Council:

<u>Carolyn R. Hodges</u>

Vice Provost and Dean of the Graduate School

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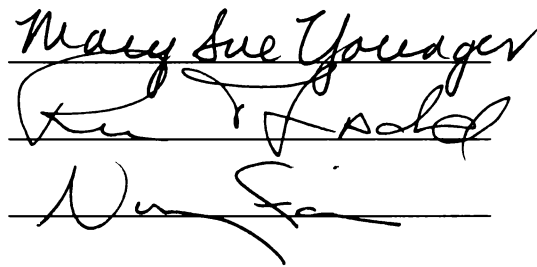(Original signatures are on file with official student records.)

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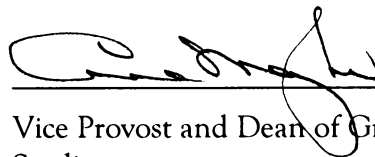
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EFFECT OF STRATEGIC ORIENTATION ON INNOVATION
AND PERFORMANCE: THE CASE OF MULTIPLE
CHANNEL RETAILING (MCR)

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Marguerite Moore
August 2002

DEDICATION

This dissertation is dedicated to

Clifton Leonard Moore, Jr. & Catherine Haynes Moore

and

Maude Overstreet Haynes

ABSTRACT

Over the past decade technological, administrative and marketing innovations have grown at unprecedented rates in the retail industry. Among this wave of innovation, no single technology has generated as much interest as the phenomenon of multiple channel retailing (MCR). MCR is the practice of distributing goods to consumers through both traditional brick-and-mortar outlets and through the Internet channel. Though many retailers jumped on the early MCR bandwagon, a number of large players have scaled back their Internet operations over the past two years (Sheraga, 2001). The current research uses Organizational Diffusion of Innovations (ODI) theory to examine the determinants of MCR adoption within this industry. Previous research into ODI phenomena has not delved deeply into the influence of competitor behavior on organizational adoption decisions. The current research considers the effect of firm strategy on MCR innovation and firm performance in the domestic retail industry. The Miles and Snow strategic typology is used as the theoretical basis for the strategy concept. A network of hypotheses is posited based on the extant ODI literature, the Miles and Snow theory and the current state of MCR diffusion. Hypotheses are tested using field data collected through a mail survey. Data were collected from key informants inside domestic retail chains (N=102). Multivariate Analysis of Covariance (MANCOVA) suggests that strategic orientation is related to innovation among U.S. retail firms. This relationship is significant while adjusting for an organizational size covariate. Results also suggest that the Miles and Snow typology is effective in explaining strategic contingencies in the retail context. Implications and research directions for theory and practice are offered.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

In today's competitive retail industry, organizations are aggressively developing technology, administrative innovations, and new products and services to profit in the information driven marketplace. The retail industry is noted for a number of innovative business initiatives including broad inter-organizational programs such as Efficient Consumer Response (ECR) and focused intra-organizational programs such as in store interactive technologies (Burke, 1997). U.S. retailers including Wal-Mart and The Limited, Inc. and European retailers including Tesco and Carrefour have been widely recognized for their ability to leverage operations, management, and marketing technology for strategic advantage. Considering the competitive nature of this industry, it is hardly surprising that the strategic use of technology has become commonplace among leading global retailers.

Although the retail industry boasts numerous advances, no single innovation has generated quite as much interest as the phenomenon of multiple channel retailing (MCR). In general, the practice of MCR is defined as the marketing and distribution of goods and services through more than one channel of distribution (e.g., traditional, catalog, and interactive channels). For the purpose of this study, MCR is defined as the retailing of goods and services specifically through traditional and Internet channels. In a 1998 National Retail Federation (NRF) survey of U.S. retail firms, 76% of the respondents indicated that they either, currently sold goods and services on-line, or planned to do so within the next year. This figure more than doubled over the previous year's (1997) survey, which indicated that only 36% of retailers were selling on-line at that time or planned to do so within the next year (Ernst and Young, 1999). Therefore, the rapid adoption of Internet marketing among traditional *bricks and mortar* retailers is clearly underway.

At this early stage of diffusion, both academics and practitioners indicate great difficulty in predicting the impact of MCR at industry, company, and consumer levels (Fox, 1995). When new business innovations of this sort emerge, researchers tend to struggle in predicting the scale and scope of their impact. Peterson, Sridhar, Balasubramanian, and Bronnenberg (1997) characterize Internet marketing in general as a *market discontinuity*. A market discontinuity, according to Majahan and Wind (1989), causes a "shift in market forces or their interrelationships that cannot be predicted by a continuation of historical trends and that, if it (market discontinuity) occurs, can dramatically affect the performance of a firm or an industry" (p.187).

From an administrative perspective, MCR can be considered an Information Systems (IS) innovation. Swanson (1994) designated three types of organizational innovations within the IS unit. A Type I innovation refers to basic IS tasks; Type II refers to IS innovations supporting the administration of the business; and Type III refers to

1

innovations that are embedded in the core technology of the business. Considering the fact that a multiple channel strategy transforms current retail planning, resource allocation, administration, marketing, and distribution, it is appropriate to classify this phenomenon as a Type III innovation. Although they approach the phenomenon from different perspectives (i.e., marketing and IS), the concepts of both 'marketing discontinuity' and Type III IS classification illuminate the broad impact that MCR is likely to have on this industry.

Initial empirical efforts into the Internet's impact on retailing have focused on aspects of consumer acceptance or rejection of this technology in their purchasing behavior (Ernst and Young, 1999; 2000; Lohse, Bellman and Johnson, 2000; Szymanski and Hise, 2000). Although the emerging literature on retailing in the multiple channel context clearly favors the consumer perspective, some conceptual attention is beginning to be paid to the organizational perspective, particularly from the practitioner point-of-view. This organizational perspective appears to be slightly more pragmatic in its approach to e-commerce, directing managers to first understand their current business when considering adoption of a multiple channel strategy. Burke raises important questions regarding the role of technology in retailing when he states the following (regarding retailing technology in general):

> "If we ask the question, Will technology change the way we interface with customers in the future? The answer has got to be yes. But if we ask a slightly different question, Will all of these technologies be successful? The answer is definitely no. Some of these technologies will succeed, but many will be disappointing failures. And that's where the hard work comes in for senior managers in retailing today: Which technologies to embrace? Which to ignore? Which to spend precious resources on? When to pull the plug if success isn't measurable and immediate? (p.160, In Maruca, 1999)"

These questions illuminate critical concerns for brick and mortar retailers who have adopted or are considering adopting a multiple channel strategy. For traditional retailers including Barnes and Noble and the Gap, multiple channel strategies are already showing profits (Stores, 1999). However, many traditional formats face unique problems in selling their products on-line. For example, consumer electronics "category killers" face unpredictable price competition with on-line auction venues such as eBay. Therefore, it could be damaging for this type of retailer to engage in a multiple channel strategy, prior to assessing the viability of the Internet channel for its current business.

As Burke states (1999, above) the potential for disappointing failure with any innovation is inevitable. However, the urgency that this innovation has brought to the already harsh competitive retail environment is likely creating pressure for retailers to adopt multiple channel strategies, whether these strategies are compatible with their current capabilities or not. Therefore, it is possible that retailers are adopting multiple

channel retailing prematurely and/or without adequate consideration of its long-term consequences.

The focus of the current study is to investigate whether a firm's interaction with its competitive environment influences its decision to adopt multiple channel retailing. In order to operationalize this research, the study uses concepts and thought from organizational Diffusion of Innovations Theory and the strategic orientation literature—examined in depth in Chapters 2 and 3. Specifically, the study seeks to examine the relationship of between patterns of strategic behavior (i.e., strategic orientation) and the decision to adopt/reject MCR (i.e., level of innovation). This research will provide an initial investigation into the effect of competition (i.e., strategy) on critical innovation adoption decisions (i.e., to adopt, postpone or reject a multiple-channel strategy) in the competitive retail industry.

Conceptual Framework

Linking strategy to innovation behavior has been previously suggested in the extant literature that deals with the diffusion of innovations across organizations. Studies from management, organizational behavior, and marketing have indicated various conceptualizations and empirical results that link some aspect of firm level strategy to innovation behavior. Although these studies consider contexts outside of the retailing industry, they provide the conceptual foundation for examining the effect of strategy on MCR adoption within the Organizational Diffusion of Innovations (ODI) framework. The following discussion presents an overview of this literature to justify the present conceptualization.

Within the organizational behavior field, Kimberly (1978) studied the effect of external environment information integration on innovation in the hospital industry. He found that higher degrees of external integration, (i.e., the frequency and clarity of industry wide signaling behavior), was indicative of innovativeness among the sample. Kimberly's research was the first to suggest that organizations are likely to act on competitive information from their external environment when making innovation decisions.

Ettlie (1983) examined the effect of context (environment) on innovation among suppliers in the food processing sector. His study specifically investigated the effect of context on firm policy (technology policy, top management/customer policy and direct market policy) on innovation of radical and incremental process adoption and new product introduction. Ettlie's findings indicated that perceived environmental uncertainty significantly influenced company policy which, in turn, influenced rates of radical and incremental process adoption and new product introduction. The behavior of competitors was among the most influential factors contributing to Ettlie's multi-dimensional environmental uncertainty construct. This finding indicates that a firm's uncertainty regarding the behavior of its competitors can shape internal policy (strategy), which can, in turn, affect innovation behavior.

3

In their 1986 conceptual work, Robertson and Gatignon emphasized the importance of considering competitive effects in research on the diffusion of technology across organizations. They pointed out that previous diffusion research did not adequately consider factors in the adopting firm's competitive environment as well as factors in the supplier's (of the innovation) environment. They proposed that six factors in the adopter industry competitive environment impact time of adoption of non adoption. These factors include: industry heterogeneity, competitive intensity, demand uncertainty and signal frequency and clarity, professionalism and cosmopolitanism. For the supplier's (of the innovation) competitive environment, they proposed that industry competitiveness, reputation of industry, technology standardization, and vertical coordination with customers, research and development allocation, and marketing support impact both the decision and timing of adoption.

As a follow up to their conceptual work, Gatignon and Robertson (1989) empirically tested the effect of competitive environment factors on adoption behavior within the insurance industry. They specifically examined whether supply side and adopter firm competitive environment factors affected the adoption of laptop computers for sales forces within the sample. Their results indicated that factors at both the adopter industry competitive environment level and the supply side competitive environment level impacted adoption behavior. Within the adopter industry competitive environment, industry concentration and price intensity were found to affect adoption. As industry concentration increased, the likelihood of adoption increased. They attributed this finding to the idea that concentrated industries use innovations as a competitive tool and typically have abundant financial resources to invest in these technologies. Their research also detected a negative relationship between competitive price intensity and adoption. They reasoned that a lack of price pressure allows greater access to resources and increased freedom to adopt an innovation. Within the supply side competitive environment, they found that vertical coordination and supplier incentives positively impacted adoption. They emphasized the importance of considering the impact of suppliers of a given innovation (i.e., *persuaders*) in addition to the adopters themselves to fully understand organizational diffusion (1989, p.43).

Although these studies arise from different academic disciplines and focus on external dimensions of strategy, they consistently indicate that an organization's interaction and perception of its competitive environment affects its innovation behavior. Based predominantly on the ODI paradigm and its supporting body of research, Figure 1 presents the conceptual framework for the study.

The conceptual model identifies two major classes of antecedents to ODI including adopter industry level factors and adopter organization level factors, as well as the focal antecedent of the study, strategic orientation. Because a firm's strategic orientation involves the manner that it responds to its external environment it includes inputs from

4
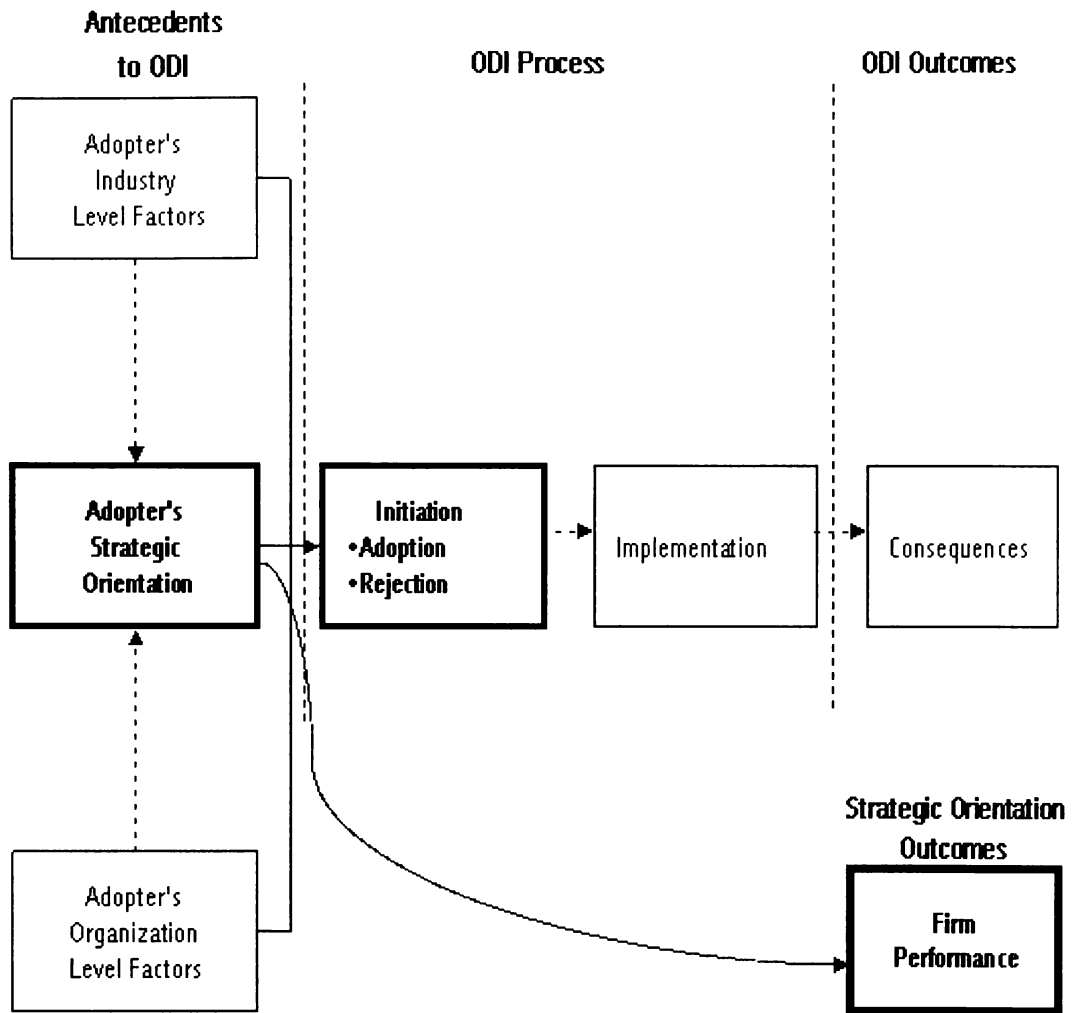
Figure 1 Conceptual Framework: Strategic Orientation within Organizational Diffusion of Innovations (ODI) Process Framework

both industry level and firm level factors but is unique and stands alone in the framework. Next, the innovation process itself is presented. This widely accepted model has been adopted for the majority of organizational diffusion research and was borrowed from Rogers (1995) latest book on ODI theory. The ODI process includes two major stages initiation, which includes the decision to adopt or reject an innovation, and the implementation stage. The last section of the proposed conceptual framework presents an outcomes component. Within this component is an element that represents the consequences of innovation. Although this concept has been omitted from the majority of research on the subject, the consequences concept is also derived from Roger's ODI process model. The performance element is included as an outcome to ensure proper measurement of strategic orientation within the Miles and Snow typology.

The studies presented within this section support the conceptual idea that a company's environment affects its innovation behavior. However, the cross-disciplinary literature on ODI has yet to measure the relationship between strategy and innovativeness. The following section provides an overview of the constructs that will be used to test the effect of strategic orientation on innovation behavior in the MCR context. The model for testing the relationships between these constructs will be fully developed through the presentation of hypotheses in Chapter 2.

Theoretical Justification

Theoretical justification for the model presented in this dissertation is provided by two frameworks that have been used extensively to guide empirical inquiry in organizational behavior, management and marketing. Organizational Diffusion of Innovations Theory (ODI) provides the overarching framework for the study. The Miles and Snow typology provides the conception for the strategic orientation construct used to represent *strategy* in this study. A brief overview of each theory and its relevance to this dissertation is presented within this section and elaborated in detail in Chapter 2.

ODI theory is the organizational adaptation of Roger's classic Diffusion of Innovation theory that has been typically used to investigate and understand the communication of an innovation across members of a social system over time (Rogers, 1995). Within the context of the theory, an innovation is defined as any "idea, practice, or object perceived as new by an individual or other unit of adoption" (Rogers, 1995, p.36). The ODI literature is extensive, including research and thought from a number of social science fields such as communications, marketing, and organizational behavior. A host of innovations and organizational entities have been the focus of past ODI research (Kennedy, 1983; Kimberly and Evanisko, 1981; Rogers 1995).

The common thread that binds this cross-disciplinary body of research is the use of ODI theory in guiding its inquiry. ODI research typically investigates the catalysts and/or

6

barriers to the innovation adoption decision, found in the Initiation stage of Roger's process model (Figure 2). There are numerous examples of empirical studies that investigate the effect of different antecedents on the rate/level of innovation adoption, commonly referred to as 'adoption behavior' (for example, Myer and Goes, 1988; O'Callaghan, Kaufmann and Knosynski 1992; Ramamurthy and Premkumar, 1995). This stream of research has been criticized for its preoccupation with the initial adoption decision and virtual avoidance of the subsequent implementation stage and potential long-term consequences of innovation. This shortcoming, referred to as *pro innovation bias*, has been attributed to the operational difficulty in examining complex implementation processes within organizations (Rogers, 1995).

The research proposed in this dissertation will focus on the initial adoption decision component in Roger's process model. While the importance of implementation and consequences is recognized, the primary focus of this research is to investigate whether strategic orientation affects the decision to adopt or reject multiple channel retailing. If strategic orientation affects innovation behavior then we can recommend directions for implementation according to strategic group membership.

The Miles and Snow typology provides the theoretical basis for the operational construct intended to represent 'strategy' in the ODI framework. Referred to from this point forward as strategic orientation, this construct will be investigated for its affect on level of innovation and firm performance. The ODI literature is devoid of research that directly links the strategy concept to innovation behavior. The Miles and Snow typology provides a dynamic conception of strategic behavior, which classifies the business organization into a particular type, based on its pattern of behavior towards the *adaptive cycle*. The adaptive cycle refers to the manner that an organization reacts to its competitive environment through its approach to solving three fundamental problems: the entrepreneurial problem, the engineering problem, and the administrative problem (Miles and Snow, 1978). Firms are classified into a four-part configuration based on their adaptive behavior patterns: prospectors, analyzers, defenders and reactors. In general, the prospector organization represents the most aggressive strategic type, while the analyzer and defender are less aggressive, respectively, and the reactor displays inconsistent characteristics of all three types. Over the past twenty years, the Miles and Snow typology has gained acceptance among management and marketing researchers in the examination of corporate strategy, structure, and process (Matsuno and Mentzer, 2000; McDaniel and Kolari, 1987; Hambrick, 1983; Snow and Hrebiniak, 1980).

In order to appropriately analyze the effect of strategic orientation on innovation, the performance construct must also be measured. According to the Miles and Snow theory, prospectors, analyzers, and defenders perform equally well when they are consistent in their adaptive decision patterns. The reactor, on the other hand, performs poorly because it does not follow a consistent pattern of adaptive behavior. To date this typology has not been applied in the retail industry. Therefore, to confirm its applicability to this industry an assessment of the relationship between strategic orientation and performance is

7

necessary prior to the investigation of strategic orientation and innovation. Knowledge of performance provides criterion validity in effectively classifying the retail organizations into the Miles and Snow configuration.

Based on the Miles and Snow theory, the model tested in this research is expected to detect differences in the manner that prospectors, analyzers, defenders and reactors behave when adopting multiple channel retailing as a channel strategy (i.e., innovativeness). Further, we expect that clear strategic orientations among prospectors, analyzers, and defenders will result in consistent performance among these firms.

Statement of Purpose

The primary purpose of this dissertation is to empirically test the effect of strategic orientation on innovation behavior (i.e., *level of innovation*) among retailing firms that currently face the decision to adopt a multiple channel strategy, or have already adopted a multiple channel strategy. This research is unique in that it integrates two well-established organizational theories for the first time, in order to investigate a timely problem occurring in the retail context.

The central question addressed in this dissertation is *What is the effect of a retail firm's strategic orientation on its innovation behavior with regard to multiple channel retailing?* A second question that this research also addresses is *What is the effect of strategic orientation on firm performance?*

Overview of the Dissertation

This dissertation is comprised of five chapters: the introduction is presented in Chapter 1; the literature review and hypotheses are presented in Chapter 2; the methodology is presented in Chapter 3; results are presented in Chapter 4, and; conclusions, limitations and directions for future research are presented in Chapter 5.

Chapter 1 introduces the context and the practical need for the study. The context is represented by retailers facing the decision to adopt, postpone or reject multiple channel retailing. The conceptual framework is also presented along with theoretical justification and statement of the research questions.

Practical and theoretical justification for the study is made in greater depth in Chapter 2 which reviews the relevant trade and academic literatures, respectively. An overview of the phenomenon of MCR is provided using information and findings from the retail trade literature. Within the academic literature, General Diffusion of Innovations theory and Organizational Diffusion of Innovations (ODI) are first covered. For the ODI review, empirical research on the determinants of innovation adoption and the innovation process are considered. This portion of the literature review concludes with a presentation

of pro-innovation bias and the concept of innovation consequences. The strategic orientation component includes a review of configuration research, followed by a presentation of the Miles and Snow typology. Findings borne out of empirical research using the Miles and Snow typology are explicated by strategic type (i.e., prospectors, analyzers, defenders, and reactors). Hypotheses are stated within the literature review.

Chapter 3 presents the methodology for data collection and hypothesis testing. Sample selection and key informant selection processes are first explained. The scales for each of the study's variables are next presented and discussed in terms of adaptation to the study's context. The three phases of pre-testing are presented, followed by the data collection procedures. Chapter 3 concludes with a report of the study's response rate and delineation of the statistical analysis procedures.

The results are presented in Chapter 4. First, sample characteristics and non-respondent evaluations are presented. Preliminary statistical tests for normality and the equality of variance components are presented. The overall model test is presented followed by hypothesis testing. The dissertation concludes with Chapter 5 which presents the final conclusions, limitations, implications and directions for future research.

CHAPTER 2

REVIEW OF LITERATURE

The review of literature is divided into two major sections. The first section contains a description of the evolution and current state of MCR (i.e., the study's context). The second section presents the theoretical foundation used to support the study's purpose, aims and design.

Context of the Study

Multiple channel retailing (MCR) provides the context for the study. Defined in this research as the practice of distributing goods and services through both physical and Internet channels, MCR has risen out of the broader e-commerce phenomenon. The following discussion of MCR provides an overview of its evolution and current state of diffusion across the retail industry.

Multiple Channel Retailing

The term *multiple-channel retailing* (MCR) refers to the practice of both Internet and traditional retailing by stores that are primarily established in the traditional channel. Often termed *clicks and mortar* retailing, this phenomenon has created a great deal of excitement in the retailing industry since Amazon.com launched the first large scale shopping website in 1997. Along with the growing phenomenon of business-to-business *e-commerce*, retailers began exploring the Internet channel as a selling/marketing vehicle in the mid-to-late 1990s. On-line retailing took off as a promising venture along with the general e-commerce trend. Traditional retailers began to adopt Internet channels for selling and marketing purposes during 1998 and 1999 with an even greater rate of adoption planned for the year 2000 (Ernst and Young, 2000). In 1999, Jeff Bezos, founder of Amazon.com was quoted in his comparison of e-retailing to the Cambrian era of evolution, "That was when the earth had the greatest rate of new life...what people do not know is that it also had the greatest rate of extinction," (Colvin, 1999). Despite the early promise of the MCR phenomenon, Bezos' prediction began to come true for many e-retail players in 2001.

Although industry experts agree that MCR represents an enormous business opportunity, as Bezos foreshadowed, there is growing recognition that doing business in the Internet channel is far from risk free (Seckler, 2000; Zeller and Kublank, 2002). In their 2000 special report on global on-line retailing, Ernst and Young reported that more than 70% of retailers surveyed (worldwide) indicated that they would have an online presence by the end of that year. This number doubled from the previous year in which only 36% of respondents indicated plans to adopt an Internet presence.

Despite the Ernst and Young report's optimism, during 2001 the realities of doing business in the Internet channel began to sink in for U.S. retailers. In late October (2001) two U.S. industry leaders, Wal-Mart and K-Mart, announced plans to reclaim their outsourced e-retail divisions, *Walmart.com* and *Bluelight.com*, respectively. Disappointing failures in 1999 led both chains to take greater control of their e-retail divisions in efforts to control the growing cost and overhead required to sustain these operations (Scheraga, 2001a). More recent examples of retailers scaling back their Internet operations include Federated Department Stores' pullback of the *Bloomingdales.com* and *Macys.com* websites. These two chains decided to change their on-line operation from selling mediums to marketing/advertising mediums (Scheraga, 2002b).

Some of the challenges facing on-line retailers in the United States include customer service, security, order fulfillment and disintermediation, which is the practice of manufacturers bypassing the retailer and selling directly to the consumer. Early observations indicate that established retailers who enjoy brand equity are likely to benefit most in the on-line environment. Further, retailers who have strong knowledge of their target consumers are also better positioned for success in this channel (Humphreys, 2001).

The Sectors

MCR has shown differing popularity across retail sectors. Anecdotal evidence suggests that the most popular sectors for retailing online include: books, music and toys, computers and peripherals and specialty apparel (Ernst and Young, 2000). When online retailing began, researchers asserted that e-retailers who offer *search* rather than *experience* goods would be more likely to succeed on-line (Klein, 1998). However, experiential products including apparel and accessories, luxury goods, and cosmetics have shown promise in this channel (Ernst and Young, 2000). Sectors including general merchandise and grocery retailing are also continuing to evolve in their online businesses. According to discussion in the trade literature, no single sector stands out as the most promising category for on-line retailing. Industry analysts continue to anticipate which sectors will be successful in the future. Much like the broader e-commerce phenomenon, many of the predictions about the success of specific product categories are yet to have been realized (Seckler, 2000).

Current State of MCR

It is clear that the excitement that surrounded the Internet as a selling tool in the late 1990s has begun to dissipate. Large retailers such as Wal-Mart, K-Mart and Federated have tightened the reigns on their on-line operations indicating that the profits have not been as quickly realized as expected (Scheraga, 2001; Scherage, 2002). Industry studies and expert opinions tend to agree that it is extremely difficult to predict who the successful players in MCR will be, beyond those who have abundant resources and some degree of established brand loyalty.

11

The trade literature overwhelmingly points to the idea that a bandwagon effect has been and may still be active in the retail industry with regard to MCR (Colvin, 1999; Zeller and Kublank, 2002). Abrahamson (1991) and Abrahamson and Rosenkopf (1993) define *bandwagon effects* as managerial fads or fashions that often drive inefficient decisions to adopt technological innovations that may result in negative consequences for the adopting firm. The recent activities of large U.S. retailers scaling back their online operations provides anecdotal evidence for the idea that MCR was adopted at unrealistic rates/levels when it began to diffuse across the industry. To date, there are no hard numbers on the exact degree of diffusion (i.e., adopters vs. non-adopters) of MCR in the domestic retail industry. One of the aims of this research is to demonstrate that environmental pressures have influenced the adoption of MCR in the retail industry. That is, that the overwhelming popularity and promise that MCR created in the industry during its early stage of diffusion may have led to premature/suboptimal adoption behaviors.

Theoretical Foundation

Research from two theories is reviewed to guide the present study. These frameworks are comprised of literature from the organizational stream of Diffusion of Innovations theory and strategic configuration thought, which is derived from contingency theory. Organizational Diffusion of Innovations (ODI) theory provides the overarching framework for the study, while strategic configuration thought provides direction for understanding competitive behavior via the strategic orientation concept. Both streams of research arise from a cross-disciplinary base, with strong influences from strategic management, general management, industrial organization economics, organizational behavior and marketing. In addition, both literatures are quite extensive, ranging over both time and context, and are intentionally focused in this research to inform the potential impact of competitive behavior (via strategic orientation) on MCR adoption.

Organizational Diffusion of Innovations (ODI) and the Retail Context

Research into the diffusion of innovations across the retail organization is extremely sparse. While a great deal of attention has been afforded the consumer adoption/diffusion of innovations, considerably less has been paid to organizational adoption/diffusion and even less has been performed in the retail context (see Gatignon and Robertson, 1985 and Kennedy, 1983). In fact, only two studies were found in the extant retailing literature that considered innovation adoption within this industry. Recently, Brockman and Morgan (1999) used general Diffusion of Innovation theory to trace distribution innovations in the retailing industry over the past century. In their 1991 study, Shim and Kotsipolous investigated the adoption behavior of gift retailers with regard to operating technologies (i.e., clusters) such as in-store scanners (Shim and Kotsipolous, 1991). In both cases, attributes of the innovations themselves were investigated for their relationship to adoption behavior. In order to fully understand the theoretical directions that ODI offers, it is necessary to expand this review to include inputs from empirical research that has been performed outside of the retail context.

12

The following sections present an overview of the general theory on the Diffusion of Innovations as well as its past application in related business fields. Next, the organizational interpretation of Diffusion of Innovation Theory (ODI) is defined and discussed in terms of its nature and breadth. The determinants of organizational adoption behavior are identified and discussed. Next, academic models of the ODI process are presented including the Zaltman, Duncan and Holbek (1973) model and the Rogers (1995) model.

General Diffusion of Innovation Theory

Although the origins of Diffusion of Innovations Theory can be traced back to turn-of-the century Europe, the theory did not take off as a popular frame for inquiry until the 1960's following the publication of Rogers' *Diffusion of Innovations* (1962) specifically written to attract attention to the framework. Rogers created substantial interest in the theory and subsequent application across a range of social science disciplines ensued.

Diffusion of Innovations Theory seeks to explain the process by which an innovation is communicated through certain channels over time through the members of a social system. Rogers (1995) states that the theory embodies three major elements: the innovation, communication channels, and time. Within the context of the theory, an innovation is defined as, "an idea, practice, or object perceived as new by an individual or other unit of adoption" (Rogers, 1995, p.35). The innovation is communicated through channels, which provide passage for messages from one individual to the other, represented at one extreme by interpersonal communications and at the other extreme by mass media. Finally, a time element is present in (1) the innovation-decision process, (2) innovativeness (i.e., early versus late adopters) and (3) a specific innovation's rate of adoption (Rogers, 1995).

Application in Business Fields

Application of Diffusion of Innovation theory to business problems has tended to fall within the general management and marketing fields. In the latest edition of *Diffusion of Innovations*, Rogers (1995) reports that approximately 4,000 articles have been published on diffusion of innovations research since 1940. The management and marketing category is reported to be the second most heavily researched area with regard to diffusion of innovations—behind rural sociology—the field that first applied Diffusion of Innovations Theory in the United States (Ryan and Gross, 1943). Specifically, these fields contributed fifteen percent (15%) of all innovation publications between 1940 and 1996.

The marketing discipline originally embraced general diffusion theory to investigate the diffusion of new products across consumer segments. The incentive to predict new product success (or failure) generated a rich stream of research on consumer innovation

behavior. This research produced modeling techniques and classification tools that are applied in both practical and academic fields to date (Bass, 1969; see Mahajan, Muller and Bass, 1990 for comprehensive review of diffusion models in consumer marketing).

Organizational Diffusion of Innovations (ODI)

As diffusion research began to grow within marketing and management, academics recognized that consumer diffusion research did not generalize to the business context. In 1971, Ozanne and Churchill indicated that marketing researchers' preoccupation with consumer adoption of innovations had altogether avoided these behaviors in the industrial context. Zaltman, Duncan and Holbek (1973) subsequently developed the first theoretical framework that considered diffusion exclusively within the organizational context. Along with the growth of telecommunications and computer technologies in the 1980's, the Zaltman, Duncan and Holbek framework created interest in the diffusion of innovations across business organizations (Van de Ven and Rogers, 1988).

The fundamental difference in organizational diffusion of innovations and individual diffusion of innovations lies in the idea that individuals behave very differently when faced with an adoption decision in the organizational context. Rogers (1995) indicates that there are three types of innovation decisions: Optional innovation-decisions, Collective innovation-decisions and Authority-innovation decisions. Optional innovation-decisions refer to the individual choice to adopt or reject an innovation, independent of inputs by other members of a system. Collective innovation-decisions rely on group consensus in making adoption decisions, and authority-innovation-decisions rely on a "few individuals in a system who possess power, status or technical expertise," in making adoption decisions (Rogers, p.372, 1995). In the organizational context, the latter two decision types (i.e., collective and authority) are prevalent, which illuminates the complexity of organizational innovation decisions.

Rogers and Agarwala-Rogers (1976) define the organization as a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labor. Their definition also delineates five dimensions of a stable organizational structure: predetermined goals, prescribed roles, authority structure, rules and regulations and informal patterns. They posit that these structural dimensions provide control over individual communication allowing organizations to maintain stability and increase efficiency (Rogers and Agarwala-Rogers, 1976). It is these structural mechanisms, and the manner in which they control communication patterns, that constrain adoption behaviors within organizations.

Rogers (1995) states that one of the greatest impediments to advancing organizational diffusion research is the fact that, "organizational variables act on innovation behavior in a manner over and above that of the aggregate of individual members of the organization" (p.377). Therefore, it is difficult to isolate the variables that

14

actually impact innovation behavior within organizations. In business organizations, structural mechanisms and communication patterns tend to vary. In addition, as Robertson and Gatignon point out (1986) there are structural controls present in the firm's external environment (e.g., the industry level) that can constrain communication patterns which also impact innovation diffusion within the firm.

The Nature of ODI Research

A review of the ODI literature indicates that researchers have focused attention on the variables that determine adoption behavior within firms. However, this literature has virtually avoided examination of the external environment on adoption behavior. Nor has this literature adequately considered the extended diffusion process and adoption outcomes.

Attention to adoption of innovations at the organizational level has been sporadic over the past thirty years, resulting in a literature that is more conceptual than empirical. However, on the whole, this literature is clearly focused on identifying the determinants of adoption behaviors and offers insight into understanding which organizations are more or less likely to adopt or reject innovations.

The focal dependent variable within this body of research is *adoption behavior*. Adoption behavior is typically measured as the discreet decision to adopt or reject an innovation (e.g., Ettlie, 1983; Gatignon and Robertsonn, 1985). The first researchers to operationalize adoption behavior as a multiple level concept were Gatignon and Robertson (1989). They discussed the importance of considering multiple levels of rejection in their research, to provide more realistic innovation decision alternatives to organizational respondents. The ODI literature tends to overwhelmingly treat adoption behavior as a categorical variable. Of course there are contextual differences in the manner that researchers conceive and measure adoption behavior.

Determinants of Adoption Behavior

The ODI literature reveals more than eighty determinants that have either been conceptualized or measured for their impact on adoption behavior. A large portion of this work is conceptual and does not provide empirical direction for the current study. In order to focus this review, determinants that have not been empirically tested are omitted.

The empirical work that investigates the determinants of innovation behavior at the organizational level can be divided between the adopter organization level and the adopter industry level. That is, factors that affect the adoption of a given innovation within the adopting organization comprise the first group and factors that affect adoption of a given innovation within the adopting organization's industry comprise the second group. In addition, there are a number of factors that have been tested for their impact on

organizational adoption at the innovation attribute level, the individual decision-maker level, and the supplier's (of the innovation) industry level. Because MCR is considered an organizational level innovation, the review will concentrate on adopter organization level factors and industry level factors. Factors at the innovation attribute level, the individual decision maker level and the supplier's industry level will be briefly summarized in a single section. These factors will not be used in the conceptualization of this research.

Adopter Organization Level Determinants

The adopter organization is the level that has received the most attention in ODI research. This is likely due to the fact that, at this level, many of the structural mechanisms that Rogers uses to explain organizational constraints on the diffusion process are visible and in some cases measurable (e.g., size, centralization, etc.). Empirically tested determinants of adoption behavior at the adopter organization level include: size, top management support, presence of an innovation champion, information systems (IS) sophistication, task scope, company centralization and complexity of selling task.

Size is the most widely tested determinant of organizational adoption and has repeatedly been found to positively affect adoption rates and levels (Baldridge and Burnham, 1975; Hage and Aiken, 1970; Moch and Morse, 1977; Mytinger, 1968; Rosner, 1968). The consistency of findings over both time and context, indicate that size is a stable predictor of positive adoption behaviors. Based on previous research, Rogers (1995) formulated the following generalization, "*Larger organizations are more innovative* (p.379)". Both Kennedy (1983) and Rogers (1995) state that size likely behaves as a surrogate for other variables such as total resources or technical expertise of personnel. Kimberly (1978) posits that size and adoption behavior are positively related because as size increases the organization acquires critical mass, which facilitates the adoption process.

Robertson and Gatignon (1989) considered the affect of company centralization and complexity of selling task on adoption behavior in their examination of laptop computer adoption among salesforce employees in the insurance industry. They hypothesized that company centralization positively impacts adoption of standardized technologies. This is counter to traditional thinking, which holds that high degrees of company centralization deter adoption of innovations (Hague and Aiken, 1970; Moch and Morse, 1977). They also hypothesized that complexity of the selling task would positively affect adoption behavior, assuming that the innovation simplified the selling task. Again, diffusion theorists have traditionally conceptualized complexity as a deterrent to innovation adoption (Kennedy, 1983; Rogers, 1995; Zaltman, Duncan and Holbek, 1973). They did not find evidence to support either of their hypotheses in this case, which appeared logical in context but were also counter to the extant literature.

In their 1995 investigation of EDI adoption, Ramamurthy and Premkumar examined top management support, presence of an innovation champion, IS

16

sophistication and task scope for their affect on adoption behavior. The authors reasoned that commitment of top management, presence of a key motivator for innovation inside the organization (i.e., champion), and capability of the IS function in adapting the EDI technology positively affected EDI adoption. Further, they posited that the task scope within the firm should provide an adequate fit for EDI technology, which should diffuse across organizational sub-units to realize expected benefits of adoption. They reasoned that presence of broader task scopes within firms should motivate organizations to foster extensive diffusion of EDI. Note that these authors were the first within this review to adopt a longer-term "diffusion" view rather than the discreet adoption/ rejection view of behavior. The findings from this study indicate that presence of both an innovation champion, as well as a broad task scope, positively affect the adoption and extensive diffusion of EDI within organizations. Top management support and IS sophistication did not impact adoption and extensive diffusion of EDI in this investigation (Ramamurthy and Premkumar, 1995).

Adopter Industry Level Determinants

Early research on diffusion of innovations across organizations focused predominantly on determinants at the organizational, decision-maker and innovation attribute levels. In the past fifteen years, there has been growing recognition that sources of influence external to the adopting firm can influence adoption behavior. Both Frambach (1993) and Robertson and Gatignon (1986) argued that organizational diffusion researchers should consider industry level effects for both the adopter firm as well as the supplier firm of a given innovation. Frambach conceptualized a model of organizational adoption and of innovations that added the supplier firm and supplier industry into an integrated framework along with the adopter organization and individuals within the adopter organization. Robertson and Gatignon (1986) approached their conceptualization from an industrial organization perspective—proposing that both the adopter-industry competitive environment and the supply-side competitive environment affect diffusion of innovations. In both cases these researchers conceptualized impact on "diffusion" but actually used innovation adoption/rejection behavior to describe diffusion. Existing research on determinants of adoption / rejection behavior from external sources remains predominantly conceptual.

Robertson and Gatignon (1989) initiated the previously mentioned laptop computer inquiry in order to test a few of the determinants presented in their 1986 conceptual work. At the adopter industry level, they examined industry concentration, competitive price intensity, demand uncertainty and communication openness. They posited that industry environments under oligopoly conditions—where competition between a few major players is intense—fosters innovation adoption among incumbent firms. According to their logic, as industry concentration increases (short of monopoly conditions) the likelihood of innovation adoption increases. In the case of competitive price intensity, the researchers hypothesized that intense price competition within

17

industries—deterred individual firms from adopting innovations—due to perceived risk of financial resource waste. They also hypothesized that firms in industries characterized by a high degree of demand uncertainty are more likely to adopt new technologies (i.e., innovations). This hypothesis was based in part on an earlier study which found that broad environmental uncertainty in the food processing industry led to faster rates of adoption (Ettlie, 1983). Their final hypothesis examined the affect on industry communication openness on individual firm adoption behavior. Based on evidence from an earlier study, which found that linkage of individual firms to external information environments encouraged innovation adoption, they posited that communication openness increased the likelihood of adoption of technological innovations (Kimberly, 1978). Two of the hypothesized relationships turned out as expected—concentration of adopter industry and competitive price intensity. The former had a positive affect on adoption and the latter had a negative affect on adoption.

Other Determinants of Innovation Adoption

Referred to in previous discussion of the ODI literature, there are factors at the innovation attribute level, the individual decision-maker level and the supplier (of the innovation) industry level that impact adoption behavior in organizations. Although these factors are outside the scope of this particular research, which focuses on the organizational level, their mention is important in for a full understanding of the progress of ODI research. Further, many operational ODI models consider factors across the different levels (e.g. Ramamurthy and Premkumar, 1995). Therefore, each of these three levels of factors will be defined and briefly described in terms of relevant empirical findings.

Innovation attribute level determinants. The innovation attribute level determinants of adoption behaviors are typically related to the innovation itself (i.e., its attributes)—and the perception an organization has of the innovation. Compatibility, complexity, relative advantage and observability of innovations have been tested by various researchers for their impact on adoption behavior in the organization.

Compatibility refers to the degree that an innovation is consistent with the needs and existing values of the organization. Complexity is the perceived difficulty associated with using and understanding an innovation. Relative advantage is the degree that a new innovation is perceived to be an improvement over its predecessor—usually measured in business as a form of profitability. Observability is the degree to which the results of an innovation are visible to humans.

In a 1988 study on medical innovation, Myer and Goes found that low complexity and high observability were positively related to adoption of technologies in health care organizations—thus indicating that these two determinants positively impact innovation decisions. O'Callaghan, Kaufmann and Konsynski (1992) examined compatibility and relative advantage in terms of electronic data interchange (EDI) technology adoption in

marketing channels. They developed measures of both constructs and found evidence that both compatibility and relative advantage of EDI resulted in higher adoption rates. Compatibility was measured along two-dimensions—compatibility with the organization (i.e., daily operations) and compatibility with existing systems. Compatibility with present systems was found to impact adoption positively, while the former had no impact. In a subsequent study, Ramamurthy and Premkumar (1995) found a positive relationship between both types of compatibility (i.e., organizational and systems) and relative advantage on EDI adoption across industry types. They also examined complexity and found no relationship between perceived difficulty and adoption of EDI technologies.

Individual decision-maker level. ODI researchers have also suggested that individual decision-making within the organization impacts the adoption decision. A single empirical study tested the following individual decision-maker determinants within an organizational business context (firm level): preference for negative information, preference for heterogeneity, exposure to personal information and exposure to impersonal information. Robertson and Gatignon (1989) investigated the factors that account for adoption/rejection of high technology innovations (i.e., laptop computers for salesforce use) in firms across a range of industries. Positing that negative word-of-mouth was more influential than positive word-of-mouth communication, the researchers tested the affect of preference for negative information among adopters and found no relationship. They also found no relationship between preference for heterogeneity or exposure to impersonal information and adoption or rejection behavior. Preference for heterogeneity refers to an individual's preference for information from external sources (i.e., external to the firm's immediate industry). Exposure to personal information refers to the level of access a given individual has to relevant personal innovation sources—while exposure to impersonal information refers to the level of access an individual has to relevant external information sources. Their only significant finding was that lack of exposure to personal information sources resulted in rejection behaviors (Robertson and Gatignon, 1989).

Supplier industry level. Robertson and Gatignon also examined two supplier industry level determinants in their 1989 inquiry. As mentioned earlier, they reasoned that forces within the supplier (of the innovation) industry environment could impact behaviors across adopter firms. They examined the affect of vertical coordination and supplier incentives on firm level adoption behaviors. They reason that industries which foster vertical coordination between suppliers and customers (e.g., the airline industry) facilitate adoption through increased communication—and therefore increase the likelihood of innovation adoption among firms. Related to the former hypothesis, the researchers also posited that increased supplier incentives (i.e., price incentives) increase adoption likelihood. Results from this study indicated that greater degrees of vertical coordination and supplier incentives increased the likelihood of adopting laptop computers for sales-force use.

19

Pro-Innovation Bias

Aside from Robertson and Gatignon's acknowledgement of the rejection decision in their 1989 study, evidence of pro-innovation bias is abundant in the organizational diffusion of innovations literature. Pro-innovation bias refers to the propensity of researchers to consistently perceive the decision to adopt an innovation as the correct choice—neglecting the existence of poor innovation adoption decisions in scholarly research. Rogers defines pro-innovation bias in the following statement, "The pro-innovation bias is the implication in diffusion research that an innovation should be diffused and adopted by all members of a social system, that it should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected" (1995, p.100).

A stream of strategic management research has noted the presence of pro-innovation bias in business research (Abrahamson, 1991; Butler 1988; Kimberly and Evanisko, 1981; Van de Ven, 1986). Abrahamson (1991) has repeatedly argued that pro-innovation bias continues to dominate business research, and argues that all innovation adoption decisions are not efficient, particularly in competitive business environments. Despite this criticism, few researchers have confronted pro-innovation bias in their research.

In addition to pro-innovation bias, empirical work within the organizational diffusion of innovations literature stops short of considering the full innovation process, which requires a longer-term orientation. Although researchers occasionally refer to their dependent variable (in relation to the determinants) as "innovation diffusion" they overwhelmingly measure this construct through the adoption/rejection decision (i.e., adoption behavior).

The Innovation Process

There are two prominent models of the innovation process in the academic literature: the Zaltman, Duncan and Holbek model (1973) and the Rogers model (1995). Although additional organizational innovation models have been proposed by diffusion theorists, these two models have been widely accepted and applied in the extant literature (Burns and Stalker, 1961; Hage and Aiken, 1970; Harvey and Mills, 1970; March and Simon, 1958; see Zaltman et al., 1973 for an extended review). The Zaltman model was the first widely accepted diffusion model specifically designed to guide inquiry at the organizational level. Rogers (1995) updated the Zaltman model in his latest edition of *Diffusion of Innovations*—taking into account the progress of organizational diffusion research that occurred since the former model was framed. The two models are virtually identical in their depiction of the broad diffusion of innovations process. Brief explanations of each theoretical model follow in the order that they were developed.

The Zaltman, Duncan and Holbek Model

Zaltman et. Al (1973) developed their "Innovation Adoption-Process" model based on two broad stages: initiation and implementation. They noted that previous theorists/researchers terminated their consideration of diffusion after the initiation stage. They therefore added an implementation step to the process model (Table 1).

The initiation phase includes three sub-stages that consider the process an organization goes through as it considers adopting an innovation. The knowledge-awareness sub-stage refers to the process by which an organization becomes aware of a potential innovation and/or recognizes an internal need for this innovation, referred to as a "performance gap." The formulation of attitudes toward innovation sub-stage involves the development of organizational members' attitudes toward an innovation, which center around two dimensions: openness to the innovation and potential for the innovation (Zaltman, 1973). The initiation phase is completed by the decision sub-stage, whereby the organization decides to adopt (favorable attitude) or reject (unfavorable attitude) the potential innovation. Zaltman notes that external information is very influential in this final initiation sub-stage.

The Zaltman, Duncan and Holbek conceptualization of the implementation stage was simplistic and somewhat exploratory at the time the theory was framed. The

Table 1. Stages of Innovation-Adoption Process

Stages		Sub-stages
I. Initiation stage		
	1.	Knowledge awareness sub-stage
	2.	Formulation of attitudes toward innovation sub-stage
	3.	Decision sub-stage
II. Implementation stage		
	1.	Initial Implementation
	2.	Continued-sustained Implementation

Source: Zaltman, G, Duncan, R. and Holbek, J. (1973). *Innovations and Organizations*, John Wiley and Sons Eds.: New York, p.158.

implementation stage includes two sub-stages: the initial implementation sub-stage and the continued-sustained implementation sub-stage. The initial implementation sub-stage is the period that the organization first uses a new innovation. If this sub-stage is successful, in that the innovation is understood and meets expectations, then the process proceeds to the continued-sustained implementation sub-stage.

Although this theory was the first to include implementation in its process framework, it does not adequately explain the events and/or behavior that occur within the two indicated implementation sub-stages. Zaltman admitted that the implementation process was difficult to depict theoretically, due to its inherently dynamic nature across organizations. He explained that linear representation of implementation behaviors was challenging for researchers of organizational phenomena. Zaltman ultimately justified his conceptualization, by arguing that the presence of implementation in the diffusion process was critical for analytical progress in diffusion research.

The Rogers Model

The Rogers (1995) model, "The Innovation Process in Organizations" offers an updated conceptualization for organizational diffusion researchers. The Rogers model, presented in Figure 2, is the primary source of conceptual direction for this research.

Roger's conception of the broad Initiation stage is very similar to that of Zaltman, Duncan and Holbek. Like his predecessors, Rogers agrees that the initiation stage must take place in order for innovations to diffuse within organizations. He describes that agenda setting is driven by the same phenomena that Zaltman conceptualized, recognition of performance gaps and/or emergence of a new innovation. However, Rogers depicts the entire initiation stage as an ongoing process that requires constant attention within the organization.

Roger's conceptualization of the implementation stage goes into greater depth than that of the Zaltman model. The three sub-processes of Rogers' implementation stage involve the mutual adaption of both the organization and the innovation. Rogers' illustrates this adaption through the three sub-stages of implementation. In the redefining and restructuring sub-stage, the organization modifies the innovation to fit its needs—and in many cases the innovation causes structural changes in the organization. In the clarifying sub-stage, the adoption becomes imbedded in the organizational structure. In the final sub-stage, routinizing, the innovation and the organization become a single entity.

Roger's Concept of Consequences. Rogers conceptualizes that changes can occur as a result of adoption or rejection of an innovation, which he terms *consequences*. The consequences concept is not included in his process model, but is instead presented as a direction for future research across all diffusion levels (e.g., individuals, groups,

22

		Adoption/Rejection Decision		
I. INITIATION ──────► II. IMPLEMENTATION ──────►				
#1	#2	#3	#4	#5
AGENDA SETTING	MATCHING	RESTRUCTURING & REORGANIZING	CLARIFYING	ROUTINIZING
General organizational problems that may create a perceived need for innovation	Fitting a problem from the organization's agenda with an innovation.	The innovation is modified and reinvented to fit the organization, and organizational structures are altered.	The relationship between the organization and the innovation is defined more clearly.	The innovation becomes an on-going element in the organization's activities, and loses its identity.

Figure 2. The Organizational Innovation Process

Source: Rogers, E. (1995). *Diffusion of Innovations* (4th ed.) The Free Press: New York, p.392.

organizations, and social systems). Rogers explains that consequences have not been examined by diffusion researchers largely due to three obstacles: 1) the assumption that all innovation adoption is positive; 2) difficulty in approaching consequences through survey methods; and 3) difficulty in developing measures for consequences.

Shortcomings in the ODI Literature

For more than twenty-five years, researchers have focused efforts on examining the factors that influence innovation adoption behavior *within* firms. Illustrated in the previous literature review, a great deal of attention has been paid to factors that influence behavior internal to the adopter organization or at the innovation attribute level, compared to factors in the adopter organization's competitive environment. Out of this body of research only a single factor, size, is considered a stable predictor of innovativeness among organizations.

23

Several researchers have suggested that external environment factors influence firm level innovation behavior (Ettlie, 1978; Robertson and Gatignon, 1986). However, only a single study has examined the effect of competition on innovation adoption (Gatignon and Robertson, 1989). The lack of attention to competitive effects is likely due to difficulty in isolating these factors in dynamic competitive environments (Rogers, 1995). The need remains however, for examination of these factors in achieving a clearer understanding of the determinants of innovativeness among business organizations. Addressing this shortcoming is the primary focus of the study. The examination of competition (via strategic orientation) on adoption behavior in a hyper-competitive industry is a notable step towards understanding the effect of competition on individual firm behavior.

The study also addresses, in part, an added shortcoming in the ODI literature: the propensity for pro-innovation bias and the lack of attention to innovation outcomes. Specifically understanding the manner that a firm's interaction with its competitive environment influences its innovativeness can help us understand whether these firms are reactive in their behavior. If they are reactive then ODI tells us that negative consequences are likely to follow. Discussion of how this research advances knowledge in each of these areas is incomplete without a fuller understanding of the strategic orientation construct that will be used to represent competitive adaption.

Strategic Orientation Thought

The strategic orientation concept is commonly used to predict firm/strategic business unit level (SBU) performance, based on structural and behavioral factors. Essentially, strategic orientation refers to a given firm's pattern of interaction with its external (industry) environment (Miles and Snow, 1978; Mintzberg, 1978). The strategic orientation concept is used in this study to represent firm-level adaptation to the external, competitive environment. In this manner, strategic orientation provides a mechanism for examining retailer interaction with its competitive environment.

The idea that firms have and/or maintain a strategic orientation arises from research on strategic configurations, which is grounded in Weberian structural contingency theory (Meyer, Tsui and Hinings, 1993). The particular strategic orientation framework used to guide this research is provided by the Miles and Snow (1978) typology. In order to thoroughly present the strategic orientation concept, its origin will be traced back to structural contingency theory. Next the strategic configuration concept and relevant research on this concept will be presented. The section concludes with presentation of the Miles and Snow typology and research on each of its four strategic configurations: the prospector, analyzer, defender and reactor.

Structural Contingency Theory

The fundamental basis for strategic configurations and the strategic orientation concept is structural contingency theory. Noted by Ketchen et al (1997), the early idea of

configurations was set forth by Weber (1947). According to structural contingency theory, Weber asserted that there are three types of authority in society including: traditional, rational/legal and charismatic. Each of these authority types have an identifiable administrative structure that evolves and prospers according to environmental conditions. Burns and Stalker were among the first to apply structural contingency theory to the organizational context (1961). They suggested that there are two structural types for organizations: mechanistic and organic. They posed that mechanistic organizations prosper in stable environments while organic organizations prosper in dynamic environments. The basic idea that organizations succeed/fail based on interaction with their environment continues to drive strategic configuration research today.

Strategic Configuration Concept

The strategic management field offers important advances in understanding and measuring competitor behavior through the development and analysis of strategic configurations. Based on the idea that competitive behavior (strategic) can be characterized as the alignment of internal (firm-level) resources with external (industry-level) opportunities/threats (i.e., structural contingency theory), researchers assert that firms can be classified into strategic groups based on the way that they interact with their competitive environment. These groupings are referred to as strategic configurations.

Researchers have used the configuration as a tool to investigate the link between firm strategy and performance since the late 1970's (e.g., Dess, Newport and Rasheed, 1993; Hatten and Schendel, 1977; Ketchen, Thomas and Snow, 1993). Organizational configurations are defined as groups of firms that share a common profile of organizational characteristics (Meyer, Tsui, and Hinings, 1993). Ketchen et. al. (1997) capture the concept of organizational configuration in the following quote:

> "Common to these research streams (strategic configuration research) is the assumption that organizational phenomena can best be understood by identifying distinct, internally consistent sets of firms and their relationships to their environments and performance outcomes over time rather than by seeking to uncover one universal set of relationships that hold across all organizations" (p.224, 1997).

Inductive and Deductive Approaches

Strategic configurations are defined through both inductive and deductive approaches. Inductive approaches generally explore the variables that might explain differences in organizational performance. The inductive configuration is formed after identifying the factors that determine performance differences. Therefore, the actual configuration is formed post hoc. Due to the exploratory nature of the inductive approach to configurations, the discriminating constructs/variables tend to differ between studies.

25

The number and diversity of discriminating constructs include numerous examples such as: production/operations capacity expressed in terms of number and newness of plants (Hatten and Schendel, 1977), inventory levels (Dess and Davis, 1984), and average age of inventory as well as inventory turnover ratio (Harrigan, 1985). Other examples of constructs used to inductively define strategic groups include: dimensions of research and development (Cool and Schendel, 1987; DeBondt, Sleuwaegen and Veuglers 1988), measures of capital investment (Primeaux 1985; Lawless and Tegarden, 1991), dimensions of marketing (DeBondt, Sleuwaegen and Veuglers 1988; Figenbaum, Sudharshan and Thomas 1990; Hatten and Schendel, 1977; Hatten and Hatten, 1985; Mascarenhas, 1989), dimensions of management (Porter 1973; McNamee and McHugh, 1989) and different measures of industry structure (Dess and Davis 1984; Fombrun and Zajac, 1987).

The inductive approach has been applied in several instances to sectors in the retail industry. In 1990, Lewis and Thomas used an inductive approach to investigate the link between strategy and performance in the U.K. grocery industry. They used return on sales, return on capital and price-earnings ratios to discriminate strategic groups. Conant, Smart and Salano-Mendez (1993) also used an inductive approach to examine marketing competencies and competitive advantage among small, independent retailers. The factors that they used to discriminate between groups include: presentation and preparation, product variety and depth, low price, high-priced convenience, inventory control and advertising, targeted incentives, and traditional fashions and service. These factors were derived from a factor analysis on 26 original items. Examples of inductive configuration research performed outside of the retail industry are abundant (e.g., Lee and Yang, 1990; Robinson and Pearce, 1988).

Despite widespread application of typologies to strategy problems, the use of these configurations has raised concern among academic researchers. In their review of strategic groups, Barney and Hoskisson (1980) assert that relationships between configuration membership and performance appeared to be equivocal. Comparing results across studies (contexts) is indeed problematic due to varying sources of error (Hunter and Schmidt, 1990). However, Ketchen et al. dispelled some of the confusion among differing outcomes of configuration research in their 1997 meta-analysis of the relationships between configurations and performance. Their examination of 23 years of strategic orientation research (1972-1995) revealed the following conclusions: (1) Configurations explain differences in performance, (2) There is no difference in discriminatory power between inductive and deductively derived approaches, (3) Broader rather than narrower sets of variables provide configurations with greater discriminatory power, (4) Single industry studies produce clearer configurations and (5) Longitudinal rather than cross-sectional studies produce clearer configurations.

Configuration researchers have also been criticized for using over-simplified typologies to investigate phenomena, as opposed to more rigorous theoretical frameworks. In response to this criticism, Doty and Glick (1994) addressed the theoretical worthiness of

strategic typologies, and concluded that typologies are a legitimate theoretical form that can have predictive power. They pointed out that typologies, such as the Miles and Snow configuration, identify ideal types of organizations based upon measurable indicators and therefore surpass simple classification status and facilitate prediction.

The Miles and Snow Typology

From this literature, the Miles and Snow typology was selected as the theoretical base for defining and operationalizing strategic orientation. The Miles and Snow conception of strategic orientation and the theory behind their conception provide a meaningful framework for examining the impact of strategy on innovation.

The Miles and Snow typology was developed from a series of in-depth studies performed in the publishing, electronics, food processing and healthcare industries (Miles and Snow, 1978). The researchers wanted to identify the adaptive patterns that firms follow when reacting to their respective environments. These patterns are played out in the adaptive cycle of the business through solving the entrepreneurial, technological and administrative problems. Out of this research they identified three strategic archetypes that they termed prospectors, analyzers and defenders. They also identified a fourth category, the reactor, which describes firms that do not follow a distinguishable adaptive pattern.

Although there are numerous strategic typologies in the academic literature, the Miles and Snow model has enjoyed the bulk of attention in strategic management. Snow and Hrebiniak (1980) point out that this typology is useful to researchers because it incorporates multiple dimensions of the organization's interaction with its environment and, therefore conceptualizes the organization as a complete system. Despite the fact that there are exceptions to the typology, it has received considerable empirical support in the extant literature over the last twenty years (Hambrick, 1983; Segev, 1987a; Conant, Mokwa and Varadarajan, 1990). The majority of this research has investigated the relationship between strategic type (orientation) and firm structure, distinctive capabilities and performance. Relevant findings are presented along with each respective strategic orientation in the following sections.

Prospector Orientation

Prospector organizations are considered to be the most aggressive firm type. Prospectors are known for developing new markets and frequently introducing new products and services. These firms are characteristically proactive and growth oriented. In solving the engineering problem (i.e., How to best operate?) the firm adopts multiple technologies. The prospector typically uses multiple, cutting edge technologies to meet its operational needs, and is therefore the most aggressive adopter of innovations within the scheme.

The prospector is dominated by marketing and RandD functions at the administrative level (i.e., How to best allocate resources?). However, long term dominance of any single function within the firm structure is due to the continuously changing nature of the firm. Prospector firms are decentralized and lack formalization, which can also facilitate implementation of new innovations.

When a firm consistently follows the prospector pattern in adapting to its external environment it is expected to perform well. Empirical evidence indicates theoretical support for this assumption (e.g., Snow and Hrebiniak, 1980; Matsuno and Mentzer, 2000; McDaniel and Kolari, 1987). Therefore, to adequately measure the concept of strategic orientation, it is necessary to examine performance within the scope of the Miles and Snow theory.

Analyzer Orientation

The analyzer firm is less aggressive than the prospector firm by virtue of its dedicated attention to research and analysis before taking action. In approaching new markets, products and services the analyzer carefully analyzes these opportunities while working hard to maintain current markets, products and services. Growth is typically deliberate and incremental.

The analyzer's approach to technology is also pragmatic. It tends to adopt a *dual technological core* that "is able to serve a hybrid stable-changing domain" (Miles and Snow, p.79, 1978). For this reason analyzers enjoy moderate technological efficiency, compared to the more flexible Prospector. In turn, Analyzer firms tend to be slightly more aggressive than Defender firms when adopting technology.

On the administrative level, marketing and research tend to be the dominant functions followed closely by production in manufacturing firms. This would equate to merchandising and product sourcing functions in retail firms. The corporation is more formalized and centralized than the prospector, although there is decentralization in growth areas.

Defender Orientation

The defender firm is the least aggressive among the strategic archetypes with respect to growth and expansion. Defender firms are most concerned with maintaining current markets, and protecting these markets from competitive threats. Defenders tend to focus on narrow/stable markets and rarely introduce new products and services. Growth is extremely cautious and usually achieved through current market penetration rather than expansion.

28

From an engineering standpoint, the defender firm is most concerned with cost efficiency. Rather than adopting new technology, this strategic type typically improves current technology. The dominant coalition within defender firms tends to be finance. Firms of this type are also the most highly formalized and centralized among the scheme. Defender firms tend to concentrate planning and research efforts on internal problems rather than affording attention to the external environment.

Reactor Orientation

The reactor is the only type within the Miles and Snow theory that does not follow a consistent pattern of adaptive behavior. In the case of the previous three archetypes, consistency resulted in satisfactory performance for firms within these profiles, regardless of the degree of marketing and innovation aggressiveness. However, the Reactor firm lacks consistent response mechanisms in dealing with its environment. In some cases a reactor may be very aggressive and in others it may be completely passive. The distinguishing characteristic of this strategic type within Miles and Snow's theory is that it lacks consistency.

Performance

To confirm that the strategic orientations perform consistently with the Miles and Snow theory firm level (i.e., *corporate* level or *firm* level) performance must be measured. That is, that the three strategic archetypes: prospector, analyzer and defender perform equally well, while the reactor performs poorly.

The terminology used to describe performance in the academic literature has varied over the past 25 years. In the early strategic management literature, performance is commonly referred to as operational effectiveness (OE). More recently, it has been referred to as business performance (McGahan, 1999), organizational performance (Rogers and Wright, 1998) and strategic performance (Chakravarthy, 1986). Despite semantic differences, academics agree that the importance of performance measurement to strategy research is vital (Murphy, Trailer and Hill 1996). Without the ability to measure performance, researchers would be unable to examine the effect(s) of strategic behavior/structure and prescribe directions for improvement (Venkatraman and Ramanujam, 1986).

Performance is commonly distinguished by the researcher's level of analysis and/or context of inquiry. The levels at which performance is commonly measured include the corporate level (McGahan, 1999), the strategic business unit (SBU) level (Chakravarthy 1986), and the functional level (Biggs, Li and Rogers, 1998). Although researchers often delineate distinct levels of performance in their research, there is a tendency to actually measure performance at the same level, with one or more commonly used financial indicators (e.g., return on investment, return on assets and return on sales).

29

Researchers within strategic management have long recognized that the tendency to rely solely on one or two financial indicators as a measure of performance is likely insufficient. Out of this recognition, they have called for the creation of a comprehensive conceptual framework/ definition of performance and, subsequently, an expanded measurement scheme to accommodate this conception (Dess and Robinson, 1984; Venkatraman and Ramanujam, 1985, 1986).

To date, Venkatraman and Ramanujam (1986) provide perhaps the most comprehensive conception of the performance construct. They depict performance as a hierarchical concept that is comprised of three domains: financial performance, business performance (financial and operational performance combined) and, most broadly, organizational effectiveness. In addition, they discuss the merits and demerits of using data derived from objective and subjective sources to reflect the performance concept. Objective sources typically include financial indicators such as profitability ratios and/or calculations derived from secondary sources associated with publicly held organizations. Subjective measures are gathered from key informants inside organizations through survey and/or interview instruments. Venkatraman and Ramanujam advocate using a multi-method/convergence approach to measuring performance (i.e., using data from multiple sources). They also recommend adoption of analytical procedures that are helpful in dealing with systematic bias which causes problems in reaching convergence across indicators gathered from different sources (i.e., subjective and objective sources).

There are a number of studies in the extant marketing/retailing literature that have measured retail performance. Although this stream of literature is limited in its breadth, it reflects a variety of different conceptions and measurements of performance. In accordance with the broader strategy literature, researchers within the retail context tend to use different terminology when referring to the performance concept including general performance (Lewis and Thomas 1990), business performance (Kean, et al. 1998), financial performance (Hilton 1997) and store performance (Donthu and Yoo 1998).

The focus of the different studies that have measured retail performance tends to fall within three general areas: the examination of strategic groups (Conant, Smart and Solano-Mendez 1993; Hawes and Crittenden 1984; Lewis and Thomas 1990; Segev, 1987b), the impact of community/environmental factors (Kean et al. 1999), and the effect(s) of marketing strategy planning/implementation (Conant and White 1999; Hay and Napier 1987). Table 2 presents the specific measures/indicators used to operationalize retail performance in each of these studies.

Retail performance has been measured in several sectors of the retail industry including the grocery sector (Hawes and Crittenden 1984, Lewis and Thomas 1990), the apparel sector (Conant, Smart, and Solano-Mendez 1993), the hardware/general merchandise/furniture sectors (Kean et al. 1998) and the retail banking sector (Hay and

Table 2. Measures of Performance in the Retail Industry

Author(s) / Year	Approach	Sector	Performance Indicators
Conant, Smart & Solano-Mendez 1993	Subjective	Independent retailers	Sales per square foot, cash flow management, effectiveness of cost containment, sales per employee, net income after taxes, sales growth over past 3 years, overall store performance/success
Conant & White, 1999	Subjective	Independent computer retailers	Cash flow, sales growth over past 3 years, overall store performance, current profitability, share of sales in market, sales per employee
Hawes & Crittenden, 1984	Subjective	U.S. grocery stores (generic products)	Gross margin, sales volume, firm profits
Hay & Napier, 1987	Subjective	Retail banking	Return on sales
Kean, et al., 1998	Subjective	Independent retailers	Return on sales
Lewis & Thomas, 1999	Subjective	U.K. grocery retailers	Return on sales, return on capital employed, price/earnings ratio
Segev, 1987b	Objective	Simulated retail environment	Retail market share, accumulated last months sales, gross profit as a percentage of sales, profit as percentage of sales, owner's equity, return on assets, stock price

Reproduced from: Moore, M. (2002), "An Exploratory Analysis of the Dimensions of Retail Performance, 2002 *Proceedings of the Association of Marketing Theory and Practice*, Section 3.1, 10-16.

Napier 1987). For the most part, measurements of retail performance have been undertaken with a subjective approach. This contrasts sharply with mainstream strategy research that tends to rely on public financial indicators to reflect performance. The subjective approach is predominant due to a heavy focus on small business/independent retailers whose financial information is not public (Conant, Smart and Solano-Mendez 1993; Conant and White 1999; Kean et al., 1998). Across only seven studies, more than 23 different items were used to investigate the dimensions of retail performance. In addition, some studies used single-item indicators (Kean et al. 1998). Judging from the research reviewed, there is little indication or discussion of a common definition/ framework and measurement of the retail performance concept at the firm level.

Hypotheses

Hypotheses are based on the review of literature as well as the current state of MCR in the domestic retail industry. There are two dependent variables of importance in the study: level of innovation and firm performance. Hypotheses are stated in two sections based on their respective dependent variables.

Strategic Orientation, Firm Size and Level of Innovation

The three strategic archetypes are very different in their approach to growth, technology adoption and usage and company organizational structure. Because the prospector firm is considered the most aggressive in its growth and technology behavior, and it is also less centralized than the other archetypes in its organizational structure, it is likely to have high levels of innovativeness with regard to MCR which leads to the first two hypotheses:

H_1: The prospector firm has higher levels of MCR innovation compared to the defender firm.

H_2: The prospector firm has higher levels of MCR innovation compared to the analyzer firm.

Both the analyzer and the defender firms are noted for their pragmatism in growth and technology adoption. Because the analyzer also exhibits characteristics of aggressiveness and flexibility, it is more difficult to predict its innovation behavior with regard to MCR. The trade literature and recent industry events suggest that the MCR phenomenon has begun to loose its momentum. Therefore, it is likely that both the conservative defender archetype and the analyzer archetype are conservative in their MCR innovation behavior leading to the study's third hypothesis:

H_3: There is no significant difference between the level of MCR innovation in analyzer firms versus the level of MCR innovation in defender firms.

32

In order to understand whether retail firms are reactive in their MCR innovation decisions hypotheses associated with the reactor orientation are posited. Because the reactor is highly susceptible to signals in its competitive environment and extreme hype was associated with MCR when it surfaced in the late 1990s, it is proposed that reactors have likely been aggressive in their MCR innovation behavior. Therefore, the behavior of this type is likely to be similar to that of the more consistent prospector which leads to the fourth hypothesis:

H_4: There is no significant difference between the level of MCR innovation in reactor firms versus the level of MCR innovation in prospector firms.

Given the typical erratic behavior associated with the reactor type, it is likely to behave very different in growth, technology and administrative decisions when compared to the more pragmatic analyzer and conservative defender leading to the study's fifth and sixth hypotheses:

H_5: The reactor firm has higher levels of MCR innovation compared to the analyzer firm.

H_6: The reactor firm has higher levels of MCR innovation compared to the defender firm.

An additional hypothesis is posited for a different determinant of innovation behavior: size. Pointed out in the literature review on ODI empirical findings, size is the only stable predictor of innovativeness in organizations to date. In order to control for the effect of this potentially influential determinant the following hypothesis is posited:

H_7: Firm size positively impacts levels of MCR innovation.

Strategic Orientation and Performance

Again, according to the Miles and Snow theory, the three archetypes (i.e., prospector, analyzer and defender) are expected to perform well, while the inconsistent reactor is expected to perform poorly. Performance patterns consistent with the Miles and Snow theory provide evidence that the strategic types are, in fact, what they appear to be. Therefore the following hypotheses are also posed for the current study:

H_8: There are no significant differences in firm level performance between prospectors, analyzers and defenders.

H_9: There is a significant, positive difference in firm level performance between the three archetypes (prospectors, analyzers and defenders) and the reactor firm.

33

Summary

Both the trade literature on the current state of MCR and the academic literature on ODI and strategic orientation were reviewed to inform the current research. Although these theoretical frameworks have not been extensively applied to retail problems, they provide a long tradition of empirical insight that supports the conceptualization set forth in this dissertation. The trade literature established the phenomenon of MCR as an important and erratic innovation facing the retail industry and as such provided justification for this phenomenon as the study's context. Roger's process model provides the conceptual framework for the study, while the Miles and Snow typology (and its supporting theory) provides the conceptual basis for the strategic orientation construct (i.e., prospectors, analyzers, defenders and reactors) which are proposed to affect innovativeness and performance. Within these two bodies of literature a great deal of work has been done that supports the foundation for examining the research questions that the current study seeks to answer: *What is the effect of a retail firm's strategic orientation on its level of innovation with regard to multiple channel retailing?* and, *What is the effect of strategic orientation on firm level performance?*

CHAPTER 3

METHODOLOGY

The purpose of this chapter is to present the research methodology used to collect the data and test the study's hypotheses. The study is quantitative in nature and uses domestic retail firms as its general sampling frame. A mail survey methodology was used to collect data from key informants inside the retail firms. It is important to emphasize that unit of analysis for the study is the *retail organization* rather than the *retail executive* (i.e., key informants). The methodology is presented in the following order: a) overview of procedures; b) selection of sample and key informants, c) measures; d) pretests; e) data collection, f) response rates, and; g) analyses.

Overview of Procedures

Following an exhaustive review of the academic and trade literatures, a cursory survey instrument was developed to collect data. This instrument was pre-tested and refined in three successive stages. In addition, conversations with retail industry executives indicated that the decision to adopt MCR is a critical issue facing retailers, providing support for its use as the innovation context. After validating the study's context and pre-testing the instrument, the sample and key informants were selected. Mail surveys were designed and mailed according to a modified version of Dillman's Total Design Method (TDM). Data were analyzed using multivariate analysis of covariance (MANCOVA), post-hoc comparisons and focused contrasts. The reliability of multiple-item measures were evaluated using Cronbach's alpha. A flowchart of this process is depicted in Figure 3.

Sample Selection

A purposive sample was used to obtain the organizational key informants for the research. In order to gather a sample large enough to support the analysis, potential participants were gathered from two sources. *Chain Store Guide's* (CSG) online databank and *Plunkett's Retail Directory* provided the original pool for the sample. The Chain Store Guide source provided a list of retail firms in the consumer electronics, apparel and footwear sectors. The Plunkett database was used to generate a list of general merchandise chains. The Plunkett list included retail chains from grocery and general merchandising sectors (e.g., department, discounters, grocery and drug stores). Both sources included private and publicly held companies. The Plunkett database included a greater number of large national companies (500+ stores), while the CSG database included a greater volume of smaller regional companies (5+ stores).

Five hundred and four total companies were compiled from the two databases to constitute the sample. Four hundred and twenty nine companies were drawn from the CSG database and the remaining 75 companies were provided by the Plunkett database.
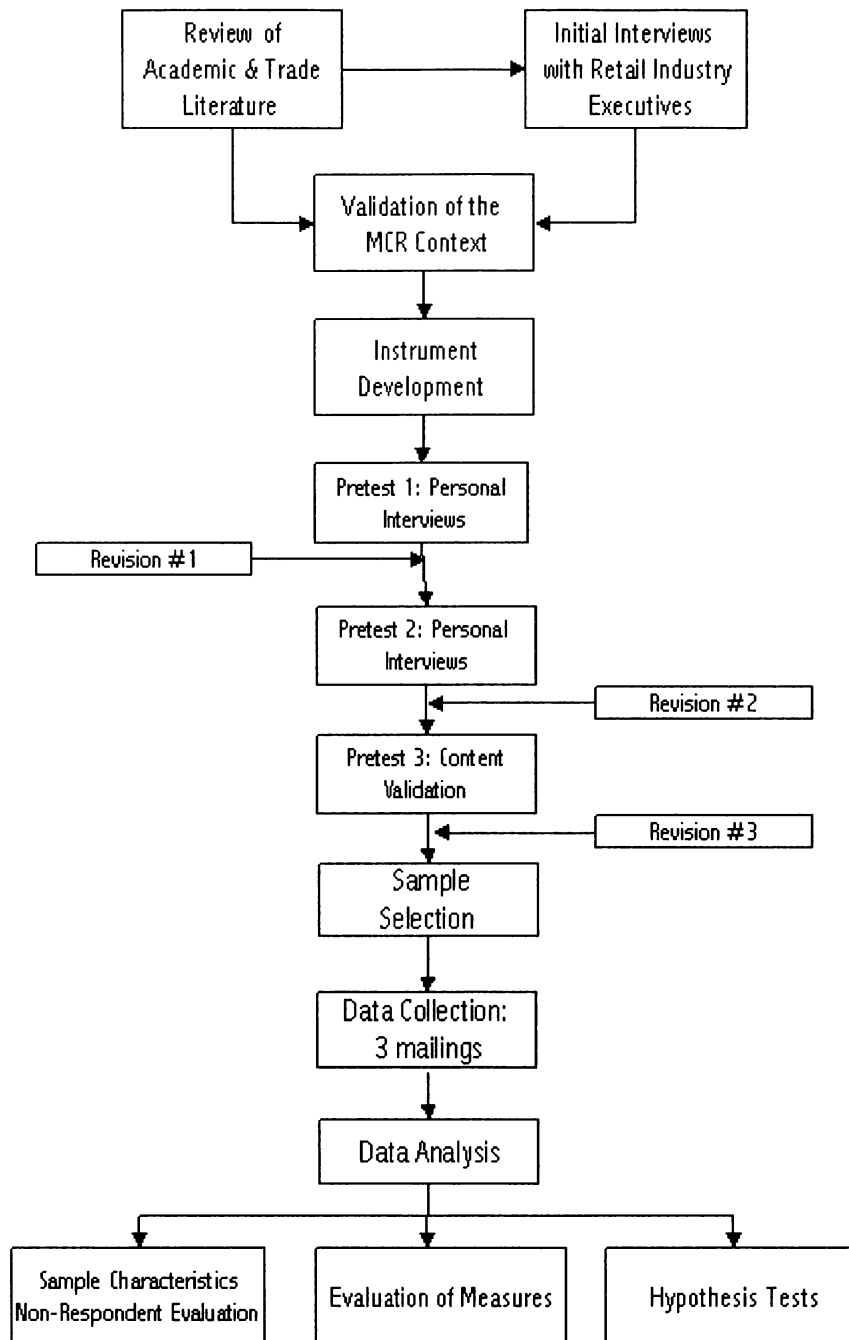
Figure 3. Flowchart of the Methodology

Retail chains were selected based on size (minimum of 5 stores), sector (apparel, footwear, consumer electronics and general merchandisers), and sales from fiscal year ending 2000 (minimum of $2 million). The sample was also designed to include both large and small retailers which reflects the true distribution of the U.S. retail population. The retail industry in the U.S. is populated by few very large retail chains at one end and numerous small organizations at the other end—with very few medium sized operations in the middle (Levy and Weitz, 2001). To maximize the potential sample size all companies that met the selection criteria were included in the original pool.

Key Informant Selection

The majority of empirical research on organizations has employed the single key informant to report on firm level behavior. Because one respondent is depended upon to reflect the strategy of an entire SBU, or an entire company, this is a critical methodological choice for researchers. To effectively choose a single informant within the retail organization, the recommendations of Huber and Power (1985) were followed. In their 1985 essay on the use of key informants in strategic management research, the researchers set forth eight guidelines for improving the accuracy of retrospective reports. Specifically, three of their guidelines are directed at selecting strategic-level managers as key informants, while the remaining five guidelines are directed at eliciting and interpreting accurate retrospective data. Although the current research did not require informants to rely heavily on past events, it did require their demonstration of a broad knowledge of firm strategy and marketing, as well as knowledge of typical practice (i.e., requiring some degree of recall). Therefore, Huber and Power's three guidelines for key informant selection were followed to identify effective subjects for this study. These guidelines are presented in Table 3.

Following Huber and Power's first and third (i.e., 3b) guidelines, marketing executives were chosen as key informants for the study. According to the first guideline, the key informant should be knowledgeable about the issue of interest. The measures employed within the study require the respondent to have an understanding of business strategy, innovation behavior with regard to MCR activity and planning, and an overall perception of business and corporate performance. Although multiple channel retailing is a broad phenomenon, it is most adequately classified as a channel innovation and, as such, falls within the functional domain of marketing. Therefore, guideline one is satisfied.

Due to difficulty in obtaining adequate response rates from retail respondents, it was important to seek key informants who would be highly involved in the research. In addressing the third selection guideline, we believed that marketing executives will be interested in the potential knowledge that the survey will produce. According to Huber and Power's recommendation (3b), it is likely that marketing executives will display lower levels of involvement in reflecting on business strategy and performance which incorporate

Table 3. Guidelines for Improving the Accuracy of Retrospective Reports through the Selection of Key Informants

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Guidelines

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1. If only one informant per organization is to be questioned, attempt to identify the person most knowledgeable about the issue of interest.

2. If more than one informant per unit of analysis is to be interviewed, choose informants whose unique biases or lack of knowledge are likely to offset those of other informants.[a]

3. When choosing key informants, recognize that the person's emotional involvement with a topic or unit of analysis may either increase or decrease the responses.

   Two tactics are offered for following this guideline: (a) choose key informants with moderate levels of emotional involvement, or (b) seek factual data from informants with higher emotional involvement, as their ability to recall is probably greater, and seek judgmental data from those with lower involvement, as their responses are less likely to be distorted by their motives.

Note. Adapted from "Retrospective reports of strategic level managers: Guidelines for increasing their accuracy," by G. P Huber and D. J. Power, 1985, Strategic Management Journal, 6, pp.174-175. Copyright 1985 by John Wiley and Sons, Ltd.

[a] Because the current study does not focus on retrospective data, the use of more than one key informant was not necessary. Therefore guideline two was not applied for key informant selection.

activities/inputs from outside of their function. In turn, the same informants are likely to become more highly involved in the innovation under question.

According to the Huber and Power guidelines as well as the fundamental research subject, marketing executives represent effective key informants for the study. In addition, retail executives meet the criteria as viable key informants. Therefore marketing executives followed by general retail executives (CEO, president, executive vice president) were selected as the research subjects.

Both the CGS and the Plunkett database provided named key informants. In cases that a marketing executive was not identified, surveys were sent to marketing directors or to company presidents, or vice presidents of store operations, merchandising and business development. In cases that there was more than one marketing executive, surveys were sent to the highest ranking marketing executive only (e.g., the executive vice president of marketing). When there was no named key informant identified in the mailing lists, the surveys were sent to the attention of the vice president of marketing.

Measurement

The scales used to represent the constructs in the study were adopted from the literature. However, for each of the measures some degree of adaptation was needed for application to the retail context. Some constructs required very little adaptation while others required extensive adaptation. The following section documents the sources of the measures for the independent and the dependent variables. Changes that were made to the measures to carry out this research are detailed.

Independent Variables

Strategic Orientation

A number of measurements have been developed based upon Miles and Snow's classification scheme including: self-typing approaches (Conant, Mokwa and Varadarahan, 1990; Segev, 1987b; Zahra; 1987), an external inference approach (Meyer, 1982), objective indicators (Hambrick 1981; 1982), and investigator inference (Reukert and Walker, 1987). The self-typing approach developed by Snow and Hrebiniak (1980) was used to measure strategic orientation among the sample (Appendix A-1). This approach requires respondents to select one of four paragraphs which best describes the way their firm pursues its business goals. This scale has been widely used and accepted among strategy and marketing academics (e.g., McDaniel and Kolari, 1987). However, it has been criticized for focusing on too few of the dimensions covered in the Miles and Snow theory. Conant, Mokwa and Varadarahan (1990) point out that there are approximately eleven dimensions associated with each strategic type. They emphasize that the paragraph typing approach taps into only three or four of these eleven dimensions. Despite this criticism, researchers

continue to use the paragraph self-typing approach and uphold its reliability (James and Hatten, 1995).

Though the paragraph approach does not perfectly capture firms who may be hybrid strategic types, it is effective in forcing discrimination between groups that may share characteristics (i.e., the analyzer and the defender). When approaching measurement of the Miles and Snow strategic orientations from a multiple item standpoint, discriminating between the groups can be problematic due to the fact that different strategic types share a number of behaviors/characteristics across the scheme. An attempt to measure the strategic types using an adapted version of Segev's (1987b) multiple item scale was undertaken in the research, but proved to be insufficient due to unclear item loadings (Appendix A-2). This attempt to use a confirmatory approach for measuring Miles and Snow strategic types likely failed due to lack of a true underlying continuous distribution associated with the four strategic types (Appendix A-3).

Size

The scale for size was adopted from several sources in the management literature. The measure consistently used in the academic literature for organization size simply accounts for the number of full time employees in a given firm (Pavitt, Robson and Townsend, 1987). To augment this single item measure for the retail context, common size variables that are indicative of the retail industry were added to the size scale including: number of outlets, number of employees and geographic coverage. Secondary data were accessed from the CGS and Plunkett databases for all items within the size scale. Because this information tends to change frequently in the retail industry, retrieving this data from an dependable secondary source is more accurate than expecting a key informant to recall this level of detail. This manner of questioning has been noted to be too demanding on memory which often results in inaccurate responses (Schumann and Presser, 1996).

Dependent Variables

Level of Innovation

The measure for level of adoption was partially based on the adoption/rejection scale that Gatignon and Robertson (1989) used in their study of laptop computer diffusion for sales in the insurance industry. In the case of Gatignon and Robertson's research, the decision to adopt or reject the innovation was multi-faceted. They recognized that there were degrees of adoption and rejection that are not accounted for in a simple *adopt/reject* dichotomy. Similar logic was adopted in developing a multiple level innovation measure for the MCR case.

After reviewing the trade literature on MCR practice, a list of adoption items was generated that represent high to low levels of innovativeness with regard to the context

(Ernst and Young, 2000). The different items for innovativeness read as follows (a) have a company website (information only), (b) have a company website (information and selling), (c) receive e-mail from customers, (d) monitor e-mail from customers, (e) send e-mail to consumers, (f) customize promotions (based on customer buying patterns), (g) do not currently use the Internet for marketing purposes, (h) do not plan to use the Internet for marketing purposes, (i) plan to begin using the Internet within the next year (to provide information to customers only), (f) Plan to begin using the Internet within the next year to sell to customers.

Performance

Performance was measured using subjective data reported by the key informants following the scale of Conant, Smart and Salano-Mendez (1993). Subjects were asked to indicate their retailer's performance on a scale from one to seven (*very poor-excellent*) across eight different performance dimensions: a) general profitability, b) return on investment, c) return on assets, d) sales per square foot, e) effectiveness of cost control, f) sales per employee, g) total sales growth over past 3 years, and h) overall company performance. Efforts were made to include profitability indicators that reflect both the financial and operational dimensions of performance. This is important due to the intensive operational nature of the retail industry.

In many cases researchers rely on subjective measures of performance, particularly when they are examining privately held firms, strategic business units (SBUs) or individual divisions of corporate conglomerates. The drawback to using subjective performance measures in survey research is the increased threat of common response bias. That is, a single-key informant may not reflect the true nature of the variable that they are reporting due to their idiosyncratic perspective of the phenomenon (e.g., executives giving favorable evaluations of their company's performance because it reflects on their personal effectiveness).

Debate over subjective vs. objective indicators of performance in the strategy literature has produced a number of prescriptions for improved methods of measurement. Venkatraman and Ramanujam (1986) suggest using a convergence approach to performance measurement using both subjective and objective data. They suggest that gathering data from both sources, if objective data are available, will lead to a more valid measure of performance.

To control for common response bias, objective indicators of financial performance are compared to the reported subjective indicators for all public companies in the sample (40%). Although this does not provide evidence that the private company key informants were not biased in their responses to the performance measures, it does provide partial evidence against the presence of this bias among the public portion of the sample. Given

the pressure to perform in large public companies, it is possible that the threat for common response bias is higher among these firms compared to those that are privately held.

Objective data were gathered from the *Disclosure* online database (i.e., annual reports) for the fiscal year ending 2001. An effort was made to match the objective and subjective data on content. Given the nature of the subjective scale, an exact match was not possible. Therefore, an effort was made to include both financial and operational indicators of performance. The objective indicators include: return on equity (ROE), the company's current ratio, return on assets, return on sales and inventory turnover.

Pretests

Pre-testing of the mail survey instrument was undertaken in three successive stages. All three phases included depth interviews designed to probe face and content validity as well as overall level of interest with the research context. Across all three pre-testing phases a total of eight different retailing/service industry executives were administered the survey and interviewed after completion.

Pretest 1

The first pretest was designed to examine the validity of the strategic orientation measures. A vice president of marketing for a major U.S. consumer/business-to-business logistics and transportation firm and a vice president of strategic planning for a Federal Credit Union were interviewed. A multiple-item measure of performance which required respondents to pick options which best described their firm behavior across 11 dimensions (Conant, Mokwa and Varadarajan, 1990) and the traditional paragraph typing approach were administered along with the balance of the survey questions. The subjects indicated that they preferred the paragraph typing approach and made a few suggestions regarding survey layout and question wording.

Pretest 2

The second pretest was designed to test a different multiple item measure of strategic orientation based on an adaptation of 's (1987b) scale as well as the paragraph typing approach. This test was carried out with three executives from a major U.S. retail firm with over 800 stores nationwide. The three executives were administered the survey simultaneously and interviewed in-depth following the administration. Again, the pre-test subjects indicated that the paragraph approach was easier to understand and they preferred it to the more time consuming scale. However, efforts to establish a multiple item measure of strategic orientation were not abandoned at this point. Therefore, subjects were asked to elaborate on items they did not understand/had trouble responding to. Following an in-depth discussion with the subjects, the items were rewritten to reflect their suggestions.

The third stage of pre-testing was performed in two phases. A single retailing executive in strategic planning was administered the survey with both the paragraph approach and the modified Segev (1987b) scale. The subject completed the survey, discussed its content and suggested changes. The changes that were in agreement with the research objectives were made and the questionnaire was administered to the same subject for a final review. Following this phase the instrument was deemed suitable for mailing to the sample.

Because obtaining reasonable response rates from retail companies is an extremely difficult task, the decision was made to save the sampling pool for the main analysis. The pretests employed in this study were focused on designing an understandable, simple survey that would effectively measure strategic orientation and subjective performance, among a sample of notoriously low responding subjects.

Data Collection

A mail survey was used to collect data for the study. This approach was used because it is helpful in reaching a large, dispersed population at a reasonable cost. Survey design and mailing techniques followed Dillman's (1978) Total Design Method (TDM). Consistent with the TDM philosophy, every effort was made in the survey design and mailing process to lend integrity to the study. The survey was designed into a six-page booklet following the TDM format. Subjects were sent a survey booklet accompanied by a human subjects compliance form and a hand-signed letter printed on University letterhead (Appendix B2-B4).

January and February 2002 were selected as the two months for data collection. Because retailers face much of their work prior to the Holiday season, these months are likely to be less hectic for them, thereby increasing the likelihood that they would respond. A first wave of surveys was mailed to respondents the second week of January. After the passage of two weeks postcard reminders were sent to all respondents (Appendix B5). After four weeks had passed (from the original mailing), a replacement questionnaire was sent to non-respondents only. Two tactics were used to encourage subjects to participate in the study. First the letter was designed to appeal to their sense of curiosity about the overall status of the industry, thereby generating interest in the study. They were also offered a copy of the aggregate results and/or an individual analysis of their company based on the survey.

Response Rates

102 total surveys were returned after the three-wave mailing for a response rate of 20.2%. Among organizational research in the retailing industry, response rates of

approximately 15% and greater are common in the extant literature (e.g., Conant and White, 1999). Out of the total 504 surveys mailed, only 10 surveys were returned as 'undeliverable'. Five companies formally declined participation over the phone, e-mail and by letter. The first mailing generated a total of 66 responses. Upon examination of the returned surveys, fewer large public retailers were present in the emerging sample compared to the smaller companies. Therefore prior to the second mailing, the key informants in 20 large companies from the original sample were contacted by e-mail/phone and asked to participate in the study. The second mailing generated an additional 36 responses. A single response returned during the second wave had excessive missing values and could not be used in the analysis.

Analyses

To test the relationship between the strategic orientation and level of innovation, and the relationship between strategic orientation and performance multivariate analysis of covariance (MANCOVA) was used. The model was adjusted with a covariate for firm size, in order to control for its influence on level of innovation. MANCOVA is effective for testing these data because the strategic orientation variable is categorical rather than continuous. Because differences among the groups with regard to innovation and performance was the primary interest of the study MANCOVA, provided a meaningful analysis method. In addition, the ability to adjust the model for the potentially influential size covariate provided an added benefit for using this method.

Investigation of the specific strategic orientations and level of innovativeness were examined using post hoc analyses. Hypothesis tests that investigated the relationship between strategic orientation and performance were carried out using focused contrasts so that multiple groups could be compared simultaneously. Levene's test of equal error variances was performed for the dependent variables. In cases where there was a lack of variance component equality, the stringent Scheffe test statistic was used.

Measures for both size and performance used multiple-item scales. First, these data were examined for uni-dimensionality using principal components analysis (PCA). Following this initial assessment, the scales were evaluated for reliability using Cronbach's alpha (1951).

The subjective and objective performance measures were evaluated using the following analyses. The objective performance measures for the 40 public companies were examined using PCA. The first principal component contained five objective performance indicators. This component was saved as the objective performance factor and compared to the subjective performance factor across the four strategic orientations using correlation.

CHAPTER 4

RESULTS

The results of the analysis are presented in the following sections. Sample characteristics are presented including evaluations of the companies, the key-informants and the non-respondents. Measure reliability is next considered. An analysis of the correspondence between subjective and objective performance indicators is performed. The chapter concludes with results from the overall model and the individual hypothesis tests.

Sample Characteristics

One hundred and one surveys were used for the analyses. Sample characteristics were examined in terms of the aggregate and broken down by sector (i.e., apparel, general merchandise, footwear and consumer electronics). In addition characteristics of the key informants who reported on each firm are presented including current positions within the company, the number of years of overall industry experience and the number of years they have been working for their current company.

Characteristics of the Companies

Four variables were used to examine overall sample characteristics: total sales volume (in millions), number of employees, number of stores, and number of operating regions. Three of the four variables used to evaluate the sample characteristics were measured continuously (sales volume, number of employees and number of stores). The variable for number of regions was measured categorically, using counts from one to six, representing company presence in the following U.S. regions: the Northeast, Middle Atlantic, the Southeast, the Midwest, Southwest and the Northwest.

Descriptive statistics indicate a great deal of variability among the sample characteristics (Table 4). To illustrate this variability, standard deviations as well as the ranges are provided for all four variables in Table 4. For example, the average total sales volume across the 101 firms is $384 million with a very large standard deviation of $1.37 billion. The sales data were examined for outliers and none were found to be present. The data also suggest large differences between the respondents in terms of numbers of employees, number of stores and regions in which they operate. The sample consists of more private (60%) than public firms (40%).

Due to the degree of variability among the responding firms across the different characteristics, the sample was analyzed by sector (Table 5). The apparel sector comprises the largest portion of the sample (39.6%) followed by general merchandisers (24.8%) which includes department stores, mass merchandisers, drug stores and grocery stores.

Table 4. Overall Sample Characteristics

Variable	Mean	Standard Deviation	Range
Sales volume ($millions)	$384	$1,370	($2.3 - $67, 655)
Number of employees	28,469	80,155	(20 - 467,400)
Number of stores	338.5	644.5	(5 - 3,700)
Number of regions	3.12	2.14	(1 - 6)

Table 5. Sample Characteristics by Sector

Variable	Retail Sectors			
	Apparel (N=40) mean	General Merchandise (N=25) mean	Footwear (N=20) mean	Consumer Electronics (N=16) mean
Sales volume (in $millions)	$30	$1,500	$12	$28
# employees	3,767	105,836	1,324	8,638
# stores	187	971	106	85
# regions	3.05	4.88	2.10	1.87
Mean total square footage (total company in thousands)	467	53,000,000	614	1,532
% Public	35%	84%	15%	19%
% Private	65%	16%	85%	81%

Mean total square footage and ownership percentages were also examined. Footwear retailers and consumer electronics retailers comprise the balance of the sample contributing 19.8% and 15.8 %, respectively. As expected, the general merchandise sector includes the highest average sales volume, average number of employees and stores and broadest average market coverage among the sectors. The footwear and consumer electronics sectors appear to represent regionally oriented chains with chain sizes/regional dispersion averages of 106/2.10 and 85/1.87, respectively. Though the apparel sector reflected chains with greater geographical coverage, the sales volume was very close to the consumer electronics sector.

The sample characteristics were also examined in terms of the strategic orientation (i.e., self-reported) of the respondent organizations (Table 6). Most of the characteristics reflected values that seem logical given an understanding of the four strategic types. For example, the defender firm reported the lowest average sales volume ($98M) compared to the prospector ($1,200M). Values consistent with typical profiles of the strategic types were also found for the number of employees, average total square footage, and public vs. private ownership. Both reactor and prospector orientations consist of a greater number of publicly held firms compared to the defender and analyzer orientations. Likewise, the reactor and prospector firms tend to be larger in terms of sales volume, number of employees, number of stores, regional dispersion and square footage. The organizations that were self-typed as defenders and analyzers tended to be smaller and regionally oriented. The high number for square footage associated with the prospector type is inflated by five very large general merchandise chains (market leaders) that own a great deal of selling space and also have a large number of employees.

In summary, the descriptive statistics do not indicate any troublesome anomalies associated with the sample. When observing the sample as a whole, there is a great deal of variability between the respondents. However, examination of these firms by sector and strategic type reveals characteristics that are consistent with knowledge of these two contexts. Because the instrument was coded for each respondent, all unusual numbers were checked and matched to objective data for the responding firm (i.e., Plunkett's/CSG and/or Disclosure).

Characteristics of Key Informants

Key informants were asked to reveal three things about themselves. First they were asked to indicate their current position within the organization. They were also asked to indicate in years how long they had been working for their company and how long they had been working in the retail industry. The frequency of respondents by position is presented in Table 7. The majority of respondents were directors and vice presidents of marketing which accounts for 47.6% of the overall sample. In smaller companies, high ranking executives often assume leadership for the marketing/merchandising functions, which explains their participation in the survey. In summary, the majority of respondents

47

Table 6. Sample Characteristics by Strategic Orientation

Variable	Strategic Orientation			
Means	Reactor (N=11)	Defender (N=44)	Analyzer (N=30)	Prospector (N=16)
Sales volume (in $millions)	$580 (s.d.=$1,100)	$98 (s.d.=$48)	$260 (s.d.=$660)	$1,200 (s.d.=$2,300)
Number of employees	41,387 (s.d.=80,707)	8,786 (s.d.=290,980)	22,636 (s.d.=45,429)	85,700 (s.d.=154,920)
Number of stores	835 (s.d.=1,184)	126 (s.d.=221))	361 (s.d.=507)	584 (s.d.=914)
Number of regions	4.09 (s.d.=2.07)	2.52 (s.d.=1.97)	3.46 (s.d.=2.25)	3.56 (s.d.=2.22)
Total square footage (total company-in millions)	42 (s.d.=130)	3 (s.d.=1.5)	40 (s.d.=210)	79,000 (s.d.=220,000)
% public	73%	25%	40%	63%
% private	27%	75%	60%	37%

Table 7. Frequency of Respondents by Position

Position	%	Cumulative %
Marketing director	32.7	32.7
Purchasing director	1.0	33.7
Merchandise/marketing manager	6.0	39.7
Marketing associate	2.0	41.7
Marketing administrator	1.0	42.7
Vice president of stores, operations and business development	5.9	48.6
Vice President of marketing	14.9	63.5
EVP marketing	2	65.5
Vice president company	3	68.5
Company president	9.9	78.4
CEO	5.9	84.3
Other	15.7	100.0

(77.3%) held positions at or above the director level, indicating that they should have the broad knowledge required to answer the survey questions.

Key informants also indicated a substantial amount of work experience both in their company and in the retail industry. The mean number of years that respondents have worked in the industry and in their companies is presented in Table 8. The means for years of experience provide additional evidence that the key informants were capable of answering the survey questions (i.e., 21.3 years in the industry and 13.4 with their current company).

Evaluation of Non-Respondents

A database was created for the non-respondents in the study. All non-respondents were included in the database with the exception of the 10 organizations that were unreachable by mail and five companies that called and declined participation. The total size of the non-respondent group includes 387 companies. To evaluate the differences between the respondents and the non-respondents t-tests were performed across four variables: sales volume, number of employees, number of stores and number of regions. According to the t-tests there were positive, significant differences between the two groups across all five variables. The t-tests as well as the values presented in Table 9 suggest that the retail chains in the respondent group are generally larger than those in the non-respondent group.

There are logical explanations for the significant differences between the two groups. Prior to the second mailing wave, 20 large companies were contacted and encouraged to participate. Out of the 20 companies contacted, 13 responded. This increased the presence of large firms in the sample. Because there were comparatively fewer general merchandise firms in the overall sample, the significant differences between the respondents and non-respondents are not unusual. Further, there are a great number of small apparel and footwear firms among the non-respondents that also contribute to the inequality between the two groups.

Table 10 presents the percentages of ownership and sector across the two groups. The ownership variable appears to be similarly distributed across the two groups. Again, the general merchandise sector has a higher response rate than the other sectors. Otherwise, the differences in response across the sectors appear to be non-significant.

In summary, the respondent firms are larger, with greater sales volume, number of employees and stores, more geographically dispersed and represent more public companies compared to the non-respondents. These differences are attributable to the extra effort

Table 8. Industry and Company Experience among Key Informants

Experience	Mean (years)	Std. Error	Range (years)
Industry	21.3	1.225	(1-55)
Company (current)	13.4	1.275	(1-55)

Table 9. Significance Tests between Respondents and Non-respondents

Variable	Respondents (N=101)	Non-respondents (N=387)		Significance
	Mean	Mean	t	Significance
Sales volume (millions)	$384	$78	3.395	p < .001
# employees	28,469	5,593	3.552	p < .001
# stores	338.5	194.3	5.279	p = .000
# regions	3.12	2.53	14.369	p = .000

Table 10. Percentage of Ownership/Sector between Respondents and Non-respondents

Ownership/sector	Respondents %	Non-respondents %
% Private	60.0	73.4
% Public	40.0	26.6
% Apparel	39.6	52.0
% General merchandise	24.8	11.5
% Footwear	19.8	25.6
% Consumer electronics	15.8	10.9

used to solicit participation among large public firms following their comparatively low response rates in the first survey wave. The presence of larger, publicly-held firms (N=40) is advantageous in the respect that it allows investigation of objective information which can aid in checking for common response bias.

Evaluation of Measures

The study focuses on four constructs: strategic orientation, organization size, level of innovation and firm performance. Strategic orientation and size represent the independent variables while level of innovation and firm performance represent the dependent variables. Measures used to examine each of these constructs were adapted in varying degrees from pre-existing scales. The following sections evaluate the appropriateness of each measure for the sample data. Reliability of scales is considered for the constructs measured with multiple items (organization size and performance). In addition, the subjective performance measures for the public portion of the sample (N=40) are compared to objective performance indicators (using correlation) to reduce the threat of common response bias.

Independent Variables

Strategic Orientation

The measure for strategic orientation used a nominal scale to type the respondents into the four different cells (i.e., prospector, analyzer, defender and reactor) (Appendix A-1). The frequency distribution of the respondents across the different strategic types is similar to results from previous applications of the Miles and Snow typology in other industries (e.g., Conant, Mokwa and Varadarajan, 1990). There are always fewer reactors and prospectors present in an industry. This is due to the fact that reactors are always on the verge of going out of business and prospectors are on the rise. Neither type can be maintained for a great deal of time, while the analyzer and defender types are more stable over time. Measure reliability is not assessed for strategic orientation due to the nominal nature of its scale.

Organization Size

Organization size was measured using three continuous items: total number of stores per chain, total number of employees per chain and regional coverage of chains (within the U.S.). After the data were collected, a principal components analysis (PCA) was performed on the organization size items. The PCA clearly indicated that the three items represented a single dimension. Each item had consistently high component loadings: number of stores (.947), number of employees (.918) and regional coverage (.908) (Appendix C-2). The analysis of Cronbach's alpha indicated that the measures were reliable with a standardized item score of .9146 (Appendix C-3).

53

Dependent Variables

Level of Innovation

The measure for level of innovation required the respondent to indicate their current and intended usage of the Internet (both positive and negative) for retailing/marketing purposes. This scale was scored using an underlying ordinal scale that was intended to approximate a continuous distribution (Appendix D-1). Because most respondents indicated some level of Internet activity, the original 10 levels of innovation were collapsed into four categories as follows: 1) Do not currently use internet for marketing purposes, do not plan to use internet for marketing purposes, plan to begin using internet in next year for marketing and selling purposes; 2) Have a company website for information only; 3) Have a company website for information and selling, and 3) Customize online promotions.

Firm Performance

Performance was measured using a subjective eight item scale adopted from Conant, Smart and Solano-Mendez (1993). The PCA indicated that the items all loaded on one dimension with component loadings above .7, except for a single item – *sales per employee* (SP6) – which scored below .7 (Appendix D-3). Therefore, the item was dropped and the reliability analysis was performed. The reliability coefficient for the scale was acceptable with a standardized alpha of .9517 (Appendix D-4). A single item was retained in the scale despite a marginally low item to total correlation of .6497. This item was not eliminated because it probed overall cost control which is important in capturing performance in the retail industry.

Subjective vs. Objective Performance

An additional analysis was undertaken to assess the validity of the subjective performance measure. Objective performance data were gathered for the 40 public companies in the sample on eight different variables including: return on assets (ROA), return on equity (ROE), return on sales (ROS), the current ratio, inventory turnover, income to sales, income to current assets and sales to assets. The objective indicators gathered for this comparison were selected to represent both financial and operational measures of performance. Also, ratios were used because they are comparable across heterogeneous subjects.

The objective performance indicators were analyzed using a principal components analysis. A single principal component captured the majority of the variance (71%) with an eigenvalue of 3.537. The current ratio, net sales to assets and ROE were dropped due to component loadings less than .55. The first principal component including net income

54

to sales, ROA, net income to assets, inventory turnover, and ROS comprised the objective performance factor (Appendix D-6).

The subjective and objective performance factors were correlated to investigate whether they were consistent. An overall correlation was performed between the subjective performance factor and the objective performance factor. The test indicated that the two approaches to performance measurement correspond with a coefficient of .36 and an associated p<.022 (Table 11). Further examination of the individual objective indicators and the subjective performance factor suggest that net income to assets (r = .379), return on assets (r = .375), and income to sales (r = .307) are most consistent with the subjective measure (Table 12).

Overall Model Test

Multivariate analysis of covariance (MANCOVA) was used to test the overall effect of strategic orientation on innovation and performance, while adjusting for the size covariate. The F-statistics (i.e., Pillai's Trace and Wilk's Lambda) associated with the overall model were significant for both the main effect and the covariate: strategic orientation (Pillai's F=5.633, p<.000) and firm size (Pillai's F=8.076, p<.001) (Table 13). Both Pillai's Trace and Wilk's Lamba are presented in Table 13. Pillai's test is examined because it is robust to small sample sizes and Wilk's test is provided as a basis for comparison (Hair, Anderson, Tatham and Black, 1998).

The between subjects test also suggested significant relationships between the main effect/covariate and the dependent variables with the exception of the relationship between the size covariate and performance (Table 14). This finding was inconsequential since no relationship was hypothesized between these variables. Overall, significance of the MANCOVA model allowed further investigation of the relationships between the specific levels of strategic orientation and level of innovation and the specific levels of strategic orientation and firm performance.

Table 11. Correlation between Subjective and Objective Performance Factors

Pair	N	Correlation	Significance
Subjective performance and Objective performance	40	.36	.022

Table 12. Correlations between Subjective Performance Factor and Individual Objective
Performance Indicators

Objective Indicator	N	Correlation	Significance
Income to Assets	40	.379	.016
ROA		.375	.017
Income to Sales		.307	.054
ROS		.296	.064
Inventory Turn		.131	.420
Sales to Assets		.048	.766

Table 13. Test of the MANCOVA Model

Effect		Value	F	Hypothesis df	Error df	Significance
Intercept	Pillai's Trace	.887	369.768	2	94	.000
	Wilk's Lambda	.113	369.768	2	94	.000
Size covariate	Pillai's Trace	.147	8.076	2	94	.001
	Wilk's Lambda	.853	8.076	2	94	.001
Strategic orientation	Pillai's Trace	.302	5.633	6	190	.000
	Wilk's Lambda	.715	5.715	6	188	.000

Table 14. Tests of Between Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Significance
Corrected model	level of innovation	32.168	4	8.042	10.561	.000
	performance	18.042	4	4.511	5.281	.001
Intercept	level of innovation	563.501	1	563.501	739.994	.000
	performance	2.173	1	2.173	2.544	.114
Size covariate	level of innovation	12.428	1	12.428	16.320	.000
	performance	4.554 (E-02)	1	4.554 (E-02)	.053	.818
Strategic orientation	level of innovation	10.448	3	3.483	4.574	.005
	performance	17.967	3	5.989	7.012	.000
Error	level of innovation	72.342	95	.761		
	performance	81.140	95	.854		
Total	level of innovation	765.000	100			
	performance	99.191	100			
Corrected total	level of innovation	104.510	99			
	performance	99.183	99			

58

Preparation for Post Hoc Analyses

Prior to performing the post hoc tests and focused contrasts, evaluation of equal error variances and Bonferonni adjustments were performed. Levene's test of equal error variances examines the following null hypothesis, H_0: Error variance of dependent variable(s) is/are equal across the groups. The Levene test produced a significant statistic (F=6.95, p=.000) for the level of innovation measure (Table 15). Levene's test was non-significant for the performance measure. The residuals associated with level of innovation (nominal variable) appear to be balanced across positives and negatives (Appendix D-2). Interestingly, the residuals associated with level of performance do not appear to be as balanced across positive and negative values (Appendix D-5). Tests on the unstandardized residuals for both dependent variables indicate evidence against normality (Table 16).

Due to the questionable equality of group variances and non-normal residuals, the conservative Scheffe statistic was selected to test post hoc analyses associated with level of innovation. F-tests from ANCOVA and a focused contrast test were used to examine the hypotheses associated with firm performance. The F tests for firm performance were evaluated using an adjusted alpha of .025.

Hypothesis Tests

Multiple comparisons were used to test the hypotheses associated with level of innovation (H_1- H_6) (Table 17). The hypothesis associated with the size covariate and level of innovation (H_7) was specifically analyzed using parameter estimates produced during the overall model test (Table 18). ANCOVA and a focused contrast were used to test hypotheses eight and nine, respectively (Tables 19 and 20). Alpha for the hypothesis tests associated with performance was adjusted from .05 to .025.

Table 15. Levene's Test of Equal Error Variances

Dependent Variable	F	df1	df2	Significance
Level of innovation	6.958	3	96	.000[1]
Performance	.813	3	96	.490

[1]Alpha = .05.

Table 16. Normality Tests for Dependent Variable Residuals

Dependent Variable	F	df	Significance
Level of innovation	.097	100	.003[1]
Performance	.113	100	.021[1]

[1]Significant at alpha = .05.

Table 17. Post Hoc Analyses for Hypothesis Tests between Strategic Orientation and Level of Innovation

Test	Hypothesis	(I) Strategic Type		(J) Strategic Type	Mean Difference (I-J)	Standard Error Mean	Significance
Dependent Variable: Level of innovation							
Scheffe´							
	1	Prospector	&	Defender	1.0057	.27333	.005[1]
	2	Prospector	&	Analyzer	.6875	.2984	.139
	3	Analyzer	&	Defender	.3182	.22168	.562
	4	Reactor	&	Prospector	.1761	.36671	.972
	5	Reactor	&	Analyzer	.8636	.33001	.084
	6	Reactor	&	Defender	1.1818	.31561	.004[1]

[1]Significant at alpha = .05.

Table 18. Parameter Estimates for Size Covariate

Dependent Variable	Parameter	Beta	Standard Error	t	Significance
Level of innovation					
	Intercept	3.074	.220	13.976	.000
	Size	.374	.093	4.040	.000
	Reactor Orientation	9.161 (EO-2)	.342	.268	.790
	Defender Orientation	-7.67	.262	-2.934	.004
	Analyzer Orientation	-6.09	.272	-2.237	.028
	Prospector Orientation	0[1]	~	~	~

[1]SPSS sets parameter to zero.

Table 19. Test for Differences in Performance among Three Strategic Archetypes

Hypothesis	Contrast	Sum of Squares	F	df	Significance
8	Prospector vs. Analyzer vs. Defender	1.756	1.083	2	.343

Table 20. Focused Contrast between three Archetypes and Reactor Type on Performance

Hypothesis	Contrast	Contrast Estimate	Sum of Squares	F	df	Significance
9	Three Archetypes (Prospector, Analyzer and Defender) vs. Reactor	4.017	16.767	19.631	1	.000[1]

[1]Significant at alpha = .025.

Hypothesis One

H_1:   The prospector firm has higher levels of MCR innovation compared to the defender firm (*supported*).

Results from the Scheffe test for the difference in level of innovation between the prospector type and the defender type indicate a significant difference between the two groups. The statistic was significant with a positive mean difference of 1.0057 and a p-value of .005. This finding suggests that prospector firms in the sample have higher levels of innovation than defender firms with regard to MCR. H_1 is supported.

Hypothesis Two

H_2:   The prospector firm has higher levels of MCR innovation compared to the analyzer firm (*not supported*).

The second hypothesis examined whether the prospector firm had higher levels of innovation than the analyzer firm. Though the Scheffe test indicated a positive difference in the prospector mean vs. the analyzer mean for level of innovation (.6875), this difference was not significant (p-value=.139). H_2 is not supported.

Hypothesis Three

H_3:   There is no significant difference between the level of MCR innovation in analyzer firms versus the level of MCR innovation in defender firms (*supported*).

The third hypothesis, stated in the null, posited that there is no difference between the analyzer firm's and the defender firm's level of innovation. The Scheffe test indicated no significant differences between the groups with regard to level of innovation with a

small positive mean difference (.3182) and a large p-value (.562). Therefore, the data indicate support for H_3.

Hypothesis Four

H_4: There is no significant difference between level of MCR innovation in reactor firms and the level of MCR innovation in prospector firms (*supported*).

The fourth hypothesis, stated in the null, posited that there is no difference between reactor firms' and prospector firms' level of innovation. The Scheffe test was non-significant with a very small mean difference of .1761 and a very large p-value of .972. The evidence suggests that there is no significant difference between the two groups level of innovation. Therefore H_4 is supported.

Hypothesis Five

H_5: The reactor firm has higher levels of MCR innovation compared to the analyzer firm (*marginally supported*).

The fifth hypothesis examined whether reactor firms had significantly higher levels of innovation compared to analyzer firms. Results from the Scheffe test indicated only marginal significance in the differences between the two groups. The mean difference was .8636 and the p-value was .084. H_5 is marginally supported.

Hypothesis Six

H_6: The reactor firm has higher levels of MCR innovation compared to the defender firm (*supported*).

The sixth hypothesis posited that reactor firms have higher levels of innovation than the defender firms. The Scheffe test indicated support for the hypothesis with a mean difference of 1.1818, and a p-value of .004. The test indicated a significant, positive difference in the level of innovation for reactor firms versus defender firms. This evidence indicates support for H_6.

Hypothesis Seven

H_7: Firm size positively impacts levels of MCR innovation (*supported*).

The seventh hypothesis was tested as a covariate in the main MANCOVA model. The F-test associated with the between-subjects model effects, indicated that the size covariate had a significant effect on level of innovation across the strategic groups (F =

63

16.320, p < .000). The corresponding parameter estimate indicated a positive parameter estimate of .374 and a significant p-value of .000. This finding suggests that size impacts level of innovation and was a meaningful covariate in the overall model. H_7 is supported.

Hypothesis Eight

H_8: There are no significant differences in firm level performance between prospectors, analyzers and defenders (*supported*).

The eighth hypothesis examined the differences in performance among the three strategic types. The hypothesis posited that there would be no differences in firm performance across the three strategic archetypes: the prospector, analyzer and defender. The F-test indicated no significant differences in performance among the three archetypes (F=1.083, P<.343). This result indicates support for H_8.

Hypothesis Nine

H_9: There is a significant, positive difference in firm level performance between the three archetypes (prospectors, analyzers and defenders) and the reactor firm (*supported*).

The final hypothesis tested whether the three strategic archetypes (i.e., prospector, analyzer and defender) were consistently higher performers compared to the reactor type. The focused contrast associated with this hypothesis produced a positive estimate (4.017). The F-test indicated significance (F=19.631, 1) with a corresponding p-value of .000. The data clearly suggest that the three archetypes are better performing firms compared to the reactor type. H_9 is supported.

Summary

One hundred and two retail chains responded to the survey for a total return rate of 20.2%. Following the first mailing a number of large retail chains were contacted and encouraged to participate in the study. This effort increased the number of large, public firms in the sample. The final sample was comprised of more private (60%) than public (40%) firms. However, in comparison to the non-respondents, the sample was comprised of more public than privately held firms. This is a reflection of the bi-polar distribution of retail firms in the U.S (i.e., a lot of small firms vs. a few large firms). The presence of these larger firms among the sample also indicated differences between the respondents and non-respondents.

The evaluation of measures for multiple-item constructs indicated consistency among the measures. MANCOVA was used to investigate strategic group differences while adjusting for a size covariate. Significance for the full model allowed further investigation

into the study's hypotheses. Post hoc analyses indicated clear support for seven of the study's nine hypotheses (H_1, H_3, H_4, and H_6-H_9), and marginal support for a single hypothesis (H_5). The significance of the size covariate illuminates the strength of the findings associated with strategic orientation and level of innovation.

CHAPTER 5

CONCLUSIONS AND FUTURE RESEARCH

The following chapter summarizes the study in terms of its outcomes. The conclusions section begins with an overview of the findings and discussion of major and minor results. Next, the study's limitations and implications are presented. The dissertation concludes with suggestions for future research.

Conclusions

To illustrate the conclusions of this research, an overview of the findings is first offered in the sequence that the research was performed. A discussion of the major and minor findings is also presented to emphasize the study's important points. Limitations from the study's design and implementation are next stated and implications for practice and academia are offered.

Overview of Findings

The purpose of this research was to investigate whether strategic orientation had an effect on innovation behavior in the retail industry. The particular innovation of interest was the phenomenon of multiple channel retailing (MCR). Because of MCR's explosion in the retail industry over the past five years, this innovation provided an opportune context for the study of innovation. That is, popular innovations that have great promise tend to cause bandwagon effects in competitive environments such as the retail industry. Companies often adopt bandwagon innovations regardless of fit with their current organizational strategy (Abrahamson, 1991).

Domestic retail chains were selected as the general sampling frame. Due to the limited number of large retail firms in the U.S., the industry was sampled across sectors including apparel, general merchandise, footwear and consumer electronics retailers. Every effort was made to achieve a substantial response rate from retail marketing executives. The return rate of 20.2% drew responses from all four sectors and was acceptable for performing the statistical analysis. Additionally, key-informants indicated adequate experience to answer the survey questions.

Evaluation of the sample characteristics against the non-respondents revealed that there was a heavy presence of publicly-held, large retail firms in the sample. The presence of these larger firms caused statistically significant differences between the respondents and the non-respondents. This difference is directly linked to the participation of five very large retail chains, predominantly from the general merchandise sector. Given the concentration of the retail industry within this sector, this difference is entirely logical.

Because there are so few firms that are that large, there were not enough firms of that size left among the non-respondents to offset the differences.

Because of the popularity of MCR, there was a possibility that prior to/during data collection the innovation may have diffused a point that differences would no longer be detectable between the firms. That is, all respondents would have actually adopted or claimed to have adopted MCR. Indeed, the majority of respondents indicated they had some form of web presence ranging from simple use of e-mail to communicate to customers to having an informational website and/or planning to establish an informational website during the next year. However, far fewer retailers indicated the interactive use of the Internet in promoting to consumers on an individual basis. This finding suggests that MCR, as defined in the study, has diffused as an informational tool across much of the domestic retail industry. However, it does not suggest that retailers are aggressively integrating MCR into their current retailing strategy. Therefore, differences in the level of innovation were present among the sample. But the responses indicated that the true continuum for levels of innovation more likely begins with having an informational presence on the web rather than having no presence on the web. Only four respondents indicated absolutely no plans to adopt the Internet for marketing purposes.

In order to study the effect of strategic orientation on innovation behavior, theoretical directions were taken from the Miles and Snow typology and the organizational diffusion of innovations framework. The second question of the study was posed for empirical reasons: *What is the effect of strategic orientation on performance?* Because the Miles and Snow theory had not been applied to the retail industry, it was important to investigate the relationship between the strategic archetypes/reactor type and performance in this context, prior to attributing causation to the strategic orientation construct (i.e., as an independent variable).

In an effort to control for common response bias in performance measurement, objective data was gathered for the public company respondents (N=40). The forty companies were compared across their objective and subjective performance indicators and no significant difference was detected. Because the public companies have a greater incentive to conceal true performance (i.e., stockholders), the likelihood of response bias among this portion of the sample is higher. Therefore, the outcomes of this comparison indicate a reduced threat of response bias within this inquiry.

Fortunately, the results of the hypotheses (i.e., H_8 and H_9) that tested the difference in performance among the strategic orientations confirmed that the typology worked very well in the retail context. The three strategic archetypes (i.e., prospectors, analyzers and defenders) performed similarly when compared to one another. When compared as a group against the reactor type, the archetypes indicated superior performance. This finding is in agreement with the theory and past research on strategic types in different industries, which holds performance as the criterion measure for the strategic types (e.g.,

Narver and Slater, 1993). This finding facilitated the investigation of the effect of strategic orientation on level of innovation. It also confirmed and extended the Miles and Snow typology for the retail industry.

It is also important to emphasize that the distribution of sample characteristics across the strategic types also provided support for applicability of the Miles and Snow typology to the retail industry (Table 6). For example, defender firms are definitively the least aggressive among the four types. They tend to protect current markets, rarely adopt technology and maintain a strict and inflexible organizational structure. The analyzer is supposedly a hybrid between the defender and the prospector. When examining the sample characteristics by sales volume, number of employees, number of stores and number of regions the strategic types are perfectly arranged along a scale from small (defender), to medium (analyzer), to large (prospector). The reactor tends to fall between the analyzer and the prospector but in some cases reports higher numbers (i.e., regional coverage) than the prospector. The reactor's inconsistency is also in agreement with the Miles and Snow theory.

Prior to examining the effect of strategic orientation on level of innovation, it was important to investigate the effect of size on level of innovation in the retail industry. Within the diffusion of innovations literature, the size variable has been found repeatedly to affect innovation in organizations. Because of the strength of this variable in past investigations of innovation and its potential for affecting the results in this context, it was included in the study as a covariate. The model estimation reflected a strong positive relationship between size and level of innovation among firms in the sample. Firms with a greater number of stores and employees and broader geographic dispersion, reported higher levels of innovation (i.e., selling over the Internet and using the internet to customize relationships with consumers). Interestingly, smaller firms are not as aggressive as larger firms when using the Internet to sell and customize promotions to consumers. This is contrary to the belief that small businesses would be the forerunners of Internet success in e-retailing. Instead, this finding agrees with those who suggest that well known, large firms will be the first to benefit from the Internet channel.

Given that the Miles and Snow typology was effective in explaining differences in performance in the retail industry, it was used as the independent variable to investigate the effect of strategic orientation on level of innovation. The overall model indicated strong evidence of a relationship between the strategic orientation construct and the level of MCR innovation. The hypothesized relationships between the levels of strategic orientation and innovation were based on Miles and Snow's theory and current knowledge MCR diffusion within the industry. In addition, the hypotheses were also written assuming that MCR generated a bandwagon effect within the industry. Therefore, the conservative archetypes were posited to have lower levels of MCR adoption compared to both the prospector and the reactor. The logic behind these hypotheses was based on the

idea that the reactor firm would be more susceptible to signaling in the competitive environment which typically accompanies bandwagon innovations.

Seven out of five hypotheses that investigated the specific strategic types and level of innovation were supported. Specifically, the prospector and defender were found to be different in their levels of innovation which agrees with the theory in that the defender is the most conservative innovator among the typology. The difference in the level of innovation between the prospector and the analyzer was not significant. However, had the alpha adjustments not been made, this hypothesis would have been marginally significant with an observed p-value of .139. This is an important basis for comparison when interpreting the test between the analyzer and the defender which indicated a stronger finding of no difference between the two groups for level of innovation (i.e., p-value of .562). Examining these three findings together, it can be concluded that the analyzer type is closer to the defender type in its innovation behavior.

Constructing the hypotheses that dealt with the differences in innovation between the analyzer firm and the other strategic types was difficult. Knowledge of the true state of MCR diffusion could have aided in posing these hypotheses in a more grounded manner rather than strictly adhering to the theory. Due to a lack of timely knowledge of MCR diffusion, the Miles and Snow theory was relied upon for designing the hypotheses. The hypotheses assumed that firms within this orientation were very conservative with regard to MCR. Indeed there were no significant differences between the analyzer and defender firm as hypothesized. However, there were also no significant differences between the analyzer firm's level of innovation and that of the prospector or the reactor. In both of these cases the findings were marginally significant, particularly in that of the reactor (p=.084). The findings were not contrary to the theory. However, they were not strong enough to be considered significant.

The hypotheses that investigated the level of adoption between the reactor type and the three archetypes turned out as expected with the exception of the relationship between the reactor and the analyzer. The results indicated strong evidence that there was no difference between the reactor firm and the prospector firm in level of innovation. This finding was particularly important to this research because it suggests that some degree of the bandwagon effect was likely at work in the industry's competitive environment. Specifically, the poorer performing reactor firm proved to be as innovative with MCR as the stronger performing prospector firm, despite the efforts needed to support an operation of this magnitude. Further, as expected there was a significant, positive difference in the level of innovation among the reactor type versus the defender type.

The majority of findings tested in the nomological network turned out as expected. The relationship between the different strategic types and performance were in agreement with the theory. The size covariate was also influential as suggested in the extant literature. The comparison between objective and subjective performance showed no significant

69

differences in the measures, lending credibility to the results. Further, the majority of the hypotheses associated with level of innovation turned out as expected with the exception of the relationships between the analyzer archetype and the prospector and reactor types.

Major and Minor Findings

Illustrated in the previous section a number of findings emerged from this research. In order to clarify which of these findings are most important to the current research objective the results are broken into two categories: major and minor. The major results are findings that are provide new knowledge to their respective theoretical and practical areas. The minor results offer confirmation of previous hypotheses and directions for measurement improvements.

Major Findings

There are three major findings in this research. First, the Miles and Snow typology does a good job explaining variances in performance in the retail industry, which also suggests that it can explain behaviors in related areas within this context (i.e., organizational structure, organizational change, etc.). Past researchers have tended to rely on inductive strategic typing in this industry, due to the difficulty in isolating a specific product or service orientation (e.g., Conant and White, 1999). They often examine activities specific to retailing including examples such as promotional policy, store policy, and merchandising policy which are statistically clustered to identify strategic groups (i.e., *generic* strategic types). Miles and Snow offers a true strategic level theoretical framework compared to some of the inductive approaches that have been used. Not only are the inductive approaches formed post hoc, they also tend to use piecemeal store operations and marketing dimensions to constitute strategic types, compared to the more comprehensive Miles and Snow approach. That is, the Miles and Snow approach deals with the adaptation of the entire organization across business, technological and administrative fronts.

This finding is important because it suggests that the retail industry shares characteristics with other industries on the strategic level, within the Miles and Snow framework. Previous research in the service industry has found that the theory explains performance differences (Conant, Mokwa and Varadarajan, 1991). This finding is also important because it extends the Miles and Snow theory to the retail industry and further demonstrates its power of application across unique contexts.

The second major finding suggested in the study is that strategic orientation affects innovation in the retail industry (i.e., in the case of MCR). Answering this question was the primary focus of this research. Use of the ODI paradigm in guiding organizational innovation study seemed to wane during the 1990s. It was criticized for being too focused on the positive determinants of innovativeness, rather than on the potential negative

outcomes of innovation and on the process itself. Academics have called for a renewal of the use of the ODI framework, in response to the rapid rate of technology adoption among business entities around the world (Frambach and Schillewaert, 2002). Through the ODI framework, the current study was able to detect differences in innovation behavior between strategic orientation and innovation.

In the past, researchers have either focused solely on discrete variables such as characteristics within the organization (i.e., characteristics of the adopting individual/unit), the innovation itself (i.e., trialability, complexity, etc.) or characteristics of the industry environment (i.e., industry concentration). However, no study in the past has incorporated elements of both the internal (organizational) and external (industry) environments. By examining strategic orientation as an influential variable on level of innovation, this research is able to understand adoption/rejection/postponement behavior through a retail chain's adaptive pattern to its competitive environment. As an independent variable within an innovation study, strategic orientation provides a dynamic, measurable and meaningful determinant of innovation behavior. The strategic orientation construct was significant as a determinant of MCR innovation and adds to knowledge within the ODI framework.

The third major finding associated with this research involves the innovation behavior of the reactor firm type among the Miles and Snow typology. In the manner that the hypotheses were tested, the reactor type proved to be the most innovative among the strategic types. The reactor also proved to be the poorest performing type among the groups. Indeed, out of the publicly-held reactors among the sample, four indicated that they were either currently going through reorganization or being acquired by other retailers. According to the theory, reactor firms behave erratically in their responsiveness to competitive environment stimuli. Therefore, this finding suggests that the reactor firm was the most susceptible among the types to the hype that followed MCR's introduction in the late 1990s. This finding is important because it signals the importance with which innovations must be considered within the competitive retail industry. That is, that bandwagon effects are likely present in the retail environment which in turn can pressure firms to innovate.

These three findings directly answer the research questions posed in the study: *What is the effect of a firm's strategic orientation on level of innovation?* and *What is the effect of strategic orientation on firm level performance?* Though the findings are somewhat more complex than the questions they intended to answer, they offer important directions for strategy and innovation researchers in the retail industry.

Minor Findings

During the course of this research, a number of secondary questions were both introduced and resolved. The findings associated with these questions are presented as

71

minor findings of the study. There are three minor findings that are important to mention including the replication of a theory test (i.e., hypothesis) and two separate measurement issues.

The first minor finding is that size was a powerful explanatory variable for innovation in the MANCOVA model. Size has been found in the past to be one of the only stable predictors of innovativeness in organizations (i.e., larger firms are usually more innovative). This study clearly corroborates this finding. It is also worthy to note that size did not influence performance within the study.

A second minor finding from the study involves the measurement of strategic orientation. An attempt was made to measure the Miles and Snow typology using a scale that was developed for a simulated retail industry. Though the scale was repeatedly pilot tested with industry executives, it did a poor job discriminating between the groups upon the study's completion. Therefore, the paragraph typing approach was used. Researchers have debated the advantages/disadvantages of using a multiple item versus a paragraph typing scale. In the case of the retail subjects, who have to think of products, services and retail formats when answering the strategic orientation questions, the paragraph typing approach proved to be more effective. This finding agrees with previous research that argues the effectiveness of the paragraph typing approach (James and Hatten, 1995).

A third minor finding from this research involves subjective versus objective measurement of firm level performance. The measurement of firm performance is not a well-defined area among strategy researchers. However, most agree that when available and applicable, objective indicators provide a credible source for performance information. The majority of research on retail organizations tends to measure performance subjectively (Table 2). This is because these studies tend to focus on privately-held firms and/or retail divisions that do not have clear cut objective information. Because the current research incorporated both large and small in addition to public and private companies, it was necessary to use both approaches. More specifically, subjective performance measures were used in the analysis, but they were first compared to objective indicators. The comparison found no differences between the two measurements of performance, which suggests that key informants in large organizations were accurate in their responses to performance questions. Therefore, within the context of this research there was agreement between performance information from objective and subjective sources.

Along with both the major and minor findings there are important limitations and implications. In addition, particularly with regard to the secondary findings, these conclusions are highly contextual and must be interpreted as such. The following sections address these concerns.

Limitations

Conceptual, measurement and sampling limitations are identified in the following sections. Many of the limitations associated with the study were foreseen and accepted and/or taken into consideration in the study's design. Other limitations emerged during the course of the study and are important to examine, particularly for future research.

Conceptual Limitations

There are two conceptual limitations associated with the major components of the study: the Miles and Snow framework and the ODI theory. Strategic orientation as the focal independent variable of the study is represented by the Miles and Snow conception. The Miles and Snow conception is among a number of existing strategic typologies that have shown promise in explaining structure and performance differences in a host of industries. This conception was selected for its comprehensive treatment and classification of firm level strategy. The majority of extant research on retail strategic types investigates elements of marketing/store operations strategy. When comparing the current findings to past research, the level of strategy must be taken into consideration. The current findings are based on very broad, corporate level strategy rather than functionally specific operational level strategy. Though broad strategy should be pervasive in most firms, the findings presented in this research do not delve into functionally oriented strategies. In summary, the Miles and Snow conception represents a comprehensive but singular view of strategic orientation. Therefore, the basis for strategic orientation was based entirely on their conception and does not necessarily extend past this framework.

A second conceptual limitation is associated with the examination of strategic orientation as an antecedent to innovation within the ODI framework. In this conceptualization, strategic orientation was proposed to affect innovation both positively and negatively. Criticism has been lodged towards researchers who repeatedly examine the correlates of innovativeness rather than focusing on the full innovation process. This criticism claims that examination of ODI correlates does not offer substantial insight into the true reasons that certain innovations succeed or fail. Indeed, in the current study there are likely many forces at play, both related and unrelated to company strategy that influence the successful/unsuccessful diffusion of innovations among retail firms. Therefore, like the past research that examines innovation from a survey approach (i.e., Robertson and Gatignon, 1989) the potential for unaccounted for variables is present in this study. Further, factors associated with the extended innovation (i.e., implementation and consequences) were not examined as a part of this research. Instead the study focused on adoption, rejection and postponement behaviors which were easily captured using a survey approach.

Measurement Limitations

Related to the conceptual limitations, there are three major limitations associated with the measurement of strategic orientation and performance. Two of these limitations are related to strategic orientation measurement. The first involves the inherent limitations in using a self-typing approach and the second involves the difficulty in using a multiple item instrument for this construct. Because these limitations are closely related they are presented together.

An initial attempt was made in the study to measure strategic orientation using a multiple item scale. This approach allowed investigation into more than eight of the eleven dimensions of the adaptive cycle depicted by Miles and Snow (Conant, Mokwa and Varadarajan, 1991). Because the strategic types share characteristics it was difficult to discriminate between these groups across numerous one dimensional items (e.g., both the defender and the analyzer tend to be 'research oriented'). Cross-loadings between the items and the strategic types prevented the use of this scale in subsequent analyses. Had the multiple-item measure worked adequately, it would have captured greater variability between the firms and facilitated a confirmatory measurement approach.

In the interest of discrimination between the strategic types the simpler, less complex paragraph typing approach was used. Therefore, the strategic types are determined using comparatively fewer dimensions of each adaptive pattern. In a theoretical sense it is important to point out that the strategic orientation construct has been simplified for this research. In reality, a company's strategic orientation is multi-dimensional and dynamic. The paragraph typing approach, though effective, it limited in it approach to comprehensively type unique strategic types (i.e., it does not allow for hybrids).

The third measurement limitation is associated with the performance variable. Ideally, performance would be measured with both objective and subjective indicators and these indicators would agree perfectly. However, the current sample prevented the use of objective indicators for 60% of the respondent pool. 61 out of 101 companies were privately held. In addition, out of the 40 publicly held companies, very few reported objective indicators that applied solely to the chain reflected in the returned survey (i.e., corporate divisions/affiliations). In these cases, earnings were estimated based on number of employees, number of stores and selling square footage. Though efforts were made to adequately capture the performance construct, the accessibility of applicable objective data was limited. Further, despite the finding of no differences between performance among subjective and objective sources, the threat of common response bias remains for the privately held organizations in the sample.

74

Sample Limitations

Due to low participation after the first mailing wave, public firms were contacted and encouraged to participate in the second wave. Though effective, this action may have biased the sample toward larger, public companies. When comparing the respondents and the non-respondents, the latter indicated smaller retail chains. In reality, the U.S. retail market is populated with few, very large companies on a national level and numerous smaller companies on regional/local levels. So in an average local market, it is unlikely that the percentage of public retailing is as high as 40%. Therefore, the correspondence of our sample to the true population is not one to one.

Most of the public firms in the sample are very large. The presence of these large firms may have inflated the effect of the size covariate on level of innovation in the model. Further, their presence may have increased the likelihood of observing prospector and reactor types in the competitive environment, since these firms tended to type themselves into these two orientations more frequently than private companies within the sample (Table 6). Therefore, without the responses from these companies, the typology would not have worked as well. In the case of studies that examine less heterogeneous retail groups (i.e., within sector) Miles and Snow may not be effective for explaining strategic group differences.

Implications

The implications of this research are applicable to both academia and practice. Because the study was theoretical in nature the implications for researchers are more extensive than the implications for practice. However, within the theoretical findings, consequences for practice can be interpreted.

Academic Implications

For the first time an a priori strategic orientation framework has been applied to the retail industry. Though this study focused on examining the relationship of strategic orientation and innovation behavior, the fit of the Miles and Snow framework suggests that the retail industry may share characteristics with other industries regarding competitive behavior. This framework was merely used to represent strategic orientation within the ODI framework and proved to be very effective in explaining retail industry competitive organization (i.e., via strategic orientation). The body of literature surrounding this framework as well as other strategic typologies (e.g., Porter, 1978) can be helpful in guiding study into retail strategy using concepts that have been applied in other industries.

The finding that strategic orientation affects level of innovation adds new life to organizational diffusion research. The ODI theory offers thirty years of insight into innovation diffusion and can be useful for examining innovation in business, particularly

in the case of new technology. Strategic orientation as an antecedent to level of innovation represents a new construct within this framework. This research illustrates that survey research guided by the classical ODI paradigm, can be meaningful and applicable to contemporary contexts. Because industry wide competitive behavior is difficult to research from both an accessibility and design standpoint, guidance from theories such as ODI can be very helpful and should not be discounted as passé (Rogers, 1995).

Several implications for measurement emerged during the course of the study. When measuring strategic orientation, retail subjects tended to be more receptive to the paragraph typing approach. Though this scale is not as comprehensive in its depiction of the strategic types, it is well accepted among respondents. For researchers who need to delve more deeply into the different strategic types (i.e., identify hybrids) development of a multiple item measure would be preferable. In addition, the comparison of the objective and subjective performance measures proved to be similar among the public companies in the sample. In no cases should researchers trust this to hold for their samples without first testing for differences.

Practical Implications

Again, fit of the Miles and Snow typology to the retail industry offers implications to retailers. Inherent in the theory is the idea that each strategic type is consistent in its adaptive pattern. Miles and Snow also offer prescriptions for changing adaptive patterns in a systematic manner. Therefore, retail chains who seek to change their strategic orientation can benefit from using the Miles and Snow template in planning for organizational change. Further, organizations can examine their behavior across the adaptive cycle (i.e., the business problem, the engineering problem and the administrative problem) and evaluate their strategies internally.

The results also indicated that firm's strategies affected their innovation behavior with regard to MCR. Retailers who are struggling with their e-retailing divisions should examine their overall corporate strategy and understand how this business proposition corresponds to the other components of the adaptive cycle including administration and technology. Can they adequately support an additional operation from an engineering and administrative standpoint?

In addition, firms that fit the reactor type tended to be the most aggressive in adopting this innovation. Though MCR has been widely promoted as the new frontier of retailing, the consequences of adopting a multiple channel strategy have begun to sink in for major U.S. retailers (i.e., Wal-Mart and Kmart). Retailers must recognize that hype surrounds all types of innovations. MCR should not be considered as either *good* or *bad*, only as appropriate for retailers whose strategies can accommodate and benefit from this new way of doing business. In addition, retailers should be aware that a number of firms are only adopting MCR in reaction to the environment. Considering the scope of MCR as

an innovation, its potential for the bandwagon effect is not surprising. Retailers should also be cognizant of other types of less popular innovations that may or may not be appropriate for their business.

Directions for Future Research

This research provides a first step towards systematic examination of technology adoption in the retail industry. A central idea posed in the study is that competition affects the adoption of certain technologies in dynamic environments. This idea was tested using the strategic orientation concept. Given the numerous emerging technology contexts in retailing (i.e., business to business and business to consumer) there will be plenty of content for diffusion research in the future. The theoretical frameworks used to organize and guide the study were very effective in aiding examination of this phenomenon. Surprisingly, the effectiveness of the Miles and Snow typology in explaining retail competitive behavior also offers promise for future research in the retail strategy area.

The current research only examined the context of MCR. There are numerous other technologies that are being adopted for administrative and engineering purposes within the retail industry. Are these technologies as popular among reactor firms as the highly publicized MCR phenomenon? How well does the strategic orientation-level of innovation relationship hold for less hyped technologies such as warehouse and merchandise planning systems? Is there a difference? If there are differences in the innovation behavior surrounding technologies that involve less hype, this provides additional evidence that bandwagon affects are present in the retail industry. Also, how do these concepts relate to administrative technologies?

Using Miles and Snow to examine additional aspects of retail strategy can also provide a meaningful stream of research to the retail field. Competitor behavior has not been a popular stream of research within the retail context. Perhaps researchers found it difficult to isolate a competitive unit of measure within the industry. That is, some retailers compete on service, some on product, some on format, or some compete on a mix of these three elements. It is often difficult to identify direct competitors in this industry, which is very different from more homogenous industries such as automobiles or chemicals. Additional application of the Miles and Snow typology, as well as exploration of other strategic typologies at other levels (i.e., Porter's typology) can increase understanding of the retail competitive environment.

In cases that the Miles and Snow typology is used, the development of effective multiple item measures would greatly contribute to its usefulness. Though this task would be very difficult due to the inherent overlap between the strategic types, it could be achievable through the use of semantic differential scales. By anchoring the scales with bi-polar characteristics (i.e., risk taker vs. non-risk taker), there may be less common

77

agreement than agree/disagree scales seem to elicit. This approach could produce a scale that discriminates between the strategic types.

In addition, other levels of strategy could be used to examine innovation as well as performance and other firm behaviors of interest. In keeping with the extant literature, inductive approaches could be used to explore strategic groups using marketing and/or operational variables. Perhaps there is a linkage between functional level strategies and innovation in retail firms. For example, what is the effect of marketing strategy on the level of MCR innovation? Also how does the strategic orientation of a given firm relate to its marketing strategy within the retail context?

This research is only one of a few examples that have examined industry level competitive effects on innovation. It is the only study that has employed strategic orientation within the ODI framework. Therefore, this research uses a firm level behavior (i.e., self-typed strategic orientation) to infer firm interaction with the competitive environment. This study demonstrates that retailers respond to their competitive environments when making innovation decisions. Therefore, examination of additional competitive effects can strengthen our understanding of industry-wide ODI. Looking at variables that are exogenous to the organization including: industry signaling behavior, imitation behavior, etc. can also contribute to our understanding of the effect of competition on innovation behavior.

In conclusion, this research demonstrates success of the application of organizational theory to the study of innovation in the retail industry. It presents opportunities for future research both within the innovation context and beyond this context to the overall retail strategic environment. It is hoped that continued application of these theories and concepts to retail phenomena as well as new conceptual development will result in methodological improvements and knowledge production within the field.

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APPENDICES

APPENDIX A

Strategic Orientation Measures and CFA Model

Appendix A-1

Strategic Orientation Measure

Please check the one paragraph that most closely describes your company:

TYPE A _____

This retailer focuses on maintaining its current customer base. It protects its markets by offering a high level of service and/or low prices. It is not at the forefront of industry developments—it tends to ignore industry changes that have no impact on current areas of operation. It is devoted to serving current markets. (_defender_)

TYPE B _____

This retailer aggressively moves into new markets. It values being first-in new markets, new technology adoption, and new ways to retail. It is an industry trendsetter that is not always the leader in its markets. It is known for its innovativeness. (_prospecter_)

TYPE C _____

This retailer tends to enter new markets and adopt technology when pressured by competitors. This company is very reactive to outside competitive pressure. (_reactor_)

TYPE D _____

This retailer maintains current markets, and only moves into new markets and/or adopts new technology after careful analysis. This company is successful in being 'second-in' imitating best industry practices. It is very research oriented. (_analyzer_)

92

Appendix A-2

Adapted Segev (1987) measure for Strategic Orientation[1]

Scaled from *does not describe my chain at all* to *describes my chain very well* (1-7)
defender (a-i), prospector (j-q), analyzer (r-w) & reactor (x-ab)


My retail chain:

a) maintains a safe niche using a traditional store format

b) sticks with using current retailing format (store type).

c) tends to offer a high level of service to customers.

d) tends to offer lower prices (than direct competitors).

e) concentrates on improving current ways of retailing rather than developing new methods.

f) concentrates more efforts on serving current customers rather than focusing on new customers.

g) researches only trends/developments that impact our business directly.

h) grows through penetrating current markets with a current/similar store format.

i) adopts technology mainly to plan & allocate inventory.

j) is an innovation leader in the industry.

k) operates different types of stores for different markets.

l) frequently moves into new markets.

m) is known for being 'first-in' the industry for developing new ways to retail.

n) does not mind risking profits for developing new ways to serve customers (new store formats & services).

o) focuses on capturing new markets, sometimes at the expense of serving existing markets.

p) is a leader in developing new ways to retail.

q) continuously adopts new technology.

r) adopts industry innovations after lengthy consideration.

s) maintains current retail strategy, while testing new ways to retail (new store types).

t) focuses 1st on serving existing customers and 2nd on capturing new customers.

u) is successful in imitating other retailer's BEST practices.

v) carefully researches the retailing practices of competitors.

w) grows by cautiously entering new markets with existing or modified store types.

x) usually adopts technology after problems arise.

y) always takes advantage of industry trends.

z) frequently takes risks.

aa) frequently changes retail practice to imitate competitors.

ab) researches customers/competitors on an 'as needed' basis only

[1]Measure was not used to represent strategic orientation in the analysis due to excessive cross-loadings among the items.

Appendix A-3

Confirmatory Factor Model using the adapted Segev measure[1]
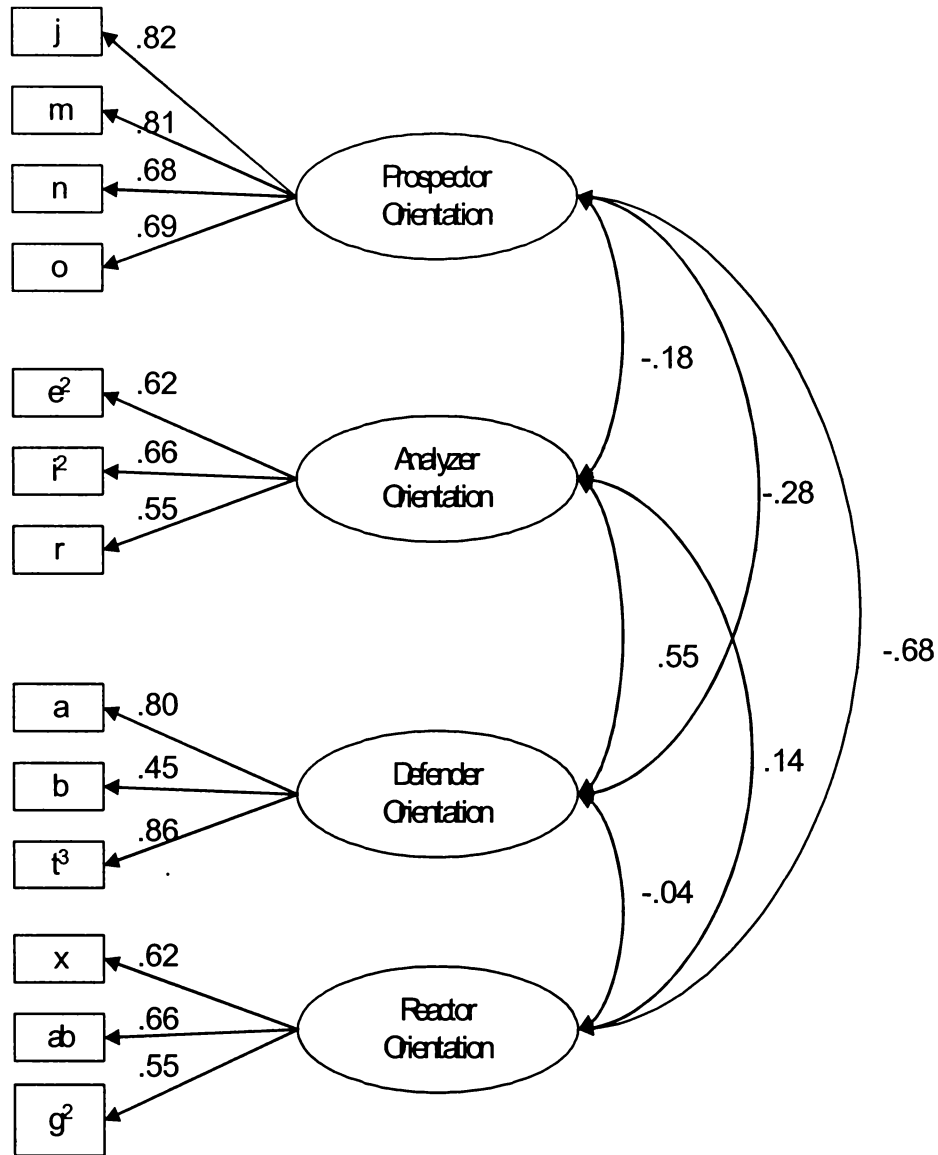
Fit indices: χ^2 = 78.788, 66 df, p<.134, GFI = .903, CFI = .966, RMSEA = .04.

[1] Items correspond to scale presented in Appendix A-2. Measure was not used because of cross-loaded items denoted in the figure above.

[2] Original defender item.

[3] Original analyzer item.

94

APPENDIX B

Survey Instrument and Correspondence

Appendix B-1

Survey Instrument

Retailer Survey
2002

[University Logo]

University of Tennessee

Conducted by Retail & Consumer Sciences,
1215 West Cumberland Avenue, Knoxville, TN 37996-1900
865-974-6614

Survey Instrument

Q-1 The following is a list of phrases that show different ways that retailers operate. Please circle the number that best describes your retail chains *typical* behavior. If your company operates more than one chain, please respond for the chain you are most familiar with.

My retail chain:	Does NOT describe my chain at all						Describes my chain VERY well
a) ...maintains a safe niche using a traditional store format.	1	2	3	4	5	6	7
b) ...sticks with using current retailing format (store type).	1	2	3	4	5	6	7
c) ...tends to offer a high level of service to customers.	1	2	3	4	5	6	7
d)...tends to offer lower prices (than direct competitors).	1	2	3	4	5	6	7
e)...concentrates on improving current ways of retailing, rather than developing new methods.	1	2	3	4	5	6	7
f) ...concentrates more efforts on serving current customers rather than focusing on new customers.	1	2	3	4	5	6	7
g) ...researches only trends/developments that impact OUR business directly.	1	2	3	4	5	6	7
h) ...grows through penetrating current markets with current/similar store format.	1	2	3	4	5	6	7
i) ...adopts technologies mainly to plan & allocate inventory.	1	2	3	4	5	6	7
j) ...is an innovation leader in the retail industry.	1	2	3	4	5	6	7
k)...operates different types of stores for different markets.	1	2	3	4	5	6	7
l) ...frequently moves into new markets.	1	2	3	4	5	6	7
m)..is known for being first-in" the industry for developing new ways to retail.	1	2	3	4	5	6	7
n)...does not mind risking profits for developing new ways to serve customers (new store formats & services)	1	2	3	4	5	6	7

Q-1 Continued
(from 'does not describe my chain at all' to 'describes my chain very well')

My retail chain:

o) ...focuses on capturing NEW markets, sometimes at the expense of serving existing markets	1	2	3	4	5	6	7
p)...is a leader in developing new ways to retail	1	2	3	4	5	6	7
q)...continuously adopts new technology	1	2	3	4	5	6	7
r)... adopts industry innovations after lengthy consideration.	1	2	3	4	5	6	7
s)... maintains current retail strategy, while testing new ways to retail (new store types).	1	2	3	4	5	6	7
t)... focuses 1st on serving existing customers and 2nd on capturing new customers.	1	2	3	4	5	6	7
u)... is successful in imitating other retailers BEST practices.	1	2	3	4	5	6	7
v)... carefully researches the retailing practices of competitors.	1	2	3	4	5	6	7
w)...grows by cautiously entering new markets with existing or modified store types.	1	2	3	4	5	6	7
x)... usually adopts technology AFTER problems arise.	1	2	3	4	5	6	7
y)... always takes advantage of industry trends.	1	2	3	4	5	6	7
z)... frequently takes risks.	1	2	3	4	5	6	7
aa)..frequently changes retail practice to imitate competitors.	1	2	3	4	5	6	7
ab)..researches customers/competitors on an as-needed basis only.	1	2	3	4	5	6	7

Q-2 Please indicate (to the best of your knowledge) your retailer's performance for the following items:

	Very Poor						Excellent
a) General profitability.	1	2	3	4	5	6	7
b) Return on investment (ROI)	1	2	3	4	5	6	7
c) Return on assets (ROA)	1	2	3	4	5	6	7
d) Sales per square foot	1	2	3	4	5	6	7
e) Effectiveness of cost control	1	2	3	4	5	6	7
f) Sales per employee	1	2	3	4	5	6	7
g) Total sales growth over past 3 years	1	2	3	4	5	6	7
h) Overall company performance	1	2	3	4	5	6	7

Survey Instrument

Q-3 Please check all of the items that your company *is currently doing* with the Internet:

	Have a company web-site (information only)
_____	Have a company web-site (information & selling)
_____	Receive e-mail from customers
_____	Monitor customer e-mail
_____	Send e-mail to customers
_____	Customize on-line promotions (based on customer purchasing patterns).
_____	Do not currently use Internet for marketing purposes.
_____	Do not plan to use Internet for marketing purposes.
_____	Plan to begin using Internet within next year (to provide information to customers only)
_____	Plan to begin using Internet to sell to consumers within the next year.

Q-4 Please check the one paragraph that most closely describes your company:

TYPE A_____This retailer focuses on maintaining its current customer base. It protects its markets by offering a high level of service and/or low prices. It is not often at the forefront of industry developments–it tends to ignore industry changes that have no impact on current areas of operation. It is devoted to serving current markets.

TYPE B_____This retailer aggressively moves into new markets. It values being first-in new markets, new technology adoption, and new ways to retail. It is an industry trendsetter that is not always the leader in its markets. It is known for its innovativeness.

TYPE C_____This retailer tends to enter new markets and adopt technology when pressured by competitors. It is a frequent risk taker and imitator. This company is very reactive to outside competitive pressure.

TYPE D_____This retailer maintains current markets, and only moves into new markets and/or adopts new technology after careful analysis. This company is successful in being second-in imitating best industry practice. It is very research oriented.

Survey Instrument

Q-5 Additionally, we would like to get some basic information about you.

Please check the option that best describes your current position:

_____ Marketing Director   _____ VP Marketing
_____ Merchandise Manager   _____ Marketing Administrator
_____ Marketing Associate   Other _____

How long have you been working in the retail industry?

_____ year(s)

How long have you been working for your company?

_____ year(s)

THANK YOU for your participation in this research. Please indicate below if you would like a copy of the study results. Also indicate whether you would like your company's individual results.

_____ NO, I do not want results
_____ YES, send me the aggregate results
_____ YES, send me my company results as well

E-Mail Address_____

If you do not provide an e-mail address, we will send the results to the address we have for you. If you have comments or questions, we would like to hear from you:

Marguerite Moore: mmoore11@utk.edu
Ann Fairhurst, Ph.D.: fairhurs@utk.edu
(865) 974-6614

No._____

Appendix B-2

Human Subjects Insert

Information to Respondents

You are invited to participate in a study on current retail practice. We are researching the strategy and Internet adoption..

YOUR INVOLVEMENT IN THE STUDY

We ask that you complete the attached mail survey. The survey takes approximately 10 minutes to complete.

RISKS

We foresee no major risks associated with participating in this study.

BENEFITS

The benefits of your participation in this study are an increased understanding of the impact of different forms of technology in the retailing business.

CONFIDENTIALITY

All information in the study will be kept confidential. Data will be stored securely and will be made available only to persons conducting the study unless participants specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link participants to the study.

COMPENSATION

You will be provided a copy of the study's aggregate results, as well as your individual results, upon request. You must participate in the study to receive this information.

CONTACT

If you have questions at any time about the study or the procedures, you may contact Marguerite Moore at (865) 974-2141. If you have questions about your rights as a participant, contact the University of Tennessee Compliance Section at (865) 974-3466.

PARTICIPATION

Your participation in this study is voluntary, you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed.

Appendix B-3

Cover Letter for First Mailing Wave

January 14, 2002

«salute» «first_name» «last_name»
«title»
«company_name»
«address1»
«city», «state» «zip»

Dear Marketing/Retailing Executive,

I need your help! Your firm is one of a small number in which executives are being asked to give their opinions on how retail firms operate in today's competitive markets. I have enclosed a survey that focuses on some different strategies your company may use to meet its goals. The purpose of this research is to achieve an industry wide understanding of retail strategy as part of my doctoral study.

In order for the survey results to truly represent current retail industry practices, it is important that the survey be completed and returned. **YOUR RESPONSE IS VERY IMPORTANT TO THE SUCCESS OF THIS STUDY.**

To demonstrate my appreciation for your time, I will be glad to provide an executive summary of the study's results to you upon completion of the analysis (May 2002). Please indicate at the end of the survey whether you would like this information.

The survey is designed to be completed in about 10 minutes, with most questions requiring you to simply circle the response.

All responses will be held in **STRICT CONFIDENTIALITY** and all analyses will be conducted without using your firm's name. The number assigned to the survey is for mailing purposes, so that I can remove your name from the mailing list as soon as your response is received. The return of this survey demonstrates your consent to participate in the study.

Thank you for your time!

Sincerely,

Marguerite Moore, Ph.D. Candidate
Enclosures

Appendix B-4

Cover Letter for Second Mailing Wave

February 11, 2002

«salute» «first_name» «last_name»
«title»
«company_name»
«address1»
«city», «state» «zip»

Dear Marketing/Retailing Executive,

I am writing you again to encourage you to participate in our 2002 Retailer Survey. I have enclosed another copy of the survey. The purpose of this research is to achieve an industry wide understanding of retail strategy as part of my doctoral study. In order for the survey results to truly represent current retail industry practices, it is important that the survey be completed and returned. **YOUR RESPONSE IS VERY IMPORTANT TO THE SUCCESS OF THIS STUDY.**

To demonstrate my appreciation for your time, I will be glad to provide an executive summary of the study's results to you upon completion of the analysis (May 2002). Please indicate at the end of the survey whether you would like this information.

The survey is designed to be completed in about 10 minutes, with most questions requiring you to simply circle the response.

All responses will be held in **STRICT CONFIDENTIALITY** and all analyses will be conducted without using your firm's name. The number assigned to the survey is for mailing purposes, so that I can remove your name from the mailing list as soon as your response is received. The return of this survey demonstrates your consent to participate in the study.

Thank you for your time!

Sincerely,

Marguerite Moore, Ph.D. Candidate
Enclosures

Post Card Reminder

UT

Just a Reminder...

We recently sent you our 2002 Retailer Survey designed to understand industry-wide strategy in the tough economic environment. For those of you who have already returned the survey, we thank you. If you have not sent it in, we would greatly appreciate your participation. Your company was hand selected for the study and **YOUR INPUT IS EXTREMELY IMPORTANT TO ITS SUCCESS.**

THANK YOU FOR YOUR TIME & CONSIDERATION,

Marguerite Moore   Ann Fairhurst, Ph.D.
University of Tennessee   University of Tennessee

If you have questions, we would like to hear from you: mmoore11@utk.edu, fairhurs@utk.edu, *Tel: (865)-974-2141*

APPENDIX C

Reliability and Principal Components Analysis for Independent Variables

PCA for Size Items

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.563	85.432	85.432	2.563	85.432	85.432
2	.280	9.329	94.761			
3	.157	5.239	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot
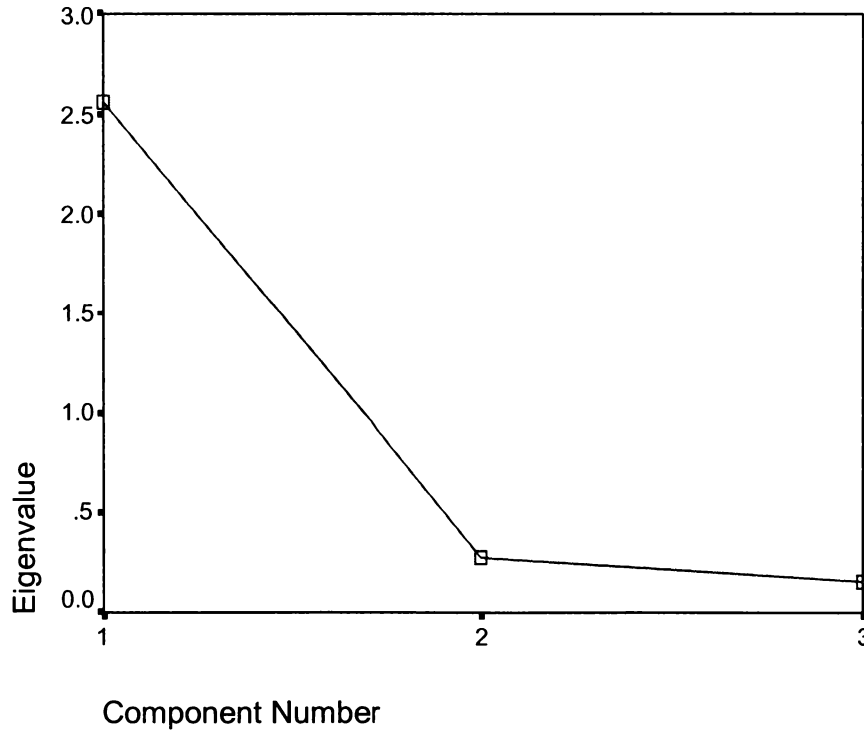
Appendix C-2

Reliability of Size Measure

Size items were gathered from secondary sources including the CGS & Plunkett databases.

<u>Item Statistics</u>

	Mean	Std Deviation	N
NOSTORES	2.5900	1.7413	101.0
NOEMP	4.4000	2.0744	101.0
REGIONS	2.5600	1.3804	101.0

<u>Correlation Matrix</u>

	NOSTORES	NOEMPLOY	REGIONS
NOSTORES	1.0000		
NOEMP	.8233	1.0000	
REGIONS	.7983	.7217	1.0000

<u>Statistics for Scale</u>

Mean	Variance	Standard Deviation	Variables
9.5500	23.1591	4.8124	3

<u>Item-total Statistics</u>

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
NOSTORES	6.9600	10.3418	.8737	.7647	.7993
NOEMP	5.1500	8.7753	.8203	.6892	.8746
REGIONS	6.9900	13.2827	.7922	.6502	.8955

<u>Reliability Coefficients</u>

Alpha = .9015   Standardized item alpha = .9146

APPENDIX D

Modification of Innovation Scale, Reliability, Residual Plots for Dependent Variables
and PCA for Objective Performance Factor

Modification of Scale for Level of Innovation

Original scale:

Please check all of the items that your company *is currently* doing with the Internet:

1. Do not currently use the Internet for marketing purposes.
2. Do not plan to use the Internet for marketing purposes.
3. Plan to begin using the Internet within the next year for information.
4. Plan to begin using the Internet within the next year for selling.
5. Have a company website for information only.
6. Have a company website for information & selling.
7. Receive e-mail from customers.
8. Monitor customer e-mail
9. Send e-mail to customers
10. Customize online promotions

Modified scale (following data collection, for scoring only):

Please check all of the items that your company *is currently* doing with the Internet:

1. Do not currently use the Internet for marketing purposes.
   Do not plan to use the Internet for marketing purposes.
   Plan to begin using the Internet within the next year for information.
   Plan to begin using the Internet within the next year for selling.
2. Have a company website for information only.
3. Have a company website for information & selling.
4. Customize online promotions

Residual Plot for Level of Innovation

Residual Plot

(unstandardized)
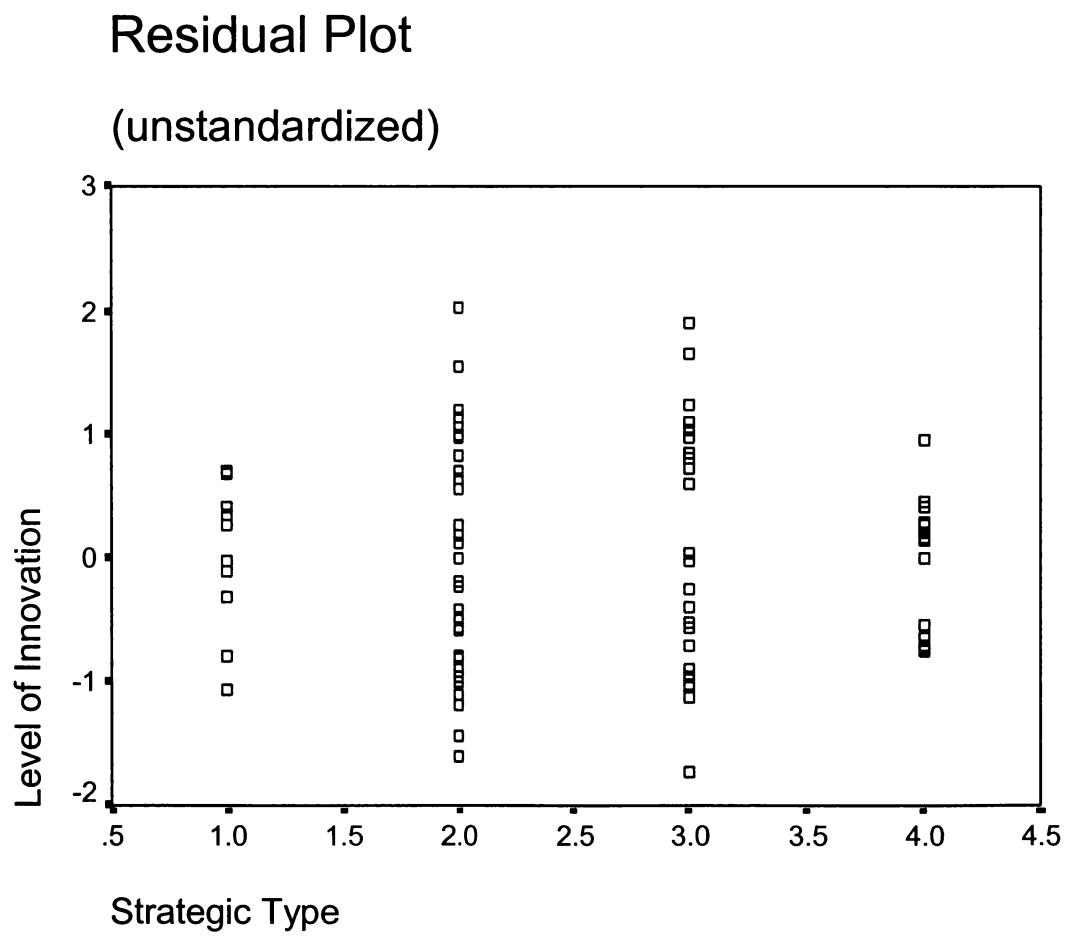
PCA for Performance Items (Subjective)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.467	78.098	78.098	5.467	78.098	78.098
2	.547	7.810	85.908			
3	.463	6.607	92.515			
4	.268	3.836	96.351			
5	.141	2.008	98.359			
6	7.609E-02	1.087	99.446			
7	3.876E-02	.554	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot

Component Number
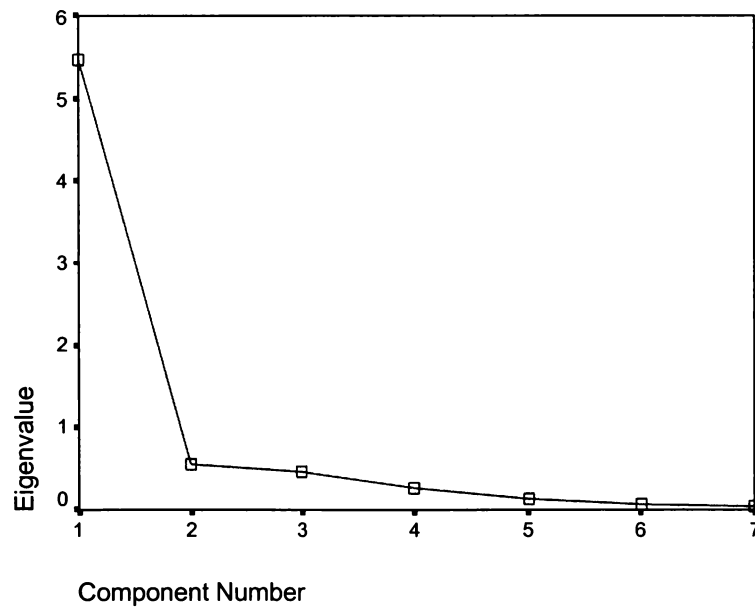
Reliability of Performance Measure (Subjective)

Scaled from 1-7 (very poor to excellent).

Please indicate your retailer's performance for the following items:

1. General profitability
2. Return on Investment (ROI)
3. Return on Assets (ROA)
4. Sales per square foot

5. Effectiveness of cost control
6. Sales per employee (dropped in PCA)
7. Total sales growth over past three years
8. Overall company performance

Item Statistics

	Mean	Std Deviation	N
SUBPER1	4.6337	1.7985	101.0
SUBPER2	4.6535	1.6759	101.0
SUBPER3	4.6040	1.6129	101.0
SUBPER4	4.6436	1.5594	101.0
SUBPER5	4.8911	1.4206	101.0
SUBPER7	4.6238	1.9071	101.0
SUBPER8	4.7030	1.6586	101.0

Correlation Matrix

	SUBPER1	SUBPER2	SUBPER3	SUBPER4	SUBPER5	SUBPER7	SUBPER8
SUBPER1	1.0000						
SUBPER2	.9362	1.0000					
SUBPER3	.9078	.9476	1.000				
SUBPER4	.7089	.7061	.7544	1.000			
SUBPER5	.6105	.5972	.6575	.4969	1.000		
SUBPER7	.7262	.6878	.7020	.7447	.5605	1.000	
SUBPER8	.8817	.8656	.8415	.7474	.6270	.7895	1.000

Statistics for Scale

Mean	Variance	Standard Deviation	Variables
32.7525	105.7081	10.2814	7

Item-to-total Statistics

|	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
SUBPER1	28.1188	74.2257	.9115	.9006	.9373
SUBPER2	28.0990	76.3901	.9049	.9373	.9381
SUBPER3	28.1485	77.0877	.9186	.9241	.9372
SUBPER4	28.1089	81.3180	.7808	.6793	.9484
SUBPER5	27.8614	86.5206	.6497	.4865	.9578
SUBPER7	28.1287	75.9133	.7871	.6891	.9495
SUBPER8	28.0495	76.5675	.9092	.8456	.9378

Reliability Coefficients

Alpha = .9516   Standardized item alpha = .9517

Residual Plot for Performance

Residual Plot
(unstandardized)
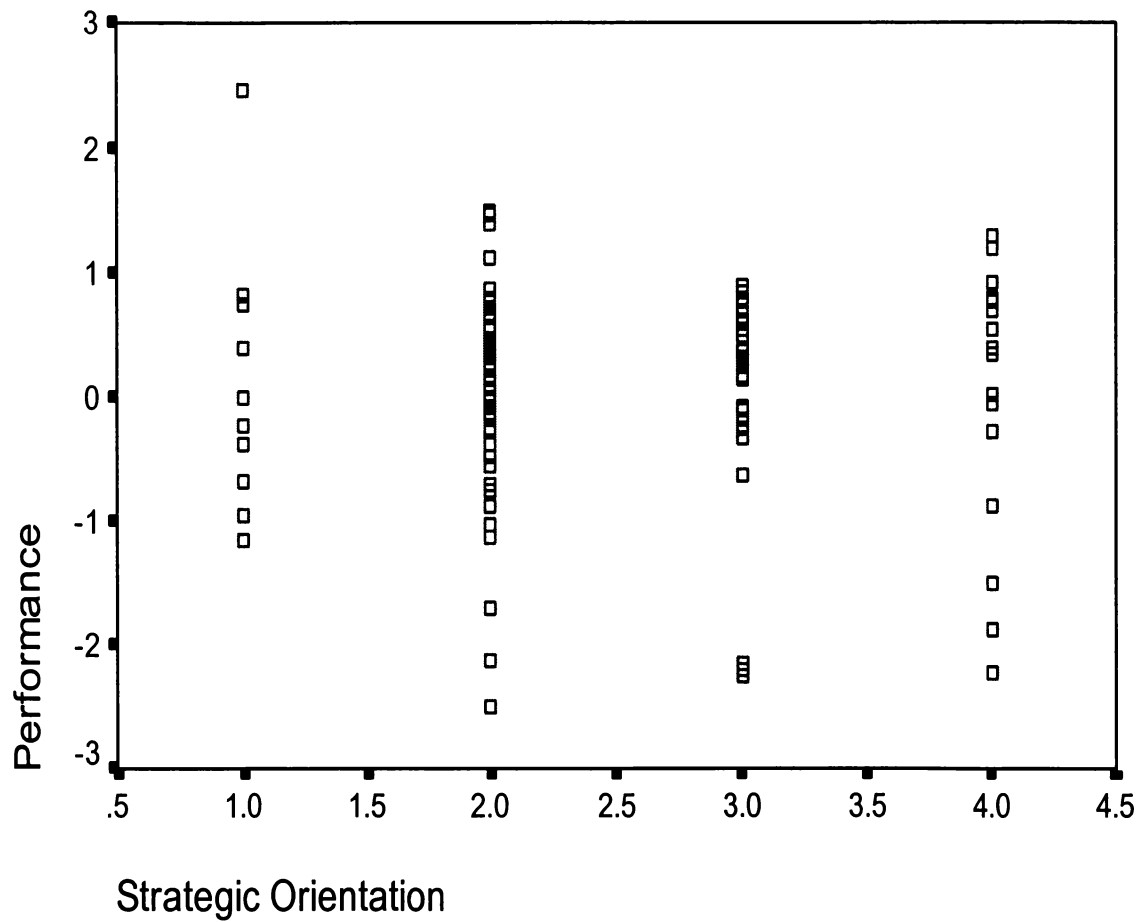
Appendix D-6

PCA for Objective Performance Factor

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.537	70.735	70.735	3.537	70.735	70.735
2	.764	15.280	86.015			
3	.636	12.722	98.738			
4	.062	1.236	99.973			
5	.001	2.666E-02	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot

114
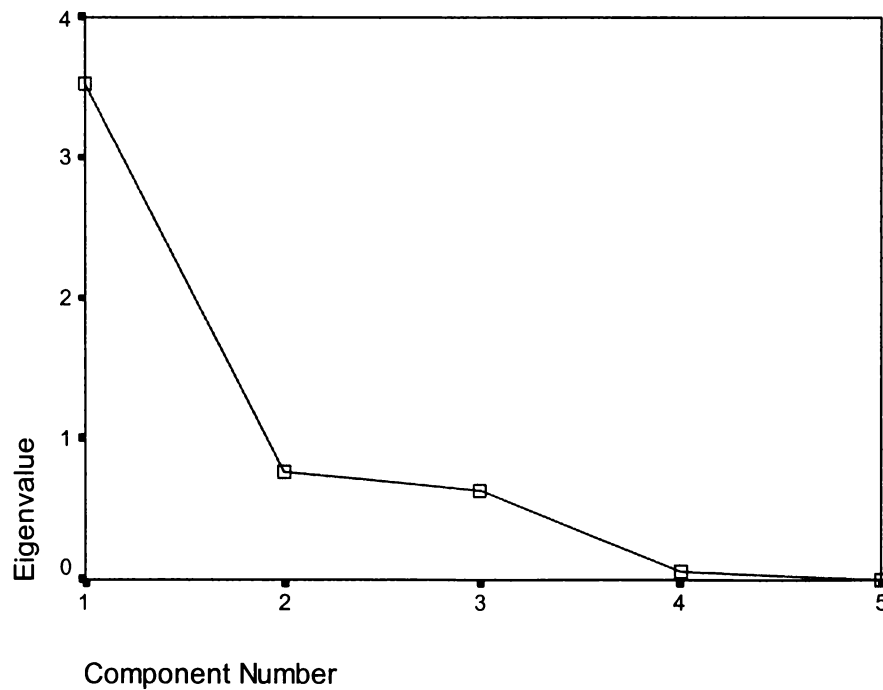
VITA

Marguerite Moore was born in North Carolina in 1967 and graduated from the Pender County School System in 1985. She received a Bachelor of Arts in Political Science from the University of North Carolina Greensboro in 1989. After completing her undergraduate degree, she worked for the United States Senate for three years. In 1994 she began her master's work in the Department of Clothing and Textiles at the University of North Carolina Greensboro. She completed her Master of Science in Textiles Marketing in 1996. During this time she also worked for Cahner's Publishing Company, High Point, North Carolina. After completing her Master's degree in 1996, she accepted a position in planning & allocation with the Limited, Inc. in Columbus, Ohio. In 1998 she began her doctorate in the Department of Retail and Consumer Science at the University of Tennessee-Knoxville. In 2002 she completed her doctoral program with a major in Human Ecology, a minor in Statistics and cognates in Research Methods, and Marketing, Logistics & Transportation. Her doctoral degree was conferred in August 2002. She will begin her academic career as an Assistant Professor in the College of Hospitality, Retail and Sport Management, at the University of South Carolina, Columbia.