INFORMATION SEARCH AND LEARNING ENVIRONMENT OF EMPLOYEES: THE MODERATING EFFECTS OF EMPLOYEE EMPOWERMENT BASED ON EMPLOYEES' PERCEIVED MARKET STRATEGIES

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ABSTRACT

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New customers and emerging markets are continuously appearing in the marketplace, firms' efforts to search for creative/innovative ideas are critical to adapt to new market conditions. For survival in an intensely competitive market, organizations need to have competitive market strategies that assist in capturing current and future consumer trends quickly and appropriate management strategies to enhance employee search of creative and/or new market information and learning. In this dissertation, we focused on investigating the differential effects of market orientation (MO) and entrepreneurship orientation (EO) strategies on employee information search and information learning. Further we examined the moderating effects of empowered employees, who are motivated to assume enhanced job responsibilities and are given autonomy with their scope of work, are more likely to freely express their ideas and take risks which are viewed as the foundation of creativity and innovation. Despite that both MO and EO are widely studied, little is known about how each strategy influences the way firms integrate the information, once it is collected. Thus, employing on the social network theory, this research explained MO/EO's group network ties and its impact on information search behaviors. Organizations' risk seeking and risk attenuated behaviors were also examined drawing on the image theory perspective. Information search behavior and organizational learning environment typologies were studied in relationship with market and management strategies. Specifically, we developed scales to measure the three types of information search behaviors based on Grant's

(1996a) conceptual constructs of knowledge integration types (efficiency, flexibility, and scope) by conducting qualitative interviews with retail buyers.

Our study results revealed that employees with a strong market orientation not only search for updates to existing information (efficient knowledge integration), they also extend their search by configuring and refining old information and adding some new information (flexible knowledge integration). Entrepreneurship oriented employees tended to engage in flexible information search behavior but not in innovatively new information (scope knowledge integration). Surprisingly, our study found that more empowered employees are less likely to use flexibility and scope information search behaviors, which is contrary to previous studies. Theoretical and practical implications were discussed and recommendations for future studies were provided.

To my parents,

Kyung Koo Lee and Hyo Soon Na

and

Won Uong Lim and Hyun Sook Han

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It has been a long journey with full of explorations, struggling, and excitement. It sure is a hard job to accomplish it. I would like to express that this dissertation would not be complete without the support of many individuals to whom I am most grateful.

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Today, I just step forward to another full of adventures.

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CHAPTER I

INTRODUCTION

Significance of Study

The value of human factors, such as each employees' ideas or expertise is an important focus of researchers in organizational studies since the 1960s; firms are more aware of the value of their employees when they compare the investment they make in hiring, training, and development with the cost of employee turnover and layoffs, (Altinay, Altinay, and Gannon, 2008; Huselid, 1995; Nauman, Khan, and Ehsan, 2010). Recent attention to the quality of employee relationships as a potential source of competitive advantage helps explain the growing interest in this topic. To enhance employees' value in their work environment, organizations focus on how management can facilitate employees' concept of self-efficacy, an intrinsic motivator, and how the organization can efficiently and effectively use the knowledge generated through employees. Employees, who are motivated to assume enhanced job responsibilities and are given autonomy with their scope of work, are more likely to freely express their ideas and take risks without fear of being punished. These activities are viewed as the foundation of creativity and innovation (Chan, Taylor, and Markham, 2008); therefore, organizations that seek to differentiate themselves try to find ways to empower their employees. Psychologically empowered employees, who tend to work beyond expectations exhibit "extra role behavior" (Organ, 1988). Unlike a traditional command and control work environment, a cooperative and supportive work condition engenders trust in each other, and based on trust, empowered employees are likely to proactively take new directions (Chan et al., 2008).

New customers and emerging markets are continuously appearing in the marketplace; consequently, firms' efforts to search for creative/innovative ideas are critical to adapt to new market conditions quickly and to increase market competitiveness. The increased attention to the importance of creative and/or new market information/knowledge gathering and sharing is emphasized in the innovation literature. Specifically, study results indicate that a firm may have knowledge inertia when employees rely on and share knowledge that is only generated within the firm; thus when they use a wide variety of knowledge/information from outside, it strengthens the firms' ability to innovate through enabling employees to generate and implement with novel ideas (Barringer & Bluedorm, 1999; Cohen & Levinthal, 1990; Kimble, Grenier, and Goglio-Primard, 2010). Due to the intensely competitive market environment, savvy organizations feel compelled to acquire market information so the firm can develop unique and innovative initiatives. Therefore, it is logical to focus on empowering employees, who will likely concentrate on increasing productivity by gathering information from diverse and creative sources and who will assume a risk taking posture.

Statement of Problem

Because retailers offer a mix of services, products, and facilities directly to consumers, to remain as sustainable business operations, they need to have competitive market and management strategies that respond appropriately and/or creatively to consumer trends. Knowledge of business strategies and management aspects that assist in capturing current and future markets and that become embedded in companies' business operations can help retailers explore new markets or maximize business performance in existing markets. Studies mention that a market focused culture/strategy guides how employees learn about market information which provides them with knowledge-related resources to understand and better respond to the

market environment. As a result, these firms function at a high performance level (e.g., Atuahene-Gima & Ko, 2001; Deshpande, Farley, and Webster, 1993; Zahra & Covin 1993).

Two of the most widely studied business strategies are market oriented (MO) strategy and entrepreneurship orientation (EO) strategy. A market-oriented business strategy requires company employees to identify market trends, customer needs, competitor strategies, and to respond to market intelligence (Kohli & Jaworski, 1990). Based on understanding of customers' needs, competitors' actions, and environmental trends, a market-oriented strategy responds to the marketplace in a timely manner and this leads to better business performance (Slater & Narver, 1994). Entrepreneurship orientation (EO) stems from individual's entrepreneurial traits such as need for achievement, internal locus of control, risk-taking propensity, tolerance for ambiguity, autonomy, and independence. Transforming such individual characteristics to organizational behavior that enhances on firms' innovative and creative marketing strategies is considered as entrepreneurship orientation (Slevin and Covin, 1990). That is, entrepreneurship orientation requires a focus on innovations that meet emerging and unarticulated customer needs to extend into new product lines or markets; it adopts entrepreneurial efforts in innovation, renewal, and venturing product and market development.

Since MO and EO strategies have different market focuses, we expect that the information collected through a market orientation perspective different than information collected through an entrepreneurship orientation perspective. However, previous MO/EO studies have not distinctly examined the how each strategy influences the way firms integrate the information, once it is collected. There are some criticisms about how employees in each strategy seek market information. While some researchers comment that market oriented companies that mostly target *current* markets may lead to ignorance of *emerging* market needs (Christensen,

1997; Deshpande et al., 1993), other researchers mention that entrepreneurship oriented firms that take too much risk and develop new technologies which customers do not understand also frequently fail to meet customers' needs (Olleros, 1986; Tushman, Anderson, & O'Reilly, 1997). Excessive amounts of market driven information can have negative effect on innovation. Levinthal and March (1993) and Martin (1995) comment that customer-focused firms may have myopic views (ignorance of long-run survival in preference of immediate pay-off) on strategies and that these limits lead to adaptive rather than disruptive product development. Thus, the authors conclude that a firm's current market trend focus is not sufficient to capture radical market opportunities due to the attention that they devote to current market needs. Christensen and Bower (1996) argue that when a firm allocates its resources based on predominately on current customer demands while ignoring allocation of resources for innovation, the firm's likelihood of failure increases. These criticisms provide a platform for examining how MO/EO are related to employees' information search behavior (relative to each strategy) and, because information alone does not automatically yield superior performance for a firm, how such information is absorbed and used throughout a company. When firm employees collect new information, the firm must internalize it; understanding the ability to translate that information into knowledge helps us extend research about relationships between MO/EO strategies and other organizational behaviors.

Based on the recent managerial focus on empowering employees to increase the likelihood of successful outcome behaviors, we are interested in the effects of empowered employees on information search. Several studies found that employees' creative characteristics, complexity of the work, and supportive supervision enhance employees' creative performance (Oldham & Cummings, 1996; Ramus & Steger, 2000; Zhou & George, 2003). Specifically,

employees' search for creative information and ideas is enhanced when employees have supportive and non-controlling supervision. Amabile (1997) mentions that supervisors' clear goal setting and feedback, allowance of autonomy, good communication, and enthusiastic support all nurture subordinate creativity. Therefore, empowered employees' decision making autonomy should render them to be less fearful of making mistakes and more willing to seek new and unique ideas/knowledge, enhancing their creative performance in competitive market conditions. Since supervisory support consists of supportive supervision and a low level of control of subordinates, supervisors essentially empower employees by transferring their legitimate power and control to subordinates while continuing to support them. Therefore, in our study, supportive supervision is conceptualized as empowering employees and we further examine how empowered employees affect the collection of market information and knowledge in relation to both MO/EO strategies.

Since researchers recognized the positive effects of ability to learn on firm performance, the value of organizational learning in relation to executing market strategies and other organizational outcomes has been examined extensively (Day, 1994; Deshpande & Webster, 1989; Dickson, 1996; Hanvanich, Sivakumar, & Hult, 2006; Levinthal & March, 1993; Matsuno, Mentzer, & Ozsomer, 2002; Sinkula, 1994; Slater & Narver, 1995). Organizational learning is a firm's tendency to create and use new knowledge/information; firms value learning of new knowledge for future survival (Hanvanich et al., 2006). On the other hand, memory is a firm's stored and (thus) familiar knowledge/information and firms use memory for interpretation and guidance for actions (Hanvanich et al., 2006). Specifically, Hanvanich et al. (2006) examine the differences of organizational learning and memory with organizational innovativeness and performance when market and technological environments are turbulent. Their study results

reveal that organizational learning affects innovativeness and performance more strongly than it affects organizational memory, when environmental turbulence is high. However, inverse relationships are found that when the environmental turbulence is low; memory has a stronger effect on innovativeness and performance than on learning (Hanvanich et al., 2006). The results explain that although different market conditions require different usage of organizational learning and memory, somewhat proactive learning (creation and usage of innovative knowledge/information) is critical in preparing for emerging market needs. When targeting emerging and unknown market segments, proactive information search and learning are important.

However, there still is a gap in the empirical study of organizational learning as a consequence of knowledge/information search behavior (including both information sources and search methods). Since information search behaviors rely on both MO and EO market strategies, the firms' success depends on how efficiently and effectively the collected information is learned. Several studies discuss differences in organizational learning styles; firms have different approaches to generate ideas, such as internal or external, and the different ways of idea generation exhibit different organizational learning styles (Cohen & Levinthal, 1990; March, 1991; Yeung, Ulrich, Nason, and Gilnow, 1999). For instance, while some firms generate new ideas from their own experiences, information, and knowledge, other firms try to search for external experiences, information, and knowledge. Obtaining new information that is already present in a firm's own domain of knowledge may enhance the firm to master the accumulated knowledge/information. In this case, generating knowledge/information is associated with the refinement and extension of existing knowledge, which is closely related with exploitative organizational learning. On the other hand, gaining of diverse and innovative knowledge, which

is not in the present domain of the firm's knowledge, may require new skills or new ways (experimentation) to observe the information/knowledge. This approach is similarly related to the explorative organizational learning.

For survival in an intensely competitive market, organizations need to build their own competitive advantages and protect them against competitors. Organizational resources, knowledge/information, capabilities of learning, and application of it are the principal sources of sustainable competitive advantage (Culpan, 2008). Studying the effects of MO and EO along with organizational search for new information and organizational effort to accumulate and integrate this new information into its own knowledge helps explain how a company builds a competitive advantage. While previous studies investigated the relationship of organizational strategies to firm performance, understanding of how organizations search for new information and how they learn from that information is needed to clarify the differences/or similarities between the firms' MO and EO. Moreover, our study explores the effect of employee empowerment on the search for new information. If the search for new information is influenced by support of supervisors or managers, such empowerment enhances employee motivation and autonomy in their work-related decision making; this could lead them to search for market information in self-determined and more creative manner. Although market strategies guide employees in their search for market information, the effects of employee empowerment influence information search behaviors at the same time. Due to limited resources, companies try to gather and use new information efficiently and effectively, thereby concentrating on either cost efficiency or product differentiation; therefore, examination of information search based on company market strategy and employee empowerment is necessary.

The results will assist the retailers in allocating in their resources effectively based on their prevailing orientation strategy. Development of products and markets that generate better returns or differentiate firms for the sake of increased performance is a continuous business goal; we expect that retail firms can use our study results to make strategic decisions about market strategy and management styles. As we focus on investigating the differential effects of market strategy (MO/EO) on employee information search and information learning, our study enhances the understanding of relationships among those factors and provides insights about development of appropriate strategic and management decisions in new products or market expansion. Since there is increased attention to the effects of employee empowerment in the work environment, our results contribute to understanding of empowerment in search of new market information.

Theoretical Frameworks

Before examining each variable/construct of interest and developing hypotheses about relationships, we provide theoretical perspectives behind the variable relationships. In bridging the market strategies, employee information/knowledge search (with moderating effects of employee empowerment), and organizational learning behaviors, we integrate theories and construct typologies such as image theory (Hollenbeck, Ilgen, Phillips, & Hedlund, 1994; Mitchell & Beach, 1990), social network theory (Granovetter, 1973; Rowley, 1997), information search behavior typology (Grant, 1996a), and organizational learning typology (Argyris & Schon, 1978; March, 1991; Yeung et al., 1999). In our study, we attempt to explain the relationship of market strategy and information search behavior with social network theory and image theory and between information search and organizational learning environment with image theory. Understanding the relationship of the variables based on proper theoretical explanations is

necessary to advance our scientific knowledge (Doty and Glick, 1994). Integration of social network and image theories and information search and learning behaviors helped organize our thoughts about the process and in this way, we believe, we could generalize our comprehension and knowledge of the employee's behavior.

Social Network Theory: The Strength of Weak Ties

Individuals and/or firms exist in a social network and interpersonal communication structures and communication flows are identified within interpersonal network ties. Particularly, Granovetter (1973) studied the influence of the degree of social network ties in relationship with informational diffusion. According to him, the strength of interpersonal ties is defined by a combination of several characteristics such as time, area, emotional intensity, intimacy, and reciprocal services. If an interpersonal network consists of close family, friends, or co-workers in the same department, this is an example of a strong tie network, because of their long time spent together, in a same place, similar emotional intensity, mutual confiding, and reciprocal services they perform for each other. Studies mention that such a strong group network results in little variation in group norms and leads to a clear image and expectations (Bienenstock, Bonacich, & Oliver, 1990; Rowley, 1997), and efficient and accurate communication (Rowley, 1997; Uzzi, 1996). On the other hand, people also have weakly related acquaintances, who are less likely involved with each other; they form a low-density network (less inter-relational). Instead of having similar backgrounds, this group of people has diverse cultures and backgrounds and such diversity provides different and new information.

Informational diffusion is explained differently based on the type of network ties. According to Rogers (1976), if the communication environment consists of strong ties, communication is familiar and becomes common knowledge within the group due to their shared

commonalities; therefore the communication is effective and efficient. However since they have a strong shared group norm and interlocking network characteristics, this communication environment prevents receiving new ideas from sources outside the network. Contrary to strong ties, individuals in a weak ties network are less resistant to risky or non-standard activities; they get information from diverse parts of the network and they are able to access new information and practices more easily than in a strong ties network. Since innovation comes from the diffusion of new information or practices, the weak ties of a group network act as a necessary step to the diffusion of an innovation. We attempt to explain how business market strategies influence employee information search behavior. We employ social network theory in order to explain MO/EO's group network ties and its impact on information search behaviors. We presume that the characteristics of market orientation and entrepreneurship orientation may provide different information search preferences (e.g. collection through already known group of people/sources vs. collection from unknown/diverse information sources). Overall, we assume that business market strategies lead employees to have different information search behavior.

Image Theory

Image theory is used to explain employees' and organizational decision making through information search and learning behaviors. According to the image theory, the decision maker has three different types of informational images that guide the decision makers' behavior (Beach, 1990; Mitchell & Beach, 1990). Those three images are: the value image, the trajectory image, and the strategic image. The value image is the most abstract level of image and consists of the decision maker's beliefs, values, ethics, and morals. These principles guide the decision maker's behavior, relative to what is proper and appropriate. The trajectory image is the decision

maker's aspired future and goals; it is what he or she hopes to become and to attain. The strategic image is the way in which the decision maker attempts to attain the various goals of the trajectory image.

Based on value, trajectory, or strategic images, two different types of decisions (adoption and progress decisions) are evaluated through two test methods (comparability and probability tests). An adoption decision is related to selecting new goals and plans for the trajectory or strategic images while a progress decision is an evaluation of whether current goals and plans are comparable with the trajectory image's goals and plans. The comparability test eliminates unacceptable choices while the probability test selects the best alternative. That is, adoption of new goals/plans is made by eliminating unacceptable choices by comparability test or selecting the best alternatives by probability tests. Progress of current goals/plans is evaluated by comparability tests based on comparing of current and future images. Since both in adoption and progress decisions use comparability test to measure the fit of current and future goal images, our study focuses on the fit of current and future images in explaining differences of information search types and learning methods.

Derived from the image theory explanation, few studies examine how a decision maker compares current business plans (strategic image) to the trajectory image based on comparability test (Hollenbeck et al., 1994; Richmond, Bissell, & Beach, 1998). Richmond et al. (1998) found that when the current status quo (images) of supervisor and customer behavior and ideal (trajectory) images are compatible, decision makers have little motivation to change their actions while incompatibility between images leads them to prefer a change in actions. Hollenbeck et al. (1994) also examined participants' decision making behavior in their experimental study and found that when there was a specific goal, which allows for less variability in outcomes, a

decision maker demonstrates risk avoiding behavior. When goals are less clear, allowing for variability of the future image, participants make riskier decisions.

With respect to goals compared to the current image (status quo), translating image theory into the context of decision making, it seems clear that the level of risk one is willing to tolerate constitutes part of one's strategic image. As such, this nature of one's future aspirations and goals should guide one's choices regarding risk. Specifically, a clear image should promote risk aversion, because a specific goal minimizes the acceptability of variability around the image. The lack of a clear image, on the other hand, would support the acceptability of wide variability in outcomes that are associated with risky decisions. We apply this rationale that when organizations have specific goals (image), firms would like to show risk attenuated behavior while firms would have risk seeking behavior if they have a less clear image of future goals.

Since market orientation (MO) provides market related information continuously, employees' search of new information is not much different from the current information, thus, the new information search is clear and comparable and these lead to risk attenuated decision making about the new information search. Also when newly collected information is not much different from the information they already have, the learning method of it is risk attenuated way such as benchmarking the best. On the other hand, entrepreneurship orientation (EO) needs to search for emerging and originative information, the goal for new information search is not comparable to their current goal. Hence, the image for new information search goal is not clear and this leads them to take more risks in their search behavior. Also new information is not comparable to the company's current information, the decision to choose the learning such information is likely to take more risks such as experimentation of it. We will discuss more about

this image theory in relation with information search behavior and organizational learning methods.

Typological Constructs

Unlike a theory, which has a logical rationale and testable relationships among a set of concepts, constructs, and variables, typologies classify schemes and taxonomies that categorize a set of phenomena into clustering groups (Bacharach, 1989; Doty & Glick, 1994). In developing our model based on market strategies and its relationship with other organizational variables, we apply two typological constructs such as information search, and organizational learning environment, to categorize the concepts more specifically.

Information Search Behavior Typology

Organizational knowledge management has been recognized as an important component of organizational capital for more than a decade and research addresses how to effectively utilize explicit and tacit information and knowledge in new product development processes (Cooper, Edgett, & Kleinschmidt, 2004; Nonaka & Takeuchi, 1995; Zahra, 1993). In order to heighten the firms' competitive advantage, researchers consider knowledge as the principle resource and focus on how to search, transfer, and integrate the knowledge into organizational memory (Almeida, Phene, & Grant, 2003; Barney, 1991). Grant (1996b), specifically, emphasizes the role of knowledge integration in the firm and mentions that "How knowledge is integrated to form organizational capability, and goes on to identify characteristics of capabilities which are associated with creating an sustaining competitive advantage in dynamically-competitive markets…is the heart of knowledge-based theory" (p. 375).

Grant (1996a) discusses the types of knowledge integration and differentiates among them. He proposes that the integration of knowledge or information is a critical factor in organizational capability and is formed in terms of benefits derived from different integration methods: efficiency, scope, and flexibility. Efficiency of knowledge integration is measured by how well firms manage the cost (economies of scale perspective) of collecting and identifying knowledge. There are three factors affecting the efficiency of information integration: the level of common knowledge, the frequency and variability of task performance, and organizational structure. Common knowledge, vocabulary, and experience among employees increase communication ease, which leads to efficient integration of knowledge (Monge, Rothman, Eisenberg, Miller, & Kirste, 1985; Tushman & Katz, 1980). The efficiency of organizational communication also depends on the frequency of the pattern of coordinated activity. While more frequently repeated organizational routines increase the efficiency of information integration, variation in routines reduces efficiency. Lastly, efficiency of information integration is related with an organization's coordinated structure and level of task difficulty. A more coordinated and centralized organizational structure increases the efficiency of information integration for simple tasks, maximizing the affordable communication of knowledge, while a multidivisional organizational structure increases efficiency of information integration for complex tasks, achieving higher levels of coordination with lower levels of communication.

However, the pursuit of efficiency in information integration will reduce the diversity of information; the knowledge of coworkers may be redundant (Granovetter, 1973; Granovetter, 1983; Szulanski, 1996; Teigland & Wasko, 2003). Grant (1996a) also warns that the use of common knowledge and vocabulary derived from different specialists in order to communicate would cause loss of some amount of specialty information. Thus, the knowledge available

through coworkers is likely to be limited and superfluous, and will likely decrease the ability to develop new and creative ideas. The focus on efficiency of information integration through common language and frequent interactions thus reduces the collection of creative and unique information.

The scope of information integration refers to the different types of specialized knowledge being integrated. The breadth of organizational knowledge will increase competitive advantages due to the addition of specialized knowledge to the organization and the difficulty of imitating the knowledge among competitors (Dierickx & Cool, 1989; Lippman & Rumelt, 1982). Generally speaking, the wider the scope of information being integrated (and hence, the greater the diversity of the individuals involved), the lower the level of common knowledge, and the more inefficient the communication and integration of information.

Finally, flexibility of information integration is a firm's capability to extend knowledge while reconfiguring existing knowledge. That is, a firm's competitive advantage comes from the firm's continuous renewal of knowledge. The flexibility of information integration is the way in which a firm can access additional knowledge and reconfigure existing knowledge. This flexibility can be understood by Low and MacMillan (1988)'s remark that, "It is useful to stop occasionally, take inventory of the work that has been done, and identify new directions and challenges for the future" (p.139). The process of introspective information search, such as reconfiguring already used/collected information and integrating this prior information into new information, which helps firms prepare for new development, is defined as flexibility of information integration. Further, Grant (1996a) mentions that this flexible information integration, either through continuous integration or constant reconfiguration of existing

information on product, process, or strategic involvement with other departments, leads to new directions, which is defined as architectural or strategic innovation.

As Grant (1996a) explained, knowledge integration is associated with the firms' capability or performance; we applied his rationale in that MO and EO's information integration is part of a firm's specific capabilities and it impacts performance. Based on Grant's (1996a & b) knowledge integration, we could propose different information search behaviors for market orientation and entrepreneurship orientation. In explaining the relationship between business market strategies (MO and EO) and information search behaviors (Efficiency, Flexibility, and Scope), we employ social network theory's strong and weak interpersonal communication networks ties and image theory's explanation of the degree of goal specificity.

Organizational Learning Environment Typology

The original framework for organizational learning is derived from Cyert and March (1963) and Argyris and Schon (1978). According to these two studies, organizational learning takes place when there is a gap between performance expectations and actual performance. If performance is lower than expectation, companies try to learn new knowledge in order to increase their competence. Organizational learning consists of two types: single-loop (adaptive) and double-loop (generative). If the learning process and new information changes only activities within existing company norms or policies, then it is said to be single-loop or adaptive learning. Single-loop learning adds knowledge without changing the organizational nature. The changes precipitated by single-loop learning result in sequential improvement (Dodgson, 1993; Slater & Narver, 1995). Single-loop learning is lower-level (Fiol & Lyles, 1985), adaptive (Senge, 1990), and non-strategic (Mason, 1993) learning. However, if the learning changes organizational

norms or policies, and raises questions about the firm's mission and market strategies, then it is considered double-loop or generative (Argyris & Schon, 1978; Cyert & March, 1963; Sinkula, 1994; Slater & Narver, 1995).

In a more recent framework, March (1991, 1995) defines organizational learning in two ways: as exploitation and as exploration. His view is that organizational learning, in relation to allocation of resources, increases the competence of the firm. He states that exploitative learning is the "refinement and extension of existing competences, technologies, and paradigms. Its returns are positive, proximate, and predictable. The essence of exploration is experimentation with new alternatives. Its returns are uncertain, distant, and often negative" (1991, p.85). In consideration of exploitative learning's focus on improvement of current competency and explorative learning's focus on new alternatives, most of which are new to the market, they are similar to the previous views of adaptive and generative learning, respectively.

More recently, two exploitative and two explorative organizational learning environments are discussed and measured by Yeung et al., (1999). The authors specifically focus on a company's approach to generate new ideas from diverse sources. Organizational learning takes place when companies try to generalize newly created knowledge by codifying it and sharing, or transferring it from one department or site to another. Those who use exploratory learning are considered experimenters (innovators) and competent acquirers (skilled workers) while those who use exploitative learning include benchmarkers (copiers), and continuous improvers (experts).

Experimenters are those who create new ideas and learn them through their direct controlled experimentation. Firms are able to learn state-of-the-art competencies through training employees, recruitment of skilled employees, or through strategic alliances. In these two learning

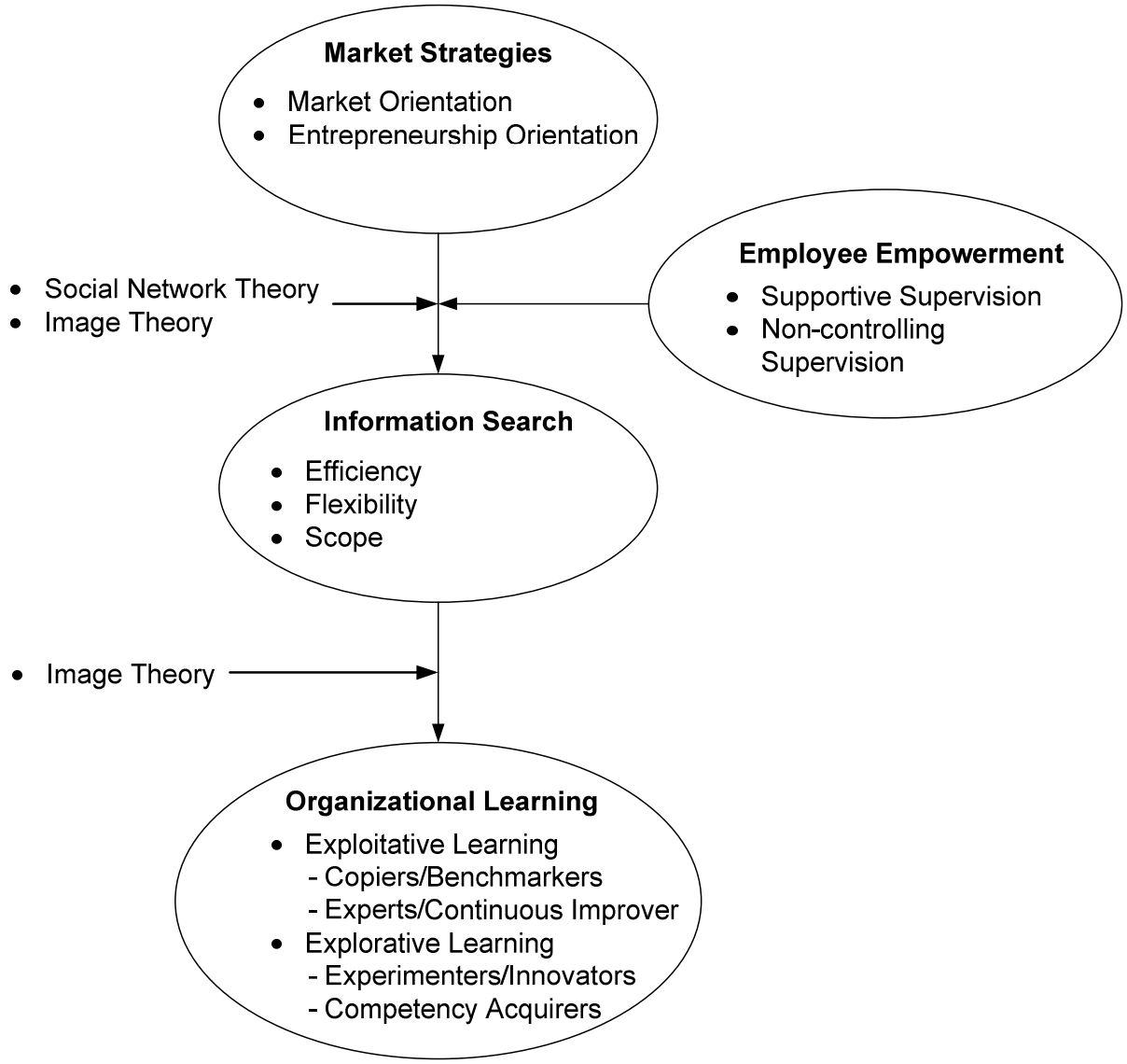
typologies, companies' new competitive advantages are created through innovative product/process development. That is, through experimentation and new skill acquisition, which are associated with originality, innovation, and uniqueness, companies try to meet the emerging needs of customers and to explore the new possibilities.

The benchmarking and continuous improvers are the other two different learning typologies that organizations use to discover new knowledge and ideas. Through benchmarking, organizations learn by adopting and/or adapting the best practices into the organizations' own knowledge base. Organizations also learn by continuous improvement of existing practices. In discovering of new opportunities, this learning type emphasizes mastering of existing competences and experiences. Exploitation of external and internal existing practices is another way organizations approach learning of market trends. In our study, we argue that organizational learning differences are due to the firm's depth and diversity of information as March (1991) and Cohen and Levinthal (1990) mentioned. We use image theory to explain how firms choose their learning environment appropriately as exploitative or explorative based on their information/knowledge sources.

In the next section, using theoretical and typological underpinnings of social network theory, image theory, information search behaviors, and organizational learning types, we examine the organizations' two market strategies: market orientation and entrepreneurship orientation. In discussion of employees' search of information, we try to differentiate employee search effort based on employee empowerment; employees are more motivated and show proactive behaviors when they are empowered. In their information search, we argue that the more empowered employees search for the more diverse and innovative information. With use of the theories and typologies, we believe, we could provide organized thoughts and views of firm

effort (through their employees) to increase competitive advantages in the marketplace through proper implementation of market strategies and information search and learning styles. A model for the conceptual flow is given in Figure 1.

Figure 1. Conceptual Flow Model



CHAPTER II

LITERATURE REVIEW

In this chapter, we review the literatures which are relevant to our study. In order to explore the relevance of orientation strategy (MO or EO) in the retail industry, our first focus is to review previous MO and EO studies. The conceptual development of MO and EO studies and how these strategies have been used in relation to other organizational variables are discussed in the first section. Next, we examine the effects of MO and EO on retailers' information search behaviors (efficiency, flexibility, and scope) when they develop new product lines and new markets. According to social network theory and image theory, the collection of diverse information/knowledge is accomplished through a weakly tied social network system with a less specified future image (goal/s); collection of a deeper form of existing information is accomplished via a strongly tied group with a specifically well-defined future image (goal/s). Thus, we discuss that how organizational social network ties are related to MO/EO and how network ties influence the depth and breadth of information search when developing new markets and product lines. Then, we review the moderating effects of employee empowerment on the relationship between market strategy and information search behavior in new product/market development. We argue that the empowerment of employees moderates the magnitude and direction of the relationship between market strategies and employee search behavior. Empowered employees' proactiveness in their work decision making is expected in new information/knowledge search. In the last section of this chapter, we discuss about the

organizational learning environments (exploitative and explorative), and how they are related to information search behaviors.

With regard to the two market strategies (MO and EO) and their effects on employees' information search and learning behaviors, we examine how retail employees incorporate a MO and/or EO in their work environment. Several studies confirm that the firms' strategic postures are reflected in the organization members' internal practices and procedures (De Clercq & Rius, 2007; Tortosa, Moliner, & Sanchez, 2009; Ullrich & Van Dick, 2007); employees' perceptions of both strategies are analyzed in our study. Thus, we examine the employees' perceptions of market strategies (MO/EO) first. Based on the level of each type of market strategy (MO/EO) as perceived by the employees, we test its relationship with information search behaviors and organizational learning environments.

Market Orientation vs. Entrepreneurship Orientation

Market orientation is a firm's orientation toward the collection, dissemination, and response to market intelligence (Kohli & Jaworski, 1990); the firm's market focused information processing activities are essential to create superior products and services to meet customer needs. Previous studies provide different interpretations and approaches about the market orientation (MO) concept. The first group of studies views market orientation as an organization's market information processing activities; market-oriented companies generate information about current customers and competitors, disseminate it, and respond to market intelligence (Jaworski & Kohli 1993; Kohli & Jaworski, 1990). The second stream of studies views MO as an organizational culture; a market-oriented organizational culture creates behaviors among employees to generate market information and thus return superior value, such

as innovative products, to the customers (Narver & Slater, 1990; Slater & Narver, 1994). They define that market orientation consists of three behavioral components (customer orientation, competitor orientation, and interfunctional coordination) and two decision-making criteria (a long-term focus and a profit focus) (Narver & Slater, 1990). The last stream of studies mentions that customer orientation and innovative business strategies, which are well accorded in corporate culture, have a measurable impact on business performance; these three factors (customer orientation, organizational innovativeness, and organizational culture) are considered as measures of MO (Deshpande et al., 1993).

While all streams of studies include organizations' seeking of customer related information as a major part of market orientation strategy, the second and the third group of studies consider MO as the organizational culture which influences other firm behaviors. Despite the fact that each scale represents the specific different perspectives of MO, there are overlapping concepts among the scales and it is evident that the customer focused business strategy is a common factor of any market orientation measure.

While different conceptualizations of MO exist, Deshpande and Farley (1998) compared those three MO scales' robustness and generalizability. In order to evaluate the MO scales' standardized operationalizaton and its robustness across the different countries, the authors compared 15 items from Narver and Slater (1990), 20 items from Kohli, Jaworski, and Kumar (1993), and 9 items from Deshpande et al. (1993). They used a sample of 82 marketing executives from three Marketing Science Institute (MSI) meetings, consisting of 19 American and 8 European companies. Reliability of all three scales in different cultural settings, such as industrialized or industrializing countries was acceptable (i.e. Cronbach's α's ranges from .67 to .90 for US, and .61 to .83 for Europe. They tested the generalizability of the three scales

across consumer-, industrial-, and service-type goods in predicting subjective performance measures; there were no significant differences across industry types on any of the three MO scales. These results support that no substantive differences exist among the three MO scales and support the generalizability of MO in different cultures and in different industries.

Based on the development of the MO construct, overall, market orientation enhances employee commitment and team sprit to satisfy customer needs, market oriented firms constantly monitor the market environment and they fulfill the needs of target customers with appropriate products. That is, market orientation yields higher performance by unifying employees and organizations, leading to the efficient gathering of market information and responding to market needs (e.g., Jaworski & Kohli, 1993; Lumpkin & Dess, 1996; Matsuno, Mentzer, & Rentz, 2005; Pelham, 1999; Slater & Narver, 1994). In particular, studies show that top management's emphasis on a market oriented mind, interdepartmental connectedness, organization's non-authoritative structure, and market-based reward systems are significant antecedent factors of MO (Day, 1994; Kirca, Jayachandran, & Bearden, 2005; Matsuno et al., 2002). As the degree of market orientation increases, customer perception of products and services quality (Brady & Cronin, 2001), implementation of new products and ideas (Han, Kim, & Srivastava, 1998; Hult & Ketchen, 2001), and employee commitment to the firms (Siguaw, Brown, & Widing, 1994) are all improved.

Like market orientation, the effect of entrepreneurship and firm behaviors has been examined vigorously. Entrepreneurship orientation consists of three components: innovativeness, risk-taking, and proactiveness (Covin & Slevin, 1989; Miller, 1983). Miller (1983) comments that entrepreneurs seek innovation and new opportunities and that these tendencies lead to constructive risk-taking. Lumpkin and Dess (1996) define EO as "the processes, practices, and

decision making activities that lead to new entry (p. 136).” In addition, a company with an EO engages in “product-market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors (Miller, 1983, p. 771).” In an entrepreneurial organization, employees value autonomy and freedom which enable them to pursue creativity, risk taking, and exploration in the development of innovative ideas. To obtain competitive advantages, the entrepreneurial culture encourages employees to look for innovative changes in their product and/or process development. They define entrepreneurial spirit as “pursuing new opportunities by participating in emerging markets” (Lumpkin & Dess, 1996, p.146). That is, organizations’ entrepreneurial orientation encourages employees to pursue creative and new projects (which are believed to be risky) more frequently than companies without an entrepreneurial orientation. We could assume that entrepreneurship orientation results in creative decision-making, especially in the search for new opportunities.

In Miller’s (1983) conceptualization, the three entrepreneurial characteristics (innovativeness, risk taking, and proactiveness) are considered as antecedents of an organizational structure to find new business opportunities, to create superior customer value, and to improve business performance (e.g., Barringer & Bluedorn, 1999; Covin, 1991; Covin & Slevin, 1989, 1991; Deshpande et al., 1993; Slater & Narver, 1995) . Many studies find that market- and entrepreneurship-oriented strategies are closely related in their positive influence on company performance (ex., Atuahene-Gima, 1996; Matsuno et al., 2002; Morris, Coombes, Schindehutte, & Allen, 2007; Slater & Narver, 1995). Researchers view that the orientations are somewhat associated since they engage in proactive market sensing activities (anticipating customers’ current and future needs and responding to those needs proactively) and they positively influence firm performance. Morris et al. (2007) find a weak but positive correlation

coefficient ($r = 0.18$, $p < .05$) between client focused market orientation and entrepreneurship orientation in non-profit organizations. The authors explain that the market oriented effort of continuous search helps the company serve clients better and yields better performance, but at the same time, an innovative entrepreneurial nature enhances non profit organizations' ability to anticipate unmet customer needs, leading to proactive opportunity identification.

Matsuno et al., (2002) also examined the relationship between MO and EO with marketing executives of 1300 U.S. manufacturing companies. In their study, however, they argue that entrepreneurial characteristics facilitate employees' willingness to search and learn about the market information. Especially, innovativeness, as one of entrepreneurial firm characteristics, requires extensive collection of information, because innovativeness is shaped by the diffusion of new information and this is accomplished by new information sharing and utilization (MO characteristics). They found significant and positive path coefficient (.468) for direct relationship from entrepreneurial proclivity to market orientation; the authors conclude a causal effect of EO's characteristics leading on MO's information generation, dissemination, and responses. In order to complete a causal effect, however, counterfactual dependence must be confirmed (Pearl, 2009) such as without entrepreneurial characteristics, there is no market oriented information search behaviors. However, as MO studies argue that MO alone has its own tendency to search for market information and organization-wide sharing, thus, the causation relationship between EO and MO is weak and this relationship is still needed more investigation.

Entrepreneurial orientation tends to engage in a great deal of information scanning activities with innovative, proactive, and risk-taking while market orientation constantly gathers market trends and consequently shares and utilizes the information. Although MO and EO may guide employees to search differently for new/innovative information, the efforts in seeking

unmet customer needs, renewing the company products appropriately, and providing superior customer value are viewed as shared characteristics of both MO and EO. Therefore, we hypothesize that;

H1: Employees' perceived market orientation and employees' perceived entrepreneurship orientation are directly related.

Market Orientation vs. Entrepreneurship Orientation: How Does Each Strategy Influence Employee Information Search Behavior?

MO studies view that better organizational performance results when an organization collects market information, disseminates it through employees in various departments, and develops a market-oriented culture. Market orientation provides a unifying focus for the employees and the organization and leads to efficient gathering of and responding to market intelligence. To understand the effect of market orientation on a company's performance, Day (1994) emphasizes the value of information, which is collected as part of a company's market-oriented strategy. He says "a market driven culture supports the value of thorough market intelligence and the necessity of functionally coordinated actions directed at gaining a competitive advantage" (Day, 1994, p.43). Day views market-driven companies as well positioned to anticipate and respond to customers' needs, thus giving them a competitive advantage.

However, because market-oriented companies focus on current customer needs, their ability to prepare for new market opportunities has been challenged. Since market orientation focuses on current customers and competitors, researchers argue that market-oriented companies' targeting only current markets may lead to ignorance of latent and/or emerging market needs (Argyris, 1994; Christensen, 1997; Deshpande et al., 1993; Grewal & Tansuhaj,

2001; Hamel & Prahalad, 1994). Likewise, Grewal and Tansuhaj (2001) state that "highly attuned market orientation would cause firms to lock into a standard mode of cognition and response, thereby building inertia instead of the creative thinking" (p.70). In contrast to the generally asserted fact about positive effects of customer oriented market implementation, these studies argue the negative side of customer-oriented market information in the development of new products/markets.

EO studies consistently mention the value of information in the execution of innovativeness. Employees with a high level of EO are aggressively willing to tackle high-risk projects which usually have a high uncertainty of success. EO firms tend to have a futuristic, unidentified market focus, and to gather research on innovative products/markets, they need extensive information to make decisions (Lumpkin and Dess, 1996; Shane, 2000). A focus on future markets and innovations directs employees to be concerned with emerging and unarticulated customer needs and maintain a competitive advantage through extension of new product lines and/or market development (Barringer & Bluedorn, 1999; Covin & Slevin, 1989; Lumpkin & Dess, 1996; Zahra, 1993). We believe that organizational information/knowledge search in the development of new products/market is implemented through the firm's market strategy or strategic goals. Drawing on social network theory (strong and weak ties), we presume that MO's organization-wide focus on market demands and its response to the market needs builds a strong group norm leading employees to collect, disseminate, and respond to market information in an effective manner; the seamless and efficient information exchange within the firm guide employees to work in unison. On the other hand, because entrepreneurship orientation involves being innovative, proactive, and risk-taking, we assume that the entrepreneurship oriented work environment is generally less structured and less resistant to obtaining radically

innovative information. Consistent with our assumption, researchers suggest that entrepreneurial firm employees, who are seeking unknown market information, tend to search market information more broadly than market oriented firm employees, who know what to search (they have the prior market information). This demonstrates the entrepreneurial firm's diverse market opportunity search, when they are searching for unfamiliar information (Chandra, Styles, & Wilkinson, 2009; Short, Ketchen, Shook, & Ireland, 2010). Especially, Chandra et al. (2009) interviewed chief executive officers, owners, founders, and directors from eight small medium-sized enterprises (SMEs) in Australia and examined the process of opportunity recognition, firm characteristics, and success and obstacle factors in international operations. The results show that the search activities of entrepreneurs, who do not have prior knowledge about the market, are more like a discovery than a deliberate search and they found entrepreneurial characteristics are important success factors. In a study of Short et al., (2010), they review previous entrepreneurship research and attempt to identify "new entrepreneurial opportunity" and its antecedents and outcomes. As antecedents of new entrepreneurial opportunity, they mention that opportunity *finders* think more deeply, engage in more search activities, and use different analysis of data than *non-finders*/nonentrepreneurs. In order to explain such differences, the authors cited Dyer, Gregersen, & Christensen's (2008) study that firms' different abilities of questioning, observing, experimenting, and idea networking lead them to generate outcomes in a variety of ways. Thus, our investigation of EO's market information search behavior compared to that of MO's will add richness to this field.

Now we discuss in detail that how market strategy directs employees to search for specific market information. Due to different characteristics of MO and EO, especially in their different target markets and risk taking tendencies, collection of market information would be

different. MO employees collect information from current customers, competitors, and others in the market environment (such as distributers, manufacturers, etc.). While market orientation responds to expressed customer demands, entrepreneurship orientation is proactively involved with innovative market information which may be risky (e.g., Deshpande et al., 1993; Tushman et al., 1997). Thus, we expect that employees will search for different types of information to develop new product lines and markets. EO's search of information is likely about unexpressed and emerging trends and their marketing goals and returns are relatively unknown compared to that of MO.

Specific to our study's focus on retail companies, retail organizations are aware of the value of information in their product assortment decisions. For staple products, retailers traditionally search the past season's sales data when they prepare assortment plans for the next season. They search for and collect explicit and codified information (e.g., sales, markdown records) from their own operational system or from the vendors' market trend analyses and they consider that information in preparing assortment plans for the next season (Xu, 2003). However, when more risk is involved for trendy products, employees seek diverse and/or different information (Kogut & Zander 1992). In an effort to differentiate themselves, retailers engage in product development and they gather all relevant information for their development decision making . When developing a new product line or a new market, retailers collect implicit and tacit information from personal and professional sources such as professional social networks, market research, or trade publications.

Information from different sources is transferred throughout the organization at different rates. According to Nonaka (1994), explicit and codified knowledge, such as computerized or documented knowledge, is easily communicated among employees while tacit or contextual

knowledge, such as expertise, skills, or know-how, is more difficult and costly to transfer, so firms integrate the information differently. However, while previous studies explain the importance of human assets and how important they are to accessing such explicit and tacit information through the knowledge management process (e.g., Barringer and Bluedorn, 1999), it is not clear how different information is used in the new product development process, and how it is influenced by market orientation and entrepreneurship orientation market strategies.

Grant's (1996a) taxonomy of information integration and other knowledge management studies, confirm that companies use different methods of information search and collection (information integration) based on their market strategies. Since MO and EO have different market approaches, the types of new information about the market they seek to enter would be different. A market oriented strategy continuously senses and responds to market trends in a timely manner, so the market information seems familiar. The information collected in this way may be incremental new market information, but not radically different from previously collected information, hence new product development goals can be clear and precise.

According to image theory, the decision maker has hierarchically arranged images, and his decision making follows the image which is set from the higher image to the lower image. That is, a decision maker has a current image for new projects/plans (strategic image) and compares those to the aspired goals (trajectory image), and further to the values, beliefs, and principles (value image) of the decision makers. While pursuing from the lower to the higher goals, decision makers screen and evaluate the alternatives based on the compatibility and profitability tests. With image theory, Hollenbeck et al. (1994) examined risk decision making. They viewed that the risk taking decision depends on the degree of goal specificity. With a specific goal (clear and precise goal), risk is attenuated due to less variability around the goal. On

the other hand, with a less specified and unclear goal, there is variability in outcome achievement and a greater likelihood that risk taking is involved. Hollenbeck et al. (1994) found that participants' likelihood of making a high risk decision is greater when they are given a do-your-best-goal than a specific goal. These results and logics lead us to explain why MO and EO collect information differently.

In consideration of retailers' market orientation perception as the value image, their information search decision can be explained with image theory. The market oriented retailers' trajectory image (goal) is responding to current market needs and wants, thus the goal is somewhat specific and clear because they deal with similar customers and competitors due to the continuous market sensing activities. As a strategic image, retailers search for new information in a risk attenuated manner since the retailer has a specific goal in mind due to looking for similar market information using similar search methods. Therefore, less risky information collection is appropriate for market oriented retailers. We propose that efficient search for information, such as looking for similar routines and/or watching for the best practices in previous performance or in competitors' activities, is positively related to market orientation perception.

In contrast, entrepreneurship orientation (value image) motivates retailers to focus on the future and unknown markets and emphasizes initiative and bold actions (trajectory image); the information search decision (strategic image) more likely involves taking risks. Due to less clearly specified goals, retailers are likely to accept a wide variety of outcomes which is associated with risky decision making. Also, because of their entrepreneurial initiative and preference for bold action, they seek broad/diverse sources of information which are not

conventionally used in market analysis. They may try to generate new and innovative ideas through continual integration of new knowledge or reconfiguration of existing knowledge.

Overall, a market-oriented firms' search for new information for new product/market development is similar to Grant's (1996a) efficiency information integration typology; companies collect information in a cost efficient manner when their employees have common knowledge, vocabulary, and experiences. On the other hand, an entrepreneurship-oriented focus is on unknown and emerging future markets, so more differentiated and innovative information is sought. EO companies have innovative, risk taking, and proactive product development characteristics (Deshpande et al., 1993; Slater & Narver, 1995) that stimulate the quest for more diverse information. Lumpkin and Dess (2001) compare EO's proactiveness, which refers to firms' market opportunity seizing activities, and competitive aggressiveness, which refers to firms' reaction to current market competitive trends, examining with their impact on performance outcomes. One hundred twenty four executive-level respondents from 94 firms were selected from a commercial database of business marketing. The authors found that firms' proactive search of market opportunities have positive and strong impacts on sales growth, profitability, and return on sales while competitive aggressiveness is negatively related to sales growth. These results imply that EO's proactively searching for market opportunity is important as opposed to simply responding to current market trends.

In relating two market strategies (MO and EO) and employee information search behaviors, we argue that market orientation strategy's continuous market sensing of current market information is related to Grant's (1996a) efficiency information search behavior. Flexibility of information search behavior is reconfiguring existing information plus enlargement with new information. On a continuum, flexibility of information integration falls between

efficiency and scope. Because flexibility involves refining and extending already existing information while adding new information, we assume that such flexibility is related to both MO and EO. MO is somewhat related to flexibility while EO is also somewhat related to flexible information search behavior. Finally, entrepreneurship orientation's diverse information search is closely related to scope information search behavior. Thus, we hypothesized that:

H2: There is a positive relationship between market orientation/entrepreneurship orientation and the information search process.

H2a: Employees' perception of market orientation is positively related to the efficiency of information search.

H2b: Employees' perception of market orientation is positively related to the flexibility of information search.

H2c: Employees' perception of entrepreneurship orientation is positively related to the flexibility of information search.

H2d: Employees' perception of entrepreneurship orientation is positively related to the scope of information search.

Employee Empowerment: Does It Moderate the Relationship between Market Strategy and Information Search Behavior?

Information is the core factor for development of a new product line or new market. Gathering and analyzing information to assist in decision making is critical to a firm's innovative performance outcomes. Thus, understanding how firms enhance employee motivation to engage in new information search activities may be important. Previous studies reveal that creative employees have more innovative problem-solving styles. They are more self-driven, enthusiastic, and willing to search for information sources in the new product development process (Amabile, Conti, Coon, Lazenby, & Harron, 1996; Barron & Harrington, 1981; Cummings & Oldham, 1997). Employees with creative personalities are more attracted to complex jobs because these

jobs allow them to use a variety of knowledge and information, to have more freedom in completing their work, and to have less supervisory control over their activities (Amabile & Gryskiewicz, 1989; Baer, Oldham, and Cummings, 2003; Cummings & Oldham, 1997). Therefore, employee creativity is strongly related to information search behavior and firm management should focus on enhancing employee creativity.

The study of supportive leadership examines how supportive supervisors or team leaders improve the performance of their subordinates (Bass, Avolio, Jung, & Berson, 2003; Gerstner & Day 1997; Lynch, Eisenberger, & Armeli, 1999). Supportive supervisors are willing to help subordinates. They focus on enhancing relationships with subordinates through participatory decision making which reflects a strong perception of support to subordinates, and offers the motivation that results in high quality work. Supportive supervisors show concern for employees' feelings and needs, encourage them to voice their own concerns, and provide positive and informational feedback while cultivating subordinates' skill development (Deci & Ryan, 1987). Studies also find that when employees receive regular feedback on goal-related performance, their performance rises (Locke & Latham, 2002; Ludwig & Geller, 1997). In sum, supportive supervisors encourage subordinates' self-determination and initiative at work, increasing both their interest in work and their creativity.

Studies also examine how well supportive supervision works for different groups of employees. Many studies suggest that supportive supervision is effective for creative employees. Cummings (1978) suggests that a supportive leadership style is particularly effective for self-regulating work groups, such as R&D professionals (buyers/planners/product develop positions use R&D skills in their jobs) who need freedom of choice and autonomy in work and an atmosphere that encourages personal growth and development. Similarly, Glassman (1986)

comments that R&D managers are likely to set the direction for work, and consequently, are likely to take risks; thus the supportive management style is especially important for this group.

Since supervisory support provides employees' autonomy and self-confidence in their work, the supervisors empower employees to be independent decision makers. Empowerment is a social exchange-driven process which operates under a norm of reciprocity (Gouldner, 1960).It requires managers to release some power and control to subordinates and use cooperation in relating with their subordinates (Spreitzer, 1995). Due to delegated authority, subordinates feel empowered and exhibit proactive and autonomous decision making (Mayer, Davis, & Schoorman, 1995).

Spreitzer (1995) defined psychological empowerment in the workplace with 4 sub-factors: meaning (how important the job is to them), self-determination (autonomous decision making), competency (confidence to accomplish their job) and impact (their ability to influence on other in the work unit). While the author validates the construct, he suggests two consequences of empowerment, such as managerial effectiveness (the degree of a manager fulfills or exceeds the work role expectation) and innovative behaviors. Thus, more empowered employees have greater self-efficacy and they are likely to be innovative to achieve success. Spreitzer's (1995) study of mid- and low-level employees from industrial organizations found the two consequence factors to be significant. Chan et al., (2008) examined the employee empowerment process with five independent factors: two organizational factors such as decentralized structure and innovative culture and three supervisory supports such as resource, information, and social-political supports. They found that except for organizational structure, these factors are significantly related to subordinates' trust and this further leads to empowerment and organizational citizenship behavior. These results show that supervisory

support is a good predictor of employee empowerment and once employees are empowered, it motivates them to have extra roles for the organization beyond their responsibilities. Thus, while market strategies have a specific impact on employees' market information search, the degree of employee empowerment would change this relationship. We hypothesized that:

H3: There is a moderating effect of employee empowerment in the relationship between market strategy (market orientation/entrepreneurship orientation) and types of information search (efficiency/scope/flexibility).

Overall, empowered employees are more likely motivated to accept extra work and show highly innovative and creative work performance. Previous studies have shown that supervisors' supportive and non-controlling attitudes increase employees' autonomy and confidence in their work environment, because supportive supervisors show concern for employees' feelings and they give positive feedback on the subordinates' work (Cummings & Oldham, 1997; Deci & Ryan, 1987; Zhou, 2003). A supportive managerial style, which results in feelings of empowerment, helps subordinates to have increased intrinsic task motivation in their work role. As Spreitzer (1995) defined four factors of employee empowerment (meaning, competence, self-determination, and impact), empowered employees are proactive in their work responsibility. Due to their competence and self-determination, empowered employees are more likely involved with broad and diverse information search and to take risks in decision making. Feelings of empowerment release them from feeling constrained to use the companies' traditional rules or traditional information sources. Based on these previous studies, our study examines the importance of employee empowerment, in relation to retail buyers' information search behavior when developing new product lines or markets. While we propose that employees information search behavior is influenced by market strategies, we further examine whether employee empowerment strengthens/weakens the relationship between market strategies (MO/EO) and

information search behaviors (search in efficiency, breadth/diversity, flexibility). We now discuss how employee empowerment affects the relationship between retail buyers' information search behavior, especially as they develop new product lines or markets.

Thus, we assume that employee empowerment strengthens the relationship between entrepreneurship orientation and employees' search for various and innovative information while the relationship between market orientation and employees' search for efficient and routinely repeated information would be weakened by employee empowerment. Empowered employees, who are encouraged to have more confidence, autonomy, and creativity through supervisors' support, are likely to avoid repetitive traditional search methods or use of the same sources of information. Thus, we hypothesized that:

> **H3a**: The stronger the degree of employee empowerment, the weaker relationship between market orientation and the efficiency dimension of employee search behavior.
> **H3b**: The weaker the degree of employee empowerment, the stronger relationship between market orientation and the efficiency dimension of employee search behavior.
>
> **H3c**: The stronger the degree of employee empowerment, the stronger relationship between market orientation and the flexibility dimension of employee search behavior.
> **H3d**: The weaker the degree of employee empowerment, the weaker relationship between market orientation and the flexibility dimension of employee search behavior.
>
> **H3e**: The stronger the degree of employee empowerment, the stronger relationship between entrepreneurship orientation and the flexibility dimension of employee search behavior.
> **H3f**: The weaker the degree of employee empowerment, the weaker relationship between entrepreneurship orientation and the flexibility dimension of employee search behavior.
>
> **H3g**: The stronger the degree of employee empowerment, the stronger relationship between entrepreneurship orientation and the scope dimension of employee search behavior.
> **H3h**: The weaker the degree of employee empowerment, the weaker relationship between entrepreneurship orientation and the scope dimension of employee search behavior.

Information Search Behavior and Its Effects on Organizational Learning

Continuous learning and improvement are critical for company success. Since the goal for any business is to create an organizational culture and/or structure that maximize its ability to learn about a market, it is important to study how effectively a company learns about the customers, competitors, and/or market trends. According to March (1991), organizational learning starts for two different purposes: exploration of new possibilities or the exploitation of old certainties. Based on the firm's strategic purpose, the firm gathers information/knowledge and the firm's learning starts from that information. Researchers attempt to explain the importance of a learning culture in market oriented companies by emphasizing its' sustainable competitive advantage to the firm (Day, 1994; Dickson, 1996). Learning is also emphasized in the study of entrepreneurship orientation. Since entrepreneurship-oriented firms' innovativeness requires a continuous search for and extensive collection of information and knowledge, firms must be committed to learning. Several authors mention that in the study of entrepreneurship orientation and business performance, the way in which employees interpret and share newly collected information must be considered (Sinkula, 1994; Slater & Narver, 1995). Therefore, firms with an entrepreneurial competitive advantage also need to study employees' learning activities.

Among studies of employee learning activities, some scholars discuss the positive relationships between market orientation and organizational learning (Greenley, 1995; Kumar, Subramanian, & Yauger, 1998; Lockett & Littler, 1997). They state that market orientation is essential in organizational effectiveness, for both longer-term marketing success, and for superior business performance. A market oriented organizational culture leads to a higher level of organizational learning due to its emphasis on developing intelligence about customers,

competitors, and other channel members. As a result of MO's emphasis on the development of market intelligence, a market orientation is inherently a learning orientation (Kumar et. al., 1998).

Some authors propose that synergy from both MO and EO behaviors would increase companies' performance outcomes, because the entrepreneurial antecedents, such as innovation, proactive, and risk taking proclivity, have a positive relationship with market orientation, and thus create a learning culture through information acquisition, dissemination, and shared interpretation (Matsuno et al., 2002; Slater & Narver, 1995). The authors argue that companies should have both a market- and entrepreneurial-oriented culture, and that the two should be based on market needs and the firm's ability to engage in market information learning and more calculated risk taking activities. They added that strictly market oriented and current market focused companies may miss emerging market opportunities, while strictly entrepreneurial-oriented and technology development oriented companies may not maximize customer satisfaction.

As we just discussed, previous researchers focused on the complementary relationship of market orientation and entrepreneurial spirit on company performance, however, there is a lack of empirical testing on how the two types of strategies (MO and EO) influence organization learning behavior. To understand an organizations' ability and/or its approach to learn market trend information, we need to examine the relationship between firms' shared practices in information search methods and how the information helps firms to be capable of learning. Since each orientation strategy has different information gathering behaviors, it is assumed that employees interpret and learn from the collected information differently.

Yeung et al. (1999) explain that the rationales for companies' different learning styles are manifold, for example, there could be variation in business strategy and culture or variation in

resources and competitive constraints. The authors view that such diversity in rationale causes an organization to gather and use information differently to solve problems and ultimately lead them to develop their own competitive learning styles. Based on this logic, company learning style is classified into four typologies; benchmarking, continuous improvement, competency acquisition, and experimentation (Yeung et al., 1999). Companies try to meet customer needs by copying and/or benchmarking what other companies have done. These companies try to generate new ideas based on existing ideas or by discovering competitors' best practices. Companies that try to be experts or engage in continuous improvement seek to improve existing competencies; thus, the mastery of previous knowledge and practices is important. These two learning styles (benchmarking and continuous improvement) are involved in the refinement or extension of existing opportunities and referred to as exploitative learning (March, 1991). Companies try to explore new opportunities through experience such as learning new ideas, products, and processes by their own experimentation or through experience of others such as acquiring new competencies through training employees, borrowing competency through strategic alliances, or buying competency through recruitment. These two learning styles (experimentation and competency acquisition) are involved in exploring new possibilities to create a competitive advantage and are called explorative learning.

Van den Bosch, Volberda, and Boer (1999) attempt to explain that company choice of organizational learning style is defined by types of information collected and status of the market environment. They argue that company learning of new information and knowledge can be differentiated by Grant's (1996a) three types of information integration (efficiency, scope, and flexibility) and the status of market environments (stable/turbulent). They reasoned that firm learning is based on the market environment. If a market is stable, a firm's focus of knowledge

absorption is exploitative, such as refinement and extension of existing competency and in that case, efficiency of knowledge absorption is required. On the other hand, when a market is turbulent, the firm focuses on extensive absorption of knowledge (explorative) and the firm needs to exhibit the scope and the flexibility dimensions of knowledge absorption.

Based on Van den Bosch et al.'s (1999) proposal of different types of organizational learning in relationship with information types and market environment changes, we focus on the learning and information relationship more in detail. Organizations' collection of new information/knowledge is the main impetus for organizational learning. When a firm develops new products/markets based on the current market trends, the required information is not much different from the previous season's information. Use of previously existing and continuously accumulated information would be appropriate. Similar segments of consumers' needs and wants may require use of previously existing or slightly modified information. According to the image theory, risk averse decision making occurs where a decision maker's goal is clear or not much different from the current image. That is, if an organization's new information/knowledge is familiar to the company (employees), this leads the organization to have clear goals of their plan. Further, clear goals guide the organization to engage in risk-averse decision making when seeking new opportunities from the existing market (exploitative learning). In this case, development of new products and expansion into new markets is through incremental progress through benchmarking of others. To refine and extend existing knowledge, exploitative learning is more likely to focus on current market trends, which lead the firm to have clear short-term goals. Van den Bosch et al. (1999) comment that exploitative learning requires high efficiency but is limited in scope and flexibility. Since exploitative learning is less likely to lead to change, firms try to increase competitive advantage by turning their attention to increasing efficiency,

such as the standardization of procedures, heuristic problem solving, tighter control and discipline, risk-aversion, and the benchmarking of best practices (Hunter, 2003).

Conversely, when a company's strategic market/product development is targeting innovative and emerging markets, the company collects information/knowledge, which is radically different (diverse) from what they already have. As image theory explains, the image and goals, which are ambiguous and not clearly defined, drive them to accept variability around their future goals; thus, they prefer to take risky decision making to learn market information. Companies prefer to learn the information/knowledge, which is collected through in diverse manner, with the company's own experimentation. Companies attempt to create an innovative competitive advantage in this case.

Thus, we assume that efficiently updated information/knowledge, which is collected by similar routines from similar sources, results in exploitative learning. In addition, information collected in a flexible manner also results in exploitative learning. As discussed earlier, we assume that flexibility is placed between efficiency and scope on a continuum of information search behaviors. That is, in this intermediate position, flexible information search integrates both existing and new information. Companies learn through benchmarking or adoption of best practices in the marketplace and encourage employees to continuously improve their competencies or skills. In contrast, organizational search for a breadth of information encourages employees to take risks and leads to explorative organizational learning behavior. The flexible dimension of information search is also related to explorative learning because through flexible information search behavior, employees not only refine the existing information but also extend their search to obtain new knowledge or new competencies. The content of the information is new or sometimes information types are different than what they used previously. Companies

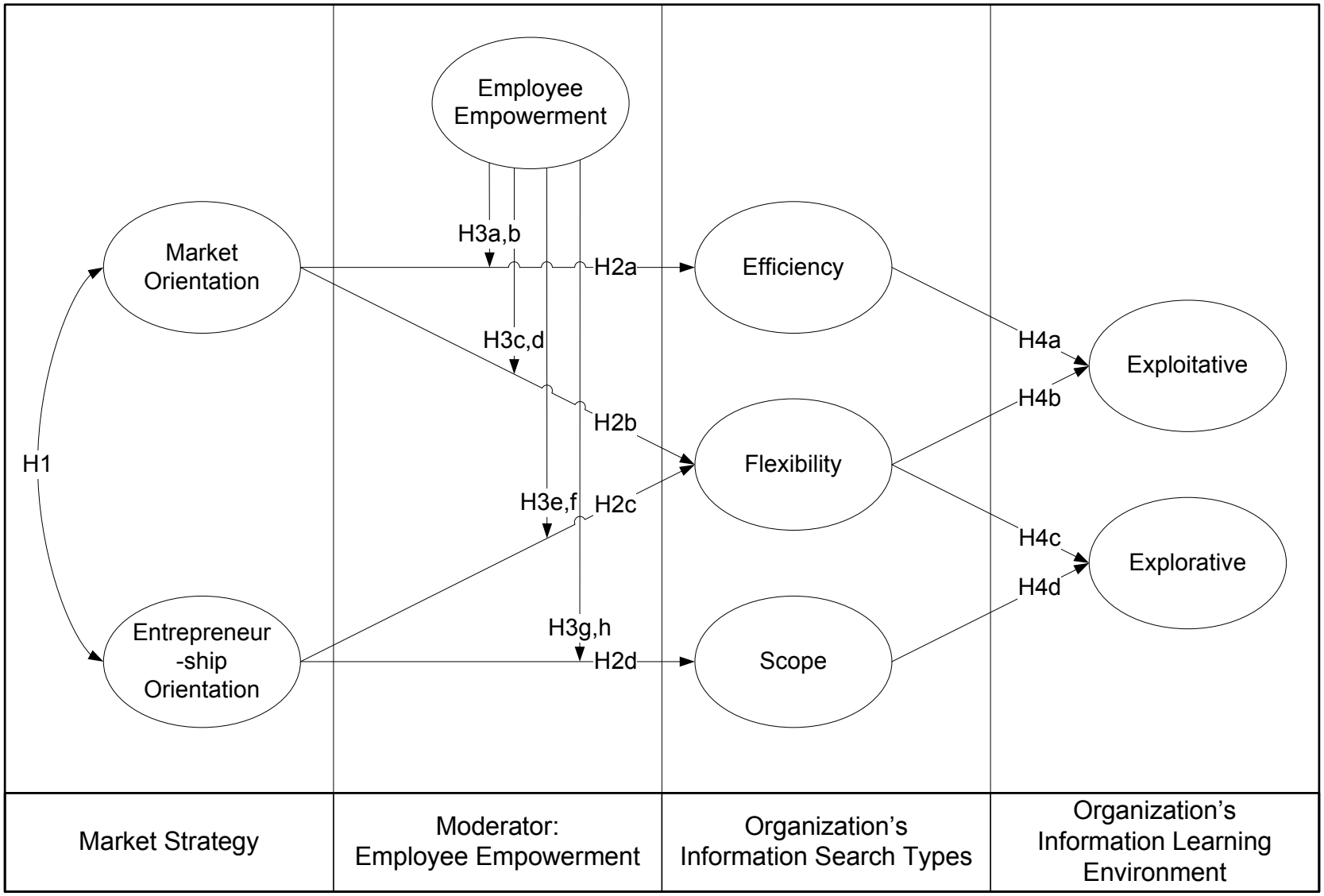
encourage employees to achieve new competitive skills through a company's own experimentation and training or companies could hire people who have such skills. Organizations that try to create a competitive advantage through major breakthroughs in competencies, technologies, and paradigms are engaged in explorative learning. Thus, we hypothesize that:

H4: There is a relationship between information search types and information learning styles.

> **H4a**: The efficiency of information search is positively related to the exploitative organizational learning.
>
> **H4b**: The flexibility of information search is positively related to the exploitative organizational learning.
>
> **H4c**: The flexibility of information search is positively related to the explorative organizational learning.
>
> **H4d**: The scope of information search is positively related to the explorative organizational learning.

A detailed model describing relationships of constructs, which are discussed in our study, is shown in Figure 2.

Figure 2. The Relationships of Market Strategies (MO/EO) on Information Search and Learning with Employee Empowerment



CHAPTER III

RESEARCH METHODS

The model described in previous section has proposed 1) to identify the relationship between two different market strategies (market orientation vs. entrepreneurship orientation) as perceived by retail employees; 2) to examine the relationship of those market strategies and information search types: efficiency, scope, and flexibility; 3) to test the moderating effects of supervisor's supportive supervision on the relationship between the perceived market strategies and information search types; and 4) to examine the relationship of information search types and different information learning types: exploitative vs. explorative.

In this section, we discuss the research design first, followed by a discussion of sample selection and data collection. Then, we discuss the questionnaire items that measure each of the major constructs in the proposed model. Finally, we describe how we analyze the data related to the proposed model.

Research Design

For this study, we first completed a qualitative phase and then a quantitative phase. Since there were no preexisting and validated measurements for one of the constructs in the proposed model, information search behaviors, we needed to develop appropriate items to measure information search types. Based on Grant's (1996a) research and other literature that provide fundamental ideas for information search (Allen, 1977; Gerstberger & Allen, 1968; Monge et al., 1985; Tushman & Katz, 1980), three different information search types were selected: efficient

dimension of information search, flexibility dimension of information search, and scope dimension of information search.

Therefore, in the qualitative phase, we conducted three one-on-one interviews with U.S. retail buyers. Our research helped us develop a total of 13 items for information search types: 6 items of efficient dimension of information search, 4 items of flexibility dimension of information search, and 3 items of scope dimension of information search. During the interviews, we probed for general ideas about each information search behavior to determine whether our items were appropriate and whether we overlooked additional items that would enhance the measurement. Also during the interviews, the appropriateness of item wording was assessed and revised if necessary. No additional measurement items were identified. After we revised the information search items, based on the interviews, we confirmed the revised items with other retail experts. More detailed information about development of the measures is discussed in the measurement section.

For the quantitative phase, we used online methods for soliciting and obtaining data. We used e-mail to relay the research process to potential respondents and a website for posting the survey and responding to survey questionnaires. Online survey methods have become widely accepted and, as shown by several studies, contain advantages over the traditional postal survey including shorter response times and lower costs (Griffis, Goldsby, & Cooper, 2003; Ilieva, Baron, & Healey, 2002; Philbrick, Smith, & Bart, 2010). Researchers also suggested that the use of a specifically addressed, personalized cover letter increases both traditional mail and e-mail response rates (Dillman, 1991; Schaefer & Dillamn, 1998).

Sample Selection and Data Collection Procedures

For this study, retail middle- to upper-level buyers, planners, or managers were contacted as the target population. This level of management was necessary to be able to get accurate responses to questions asking about the company's future plans or information search behaviors for developing new product lines. Several researchers (Atkinson, 1964; March & Shapira, 1987; McClelland, 1961), however warn that using only upper-level managers to test outcomes of organizational activities leads to biased results due to invariations in opinions and activities among a single group of employees. To minimize these biases, we selected middle- and/or upper-level managers from various departments in each organization, since middle level employees would also have adequate experience to respond to our survey.

The convenience sampling method was used to test the hypotheses for this study. Due to limited budget and time and considering the difficulty of compiling a sample group of middle- to upper-level managers in the retail industry, random sampling was inappropriate for this study. Even though the convenience sampling method maybe inappropriate for generating statistical inference about the population, it is useful in developing theories/hypotheses or the discovering of surrounding issues of the research subject (Schonlau, Fricker, & Elliott, 2002).

To request permission to conduct the survey with company employees, we collected the names of retail companies' corporate level human resource managers from one month's use of Hoover's online database. We randomly selected sixty retail companies' HR managers as our first contact persons. Simultaneously, alumni from a Midwestern university, who hold retail positions were contacted to refer us to their HR managers. When permission was secured, we asked the HR managers to distribute an e-mail to the potential respondents who were middle- to

upper-level buyers/planners/managers. In the first e-mail, we briefly introduced the study, as follows:

1. An introduction to and explanation of the importance of the study.
2. A request for the respondent's participation.
3. The website address of the online survey (http://www.surveymonkey.com/s.asp?u=93604750067).
4. An offer to mail a hard copy version of the survey if the respondent prefers that over the Web version.
5. A guarantee of confidentiality and pledge of anonymity during the data analysis stage.

One week after the first e-mail was distributed, the second e-mail was sent to the respondents to again solicit their assistance and encourage them to visit the website. The full cover letters appear in Appendix II.

Measurements

This study investigates how retail employees collect information in their merchandising operations, how they translate the information into company knowledge, and how the firms and employees try to learn and execute the information in their product/market development. This study assumes that these consequent activities would be different depending on whether the company is market oriented or entrepreneurship oriented as perceived by the firms' employees. To measure each construct, appropriate measurement was selected based on the construct. To identify demographic characteristics of our sample, at the end of the survey we asked respondents about the following demographic characteristics: product category with which they work, job title, number of years in retail business, number of years in buying/planning department, education, salary, gender and age.

Market Orientation

To measure the degree of companies' market orientation, we use a version of Jaworski and Kohli's (1993) scale. The authors describe market orientation as the process of organizational effort to implement the marketing concept; they further divide the scale into the three sub-scales of intelligence generation, intelligence dissemination and responsiveness. However, since the scale was developed based on a manufacturing sample, it needs to be modified for a retailing context. Generally, in a retail setting, generation and dissemination of market information is accomplished via interactions between stores and suppliers rather than the organizational unit. Also the retail buying department usually contacts customers and store personnel to obtain consumer purchasing behaviors and market trends for new product development in retailing while manufacturers do not have regular customer contacts. Huddleston and Good (1999), modified Jaworski and Kohli's (1993) items to appropriately fit a retailing sample. For example, in the study of Jaworski & Kohli (1993), an item states "In this business unit, we meet with customers at least once a year to find out products or services they will need in the future." Another item states "Individuals from our manufacturing department interact directly with customers to learn how to serve them better." Those items are reworded as "In this store, we meet with customers at least once a year to find out products or services they will need in the future." and "Individuals from our buying department interact directly with customers to learn how to serve them better." Also one item from intelligence generation which is not relevant to the retail industry is eliminated. The item is "We often talk with or survey those who can influence our end users' purchases (e.g., retailers, distributors)" (Huddleston & Good, 1999).

The market orientation scale consists of a series of items, using a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). Intelligence generation, intelligence dissemination,

and responsiveness are measured by nine, eight, and fourteen items, respectively. Jaworski and Kohli's (1993) original study tested the scale and it was reliable and valid with coefficient alphas ranging from .71 to .82. In the modified market orientation scale for the retail sample (Huddleston & Good 1999), the coefficient alphas range from .66 to .88, demonstrating acceptable reliability of this scale.

Entrepreneurship Orientation

To measure the degree of entrepreneurship orientation, we use the Covin and Slevin (1989) entrepreneurship scale. This scale consists of three items each of innovation proclivity, proactive orientation, and risk taking propensity using a 1 to 7 Likert-type scale (1 = conservative, 7 = entrepreneurial). The three items of innovation proclivity and two of the items of risk taking propensity were adopted from the studies of Miller and Friesen (1982) and Khandwalla (1977), originally. Covin and Slevin (1989) tested factorial validity and found that this scale is unidimensional (i.e., all items loaded above 0.5 on a single factor). They mention that even though the scale measures three different aspects of the firms' entrepreneurship posture, the items are empirically related as one construct. Their unidimensional scale reliability was good, with a coefficient alpha of .87. In our study, we use the 3 sub-factored entrepreneurship orientation construct in order to measure the latent entrepreneurship orientation variable. Using confirmatory factor analysis, we test the factorial validity of the entrepreneurship scale before testing the structural model.

Employee Empowerment

To measure employee empowerment at work, we use Oldham and Cummings' (1996) 8 items of supportive supervision and 4 items of non-controlling supervision. The items were rated on a seven-point Likert-type scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree). Using two sets of manufacturing employees as their sample, they found acceptable reliabilities of .86 for supportive supervision factor and .67 for non-controlling supervision. In their study, the authors specifically found an interaction effect of creativity-relevant personal characteristics, job complexity, employees' creativity at work, and creative performance ratings. When jobs were complex and supervisors showed supportive and non-controlling supervision, employees' creativity-relevant personal characteristics were strongly and positively related with creative performance ratings.

Information Search Behavior

Since we found no measure of information search behavior, we developed items to measure information integration based on Grant's (1996a) typology of Knowledge Integration. The author categorized three types of employee efforts to integrate new knowledge within an organizational system. These types are efficiency, flexibility, and scope. In our study, we developed employees' knowledge integration to reflect retail buyers' information integration in the development of new product lines. Retail buyers searching for market information for development of new product lines is considered as knowledge integration.

As Grant (1996a) and other authors (Allen, 1977; Gerstberger & Allen, 1968; Monge, et al., 1985; Tushman & Katz, 1980) suggest, efficiency of knowledge integration is employees' activities and organizational procedures which help employees to obtain knowledge in a cost

efficient manner. Grant (1996a) mentions several organizational characteristics that would increase efficiency in obtaining market information such as the level of employees' common knowledge, the frequency of the coordinated activity, and the degree of coordinated task performance. We developed items based on these previous studies' propositions. Efficiency of information search can be measured by employees' good understanding of information, departmental seamless coordination, employees' frequent formal and/or informal meetings, and use of communication technology; all factors would increase efficiency in information collection. Also if a product development department searches for and uses the same sources of information and the information is quickly dispersed among employees, increased efficiency of newly collected information is demonstrated.

Since flexibility is defined as a firm's capability to extend additional knowledge while reconfiguring currently existing knowledge, we developed items asking about employees' easy access to old and new knowledge. For example, an item measuring flexibility probes about departmental efforts of reconfiguring old information and using it along with new information in the development of new products.

In obtaining new knowledge or information about the market, if employees put effort into collecting it in an extensive and risky way, it is referred to as Scope. We developed items that probed whether the product department looks for various and specialized information sources as opposed to their traditional method; this effort would expand their information variety. In addition, if the product department shares information with other departments, it will expand their information scope.

Based on Grant's typology (Grant, 1996a), we developed the information search scale. During this process, we conducted one-on-one interviews with three retail buyers from different

retail organizations in order to clarify and verify the terms in the scale items based on their real work practices.

In clarifying the efficiency items, the three interviewees mostly agreed with the terms used in the items; however they suggested that we add some examples, to make some items clearer. For example, one of the questions measuring efficiency was, "There is a seamless coordination among the divisions that work together in developing/introducing a new product line"; thus to clarify what is meant by product development divisions, at the end of the item, we added "i.e., trend department, buying department, marketing department, etc." referring the different product line development divisions.

For items related to scope and flexibility, we specifically asked the interviewees what their traditional information sources were and what they would look for if they wanted to add totally new information. The three interviewees mentioned that they examine past sales records first when they need to develop product lines for the next season. In addition, their in-house and outside advertising staffs usually provide market analysis for the next season and they normally use this when they develop new product lines. Also, they look for their competitors' market trends and the competitors' buying power on regular basis. As new and specialized information sources, interviewees mentioned trade and scholarly journals or market research analysis.

One specific question we asked buyers was about the ease of communication with other divisions in the company. All three interviewees mentioned that they had difficulties in communication with buyers of other product lines. One of them said, they rarely share their information with other product lines developers. They discuss and brainstorm about market and product line trends within their product line but it is not shared with other product line buyers. Different buying divisions and buying offices make decisions separately. One of interviewees

felt that the lack of communication was problematic when developing lines for future markets. Another interviewee said that most of the product line development was based on top-down decision making; however, they have flexibility in discussing new trends and new product development. Their supervisors and CEO understand trends and innovation, however, when they actually develop new product lines, in the end, the decision mostly comes from the pressure from the CEO.

We revised the 13 items of information search items based on the three interviews and confirmed the revision with experts in retailing. As a result, we have 6 items of efficiency, 4 items of flexibility, and 3 items of scope to measure information search. The scales are 1 to 7 point Likert scales (1=Strongly Disagree, 7=Strongly Agree).

Organizational Learning

To measure organizational learning type, we use Yeung et al.'s (1999) scale. Organizational learning is divided into two types: explorative and exploitative. This scale was a six-point Likert scales (1 = to very little extent, 5 = to very large extent) with 0 for not applicable. In Yeung et al.'s study, the coefficient alpha for explorative learning is .75 and exploitative learning is .85, demonstrating scale reliability. In our study, to be consistent with other construct measurement, we adapt the scale to 1 to 7 points (1 = to very little extent, 7 = to very large extent).

Data Analysis

First, we examine demographic characteristics of the sample and reliability of each scale to understand the data set. Next we test any missing data, outliers, skewness and kurtosis of the

data distribution to check the normality of data distribution. Generally, use of Structural Equation Modeling (SEM) method requires random sampling of respondents and linearity of all relationships. Thus, assurance of the randomness of the missing data patterns and distribution of data normality check are required. Approaches to handle missing data and non-normal data are discussed.

Once we understand the psychometric properties of the data, we test the proposed theory with a structural equation model. We use Confirmatory Factor Analysis (CFA) to test the measurement model. Since we developed the information search scales for this study, we need to confirm convergent validity of those scales to establish whether the indicators specified to each underlying factor are well related to the factors. At the same time, we test the distinctiveness of the factors measured by different indicators by CFA. If CFA does not support the proposed model, then a re-specified model is tested.

If the confirmatory factor analysis shows appropriate support for the proposed model, then we test the structural equation model (SEM) (Anderson & Gerbing 1988, Kline 1998). In addition to testing the SEM, we test the moderating factor of employee empowerment (supportive supervision). Based on the means of employee empowerment, we divide the respondents as high and low groups. Multigroup SEM analysis helps to test the moderating effects by comparing constrained factor loading of both groups and unconstrained models. Chi-square difference tests are used for that. If overall fit indices of the unconstrained model are significantly improved as compared to the fit indices of the constrained model, then we can confirm that there is a significant effect of the moderator in this model.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this chapter is to report the results of statistical analysis and hypothesis testing, and to discuss the findings. We first describe the demographic characteristics of the sample and discuss about the screening process of the collected data. Then we report the results of reliability tests for questionnaire scales. We review the factor analysis results of employee empowerment to determine whether the supportive supervision measure is appropriately defined as we postulated. Since we developed the measures of information search behaviors (efficiency, flexibility, and scope) for this study, we discuss the second-order structure of this construct, information search behavior, as the higher order factor and its relationship with the three sub-factors. Reliability and validity of all constructs are tested with confirmatory factor analysis. Finally, we test the proposed structural equation model using AMOS maximum likelihood estimation and present and discuss the findings.

Demographic Characteristics of Sample

The purpose of this study is to examine how retail companies' market strategies (MO and EO), as perceived by firm employees, affect employee information search and learning behaviors in the development of new product lines. Generally, middle-to-upper level retail buyers, planners and product developers make decisions about the seeking of new trend information for the development of a new product line or a new market; therefore, we target this group of people for this study.

Because company protocol mandated that we rely on their Human Resource professionals to send the request for participation to appropriate employees at the designated positions, we cannot calculate a response rate. Gaining participation of an industry sample is difficult due to busy schedules and significant demands made on their time. In particular, retail consolidation and the downward business trends in retailing in recent years made data collection difficult. During the data collection period, there were mergers and acquisitions among retailers, which were disruptive to companies and many companies decline to participate because HR professionals were worried that morale might be low and stress might be high, affecting item responses to reflect negatively on the firms.

We also contacted retailing alumni, at a university located in the Midwestern US, inviting those who held the positions defined by our study to participate in the research. With all these difficulties, we managed to collect a sample of one hundred six retail employees. However four respondents failed to answer more than 50% of items, so we deleted those four, resulting in usable data of one hundred two respondents. When we contacted HR professionals, we asked them to distribute our questionnaire to the middle to upper level buyers, planners and product developers; our sample represents this group of people in retail industry. We chose this group of people for our study due to their knowledge about and involvement developing company strategies, goals, and decision making, which are suitable for our study purpose.

The profile of the sample is shown in Table 1. A majority of respondents worked with an apparel product category (45.1 percent) and about 5 percent of them worked in the automobile industry and the rest of the respondents worked with different product categories such as footwear, furniture, appliances, and media (books/music). Most (63.7 percent) of the respondents were retail product buyers, planners and product developers who had experience in new

product/market development. This statistic, along with the fact that the questionnaires were only distributed to employees with some experience with new products supports the appropriateness of our sample for the study.

Over half (54.9%) the sample had worked in retailing for 5 to 10 years and 11.8 percent worked up to 15 years and 15.7 percent worked less than 5 years. Close to half (45.1%) had spent 5 to 10 years in the product buying, planning, developing areas and 38.2 percent had worked in those areas for less than 5 years. Fifty one percent of respondents received the salary range of $50,000 to $65,000, 14.7 percent received $65,001 to $80,000. In 2009, expected median salary for merchandise buyer assistant in the US is $45,885 and a typical buyer III's median salary is $65,578 ("Salary Wizard," November 2009). These figures demonstrate that our sample's income is similar to that of middle level buyers in the US, which shows the sample fits the purpose of this study. Except not answered, females constituted about 75 percent of the sample and the males are about 19 percent. More than 85 percent of respondents received at least a university education. Most respondents' (85.3 percent) were 20 to 39 years old.

Table 1. Sample Profile (N = 102)

	N	%		N	%
Product Category			**Education**		
Clothing	46	45.1	Grade school	.	.
Food	2	2.0	Some high school	.	.
Footwear	3	2.9	High school diploma	.	.
Furniture	3	2.9	Some business technical school	6	5.9
Appliances	3	2.9	College degree	73	71.6
Electronics	2	2.0	Master's or higher degree	16	15.7
Others	21	20.6(a)			
Missing	22	21.6	Missing	7	6.9
Total	102	100	Total	102	100
Job Title			**Salary Range**		
Buyer	47	46.1	Below $50,000	13	12.7
Merchandise Planner	10	9.8	$50,000 - $65,000	52	51.0
Product Developer	8	7.8	$65,001 - $80,000	15	14.7
Others	9	8.8	$80,001 - $95,000	9	8.8
			$95,001 - $110,000	1	1.0
			Over $110,001	2	2.0
Missing	28	27.5	Missing	10	9.8
Total	102	100	Total	102	100
Total Years in Retail			**Sex**		
< 5years	16	15.7	Female	76	74.5
≤ 5 to < 10 years	56	54.9	Male	19	18.6
≤ 10 to < 15 years	12	11.8			
≤ 15 to < 20 years	3	2.9			
> 20 years	6	5.9			
Missing	9	8.8	Missing	7	6.9
Total	102	100	Total	102	100
Total Years in Buying/Planning area			**Age Range**		
			Under 20	.	.
< 5years	39	38.2	20-29	60	58.8
≤ 5 to < 10 years	46	45.1	30-39	27	26.5
≤ 10 to < 15 years	5	4.9	40-49	5	4.9
≤ 15 to < 20 years	3	2.9	50-59	2	2.0
> 20 years	1	1.0	60 and over	.	.
Missing	8	7.8	Missing	8	7.8
Total	102	100	Total	102	100

(a) Respondents who answered as others listed categories such as automobile, media (books/DVD/music), and health/beauty care products.

Data Preparation and Screening

Structural equation modeling (SEM) with the Maximum Likelihood (ML) estimation examines the pattern of relationships across the study variables. The screening of data, especially examining missing data and the normal data distribution is important because these can distort correlation/covariance matrices, the main matrices used in SEM, and may produce the misleading results. Thus, screening of the data before considering the theory-based model testing is critical.

For missing data pattern analysis, we found that 20 items among our 81 items had about 5 to 7% of missing values while the rest had less than 5% of missing values. In order to check whether the missing data pattern is at random, we ran Separate-Variance t-Tests to identify those 20 item's missing pattern with the remaining item (61items) through comparison of mean value of valid data and mean value of missing data. We found a small portion (only 8.8% out of those 20 items) of missing data yielded significant differences. Since it was tested at the .05 level, the differences were expected to vary by 5%, 8.8% is not much different than that. Due to the small difference, which could be the result of sampling variation, we determined this to be of marginal concern (Reckase, 2010). With care, we consider that our missing observations are mostly missing at random. Therefore, we employ the EM imputation method for further analysis. More detailed analysis is given in Appendix III.

For data normality analysis, we found that most of our items were negatively skewed. That is, our respondents answered on the higher end of the scale, we need to determine what extent of non-normality is acceptable for obtaining less biased estimation of parameters, standard errors, and chi-squared statistics. When the data are non-normal, there is overestimation of the chi-square statistic and underestimation of standard errors, which can lead to false rejection of

the model and inflated significance statistics, respectively (Gao, Mokhtarian, & Johnston, 2008; Muthén and Kaplan, 1985). However, Muthén and Kaplan (1985) and Hallow (1985) mention that when univariate skewness and kurtosis are not severe, the data are not much distorted. Since our data distribution is small to moderately non-normal, we assume that our non-normal data distribution is not a big issue in using SEM method for testing our model. More detailed explanation about analysis of data normality is given in Appendix IV.

Reliability Tests

In order to estimate the reliability of scales, we used Cronbach's Alpha. As presented in Table 2, the results of reliability tests indicated that 14 of the 15 sub-factors of the major constructs with multiple items achieve acceptable reliability, which were between .60 to .89, even though proactiveness (.65), employee authority (.66), efficiency (.66) and copiers/benchmarkers (.60) are less than we preferred. While acceptable reliability cutoff value of .60 (Nunnally, 1978) provides a minimum standard, a reliability of .70 is recommended as "adequate" for measuring internal consistency of the constructs (Kline, 1998), therefore when we deleted the most unreliable items in those four sub-constructs, we obtained .76 for proactiveness (one sub-factor of EO) and .74 for efficiency (Information Search). However, item deletion is not helpful to achieve adequate reliability for employee authority (Employee Empowerment), and deleting one item only slightly improves the reliability of copier/benchmarker (Exploitative Learning) to .63. The sub-construct with unacceptable reliability is innovativeness (EO), which is .47. When we deleted the item that reflects an emphasis on traditional/established products and services vs. technical/innovative products and services, the item reliability is increased to .62. The deleted items for all constructs are given in the table 2 as italicized.

The scale for Employee Empowerment factor in our study is based on Oldham and Cummings' (1996) supervisory support measure. This scale consists of supportive supervision and non-controlling supervision. However, as we discussed in the previous chapters, we assume that supportive supervision enhances employee confidence and autonomy which ultimately empowers employees in their decision making; we consider this factor as Employee Empowerment.

Table 2. Measurement Reliability

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
Market Orientation	5.48	0.96		
Intelligence Generation (IG): 9 items			.85	
1 In this firm, we meet with customers at least once a year to find out what products or services they will need in the future.	5.74	1.64		
2 Individuals from our buying department interact directly with customers to learn how to serve them better.	4.97	1.89		
3 In this firm we do a lot of in-house market research.	5.21	1.53		
4 We are slow to detect changes in our customers' product preferences. ®	5.44	1.46		
5 We poll customers at least once a year to assess the quality of our products and services.	5.33	1.52		
6 We collect industry information through informal means (e.g., lunch with sales representatives, talks with trade partners).	5.58	1.21		
7 In this firm, intelligence on our competitors is generated independently by several departments.	5.20	1.53		
8 We are slow to detect fundamental shifts in our industry (e.g., competition, technology, regulation). ®	5.41	1.39		
9 We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers.	5.32	1.56		
Intelligence Dissemination (ID): 8 items			.87	
1 A lot of informal "hall talk" in this firm concerns our competitors' tactics or strategies.	4.78	1.79		
2 We have meetings at least once a quarter to discuss market trends and developments.	5.64	1.57		
3 Marketing personnel in our firm spend time discussing customers' future needs with other functional departments.	5.40	1.47		
4 Our firm periodically circulates documents (e.g., reports, newsletters) that provide information on our customers.	5.23	1.73		
5 When something important happens in the market the whole business unit knows				

Table 2. Measurement Reliability (cont'd)

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
about it in a short period.				
6 Data on customer satisfaction are disseminated at all levels in this firm on a regular basis.	4.88	1.70		
7 There is minimal communication between marketing and buying departments concerning market development. ®	5.42	1.61		
8 When one department finds out something important about competitors, it is slow to alert other departments. ®	5.37	1.25		
<u>Responsiveness(R): 14 items</u>			.89	
1 It takes us forever to decide how to respond to our competitors' price changes. ®	6.02	1.24		
2 Principles of market segmentation drive new product selection efforts in this firm.	5.32	1.42		
3 For one reason or another we tend to ignore changes in our customers' product or service needs. ®	5.68	1.44		
4 We periodically review our product assortment to ensure that they are in line with what customers want.	6.07	1.30		
5 Our business plans are driven more by technological advances than by market research. ®	5.08	1.43		
6 Several departments get together periodically to plan a response to changes taking place in our business environment.	5.33	1.58		
7 The product lines we sell depend more on internal politics than real market needs. ®	5.52	1.52		
8 If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	5.48	1.63		
9 The activities of the different departments in this firm are well coordinated.	5.25	1.70		
10 Customer complaints fall on deaf ears in this firm. ®	6.24	0.97		
11 Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fashion. ®	5.25	1.50		
12 We are quick to respond to significant changes in our competitors' pricing structures.	5.59	1.44		

Table 2. Measurement Reliability (cont'd)

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
13 When we find out that customers are unhappy with the quality of our service, we take corrective action immediately.	5.76	1.17		
14 When we find that customers would like us to modify product selection or service, the departments involved make concerted efforts to do so.	5.64	1.22		
Entrepreneurship Orientation	4.10	1.17		
Innovativeness (I): 3 items			.47a	.62
1 *In general, the top managers of my firm favor…*	3.43	1.73		
A strong emphasis on the marketing of tried and true products or services (1)				
A strong emphasis on R&D, technological leadership, and innovations (7)				
2 How many new lines of products/services has your firm marketed in the past 5 years?	5.16	1.54		
No new lines of products/services (1)				
Very many new lines of products/services (7)				
3 Describe the nature of the new lines of products/services that your firm marketed in the past 5 years?	4.35	2.03		
Changes in product or service lines have been mostly of a minor nature (1)				
Changes in product or service lines have usually been quite dramatic (7)			.65	.76
Proactiveness (P): 3 items				
1 In dealing with its competitors, my firm…	4.24	1.88		
Typically responds to actions which competitors initiate (1)				
Typically initiates actions which competitors then respond to (7)	3.90	1.73		
2 In dealing with its competitors, my firm…				
Is very seldom the first business to introduce new products/services (1)				
Is very often the first business to introduce new products/services (7)	4.36	1.45		
3 *In dealing with its competitors, my firm…*				
Typically seeks to avoid competitive clashes, preferring a 'live-and-let-live' posture (1)				
Typically adopts a very competitive, 'undo-the-competitors' posture (7)				

Table 2. Measurement Reliability (cont'd)

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
Risk-Taking Propensity (RP): 3 items			.89	
1 In general, the top managers of my firm have…	3.74	1.54		
A strong proclivity for low-risk projects with normal and certain rates of return (1)				
A strong proclivity for high-risk projects with chances of very high returns (7)				
2 In general, the top managers of my firm believe that…	4.19	1.70		
Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior (1)				
Owing to the nature of the environment, bold, wide-ranging actions are necessary to achieve the firm's objectives (7)				
3 When confronted with decision-making situations involving uncertainty, my firm…	3.90	1.79		
Typically adopts a cautious, 'wait-and-see' posture in order to minimize the probability of making costly decisions (1)				
Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities (7)				
Employee Empowerment (Supportive Supervision)	5.40	0.65		
Supervisory Help (SH): 8 items			.85	
1 My supervisor helps me solve work-related problems.	5.80	1.19		
2 My supervisor encourages me to develop new skills.	5.72	1.20		
3 My supervisor keeps informed about how employees think and feel about things.	4.68	1.41		
4 My supervisor encourages employees to participate in important decisions.	5.65	1.22		
5 My supervisor praises good work.	5.52	1.21		
6 My supervisor encourages employees to speak up when they disagree with a decision.	5.53	1.10		
7 My supervisor refuses to explain his or her actions. ®	5.83	1.13		
8 My supervisor rewards me for good performance.	3.67	1.64		

Table 2. Measurement Reliability (cont'd)

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
Employee Authority (AU): 4 items			.66	No change
1 My supervisor always seems to be around checking on my work. ®	5.73	1.15		
2 My supervisor tells me what shall be done and how it shall be done. ®	5.26	1.40		
3 My supervisor never gives me a chance to make important decisions on my own. ®	5.44	1.64		
4 My supervisor leaves it up to me to decide how to go about doing my job.	5.47	1.01		
Information Search Behavior	5.09	0.89		
Efficiency (EFF): 6 items			.66	.74
1 Your department employees have a good understanding of the information needed to develop/introduce a new product line.	5.28	1.12		
2 There is a seamless coordination among the divisions that work together in developing/introducing a new product line (i.e., trend dept., buying dept., marketing dept. etc.).	4.64	1.49		
3 *Your department typically uses the same sources of information each time when developing/introducing a new product line.*	4.69	1.21		
4 Your department frequently holds formal and informal meetings when developing/introducing a new product line.	5.30	1.08		
5 Your department uses communication technology to reduce communication time among all those involved in developing/introducing a new product line (i.e., email, mobile phone, fax).	6.12	1.02		
6 Information is quickly dispersed to all who are involved in developing/introducing a new product line.	4.49	1.55		
Scope (SCO): 3 items			.78	
1 Your department looks at specialized information when developing/introducing a new product line (i.e., trade or scholarly journal, market research analysis).	5.08	1.41		
2 Your department seeks different types of information compared to the traditional buying process when developing/introducing a new product line (i.e., new vendor's history/merchandising supporting information, emerging market information, new scientific knowledge, etc.).	4.88	1.37		

Table 2. Measurement Reliability (cont'd)

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
3 Your department shares with and uses information generated by other units as necessary.	5.40	1.21		
Flexibility (FLEX): 4 items			.83	
1 Your department regularly reconfigures your department's old information (i.e., sales record, marketing analysis, etc.) to make it useful for development/introduction of a new product line.	5.09	1.46		
2 Your department regularly integrates new information (i.e., new market trends, new product development, new sourcing methods) into your department's old information to make it useful for development/introduction of a new product line.	5.43	1.32		
3 Your department regularly adopts new information for making decisions in development/introduction of a new product line.	4.91	1.41		
4 Your department has easy access to knowledge/information from other departments that could be useful for development/introduction of a new product line.	5.05	1.51		
Exploitative Organizational Learning	4.95	0.99		
Copiers/Benchmarkers (CB): 4 items			.60	.63
***1** Our department learns from others, entering a product or applying a process after it has been fully tested.*	4.44	1.36		
2 Our department learns by broadly scanning what other companies do.	4.66	1.28		
3 Our department learns by focusing our scanning on specific activities done by other companies.	5.07	1.22		
4 Our department primarily benchmarks competition, measuring progress against competitors' performance.	4.40	1.25		
Experts/Continuous Improvers (EC): 4 items			.87	
1 Our department masters new ideas before moving on to the next round.	4.52	1.40		
2 Our department upgrades the way that we do existing work until we have it right.	4.77	1.38		
3 Our department wants to be known as the best technical experts in our industry.	4.85	1.46		

Table 2. Measurement Reliability (cont'd)

Measurements	Mean	SD	Cronbach's α	α after unreliable item(s) deleted
4 Our department primarily benchmarks ourselves and measure progress against our previous performance.	5.36	1.03		
Explorative Organizational Learning	5.12	0.83		
Experiments/Innovators (EI): 4 items			.81	
1 Our department constantly seeks new ideas, even before old ones are fully implemented.	5.13	1.38		
2 Our department constantly seeks new ways to do work.	5.09	1.31		
3 Our department tries a lot of new ideas; we want to be known as experimenters within our industry.	4.73	1.63		
4 Our department wants to be the first in the market with a new process or product.	5.34	1.65		
Competent Workers/Skill Acquirers(CS): 4 items			.76	
1 Our department encourages individuals to acquire new competencies.	5.39	0.98		
2 Our department encourages teams to acquire competencies.	5.36	1.06		
3 Our department learns by hiring people from other companies who have skills we need.	4.77	1.41		
4 Learning is a critical part of our department strategy.	5.55	1.39		

a Cronbach's alpha is less than .60
Italicized items were excluded.
® indicates the item was reverse code

The Information Search Behavior Scale Validation

In order to measure information search behavior, we developed the scale based on Grant's (1996a) three typologies of knowledge integration and conducted exploratory in-depth one-on-one interviews with three retail buyers. From the exploratory research, we developed 13 items (6 for efficiency in information search, 3 for scope in information search, and 4 for flexibility in information search) but deleted 1 from the efficiency information search behavior due to unreliability of the item. To validate the scale, we test whether the lower-order factors (efficiency, scope, and flexibility) measure the more abstract higher-order factor of information search behavior. We examine the higher-order factor model for convergent validity and discriminant validity in order to assess the unidimensionality of the scale (Anderson and Gerbing, 1988; Kline, 1998). In other words, each indicator should load on only one factor and the measurement errors should be independent, and should not covary. The cross-loaded items were deleted one by one until an acceptable model fit to the data was accomplished.

In the initial higher-order factor model fit indices for the information search behavior scale show unacceptable fit (Chi-square = 159.28, df = 51, $p < .001$, CFI = .85, RMSEA = .15). The error variances of EFF4 (Efficiency item) was cross loaded with the measurement error terms of two items in Scope (SCO1, SCO2) and two other factor's disturbance variances of Scope (D2) and Flexibility (D3). This implies that there may be unobserved relationships between Efficiency, Scope and Flexibility and that the model should be identified. However, since the purpose of scale validation is to determine how well the items are measuring the related latent factors, it is reasonable to delete the cross loaded items at this point, so we deleted this item from further analysis. For the same reason, we deleted EFF1 due to its cross loadings with the measurement errors of other item (FLX3) and disturbances (D1, D3). Also, when looking at

the error variances, E5 (Scope item) and E9 (Flexibility item) are highly correlated. Since these two constructs were developed to measure a diversity and flexibility information search and we also assume these two constructs are related similarly with other variables in the model, it is reasonable to assume that these factors contributed to the common variance of the observed variables. Thus, we measure the covariance of these error variances. The final model showed improved model fits of higher-order factors (Chi-square = 39.15, df = 26, $p < .05$, CFI = .98, RMSEA = .07). The *Root Mean Square Error Approximation* (RMSEA), (around or less than.08 is favorable), and the *Comparative Fit Index* (CFI) (greater than .90 is favorable) revealed an acceptable fit for the model (Kline, 1998). It is reasonable to consider all three first-order factors of the Information Search Behavior scale to be unidimensional and they measure the same construct. Figure 3 and Table 3 show the results of the final model.

Figure 3. Higher-Order Factor Model: Information Search Behavior

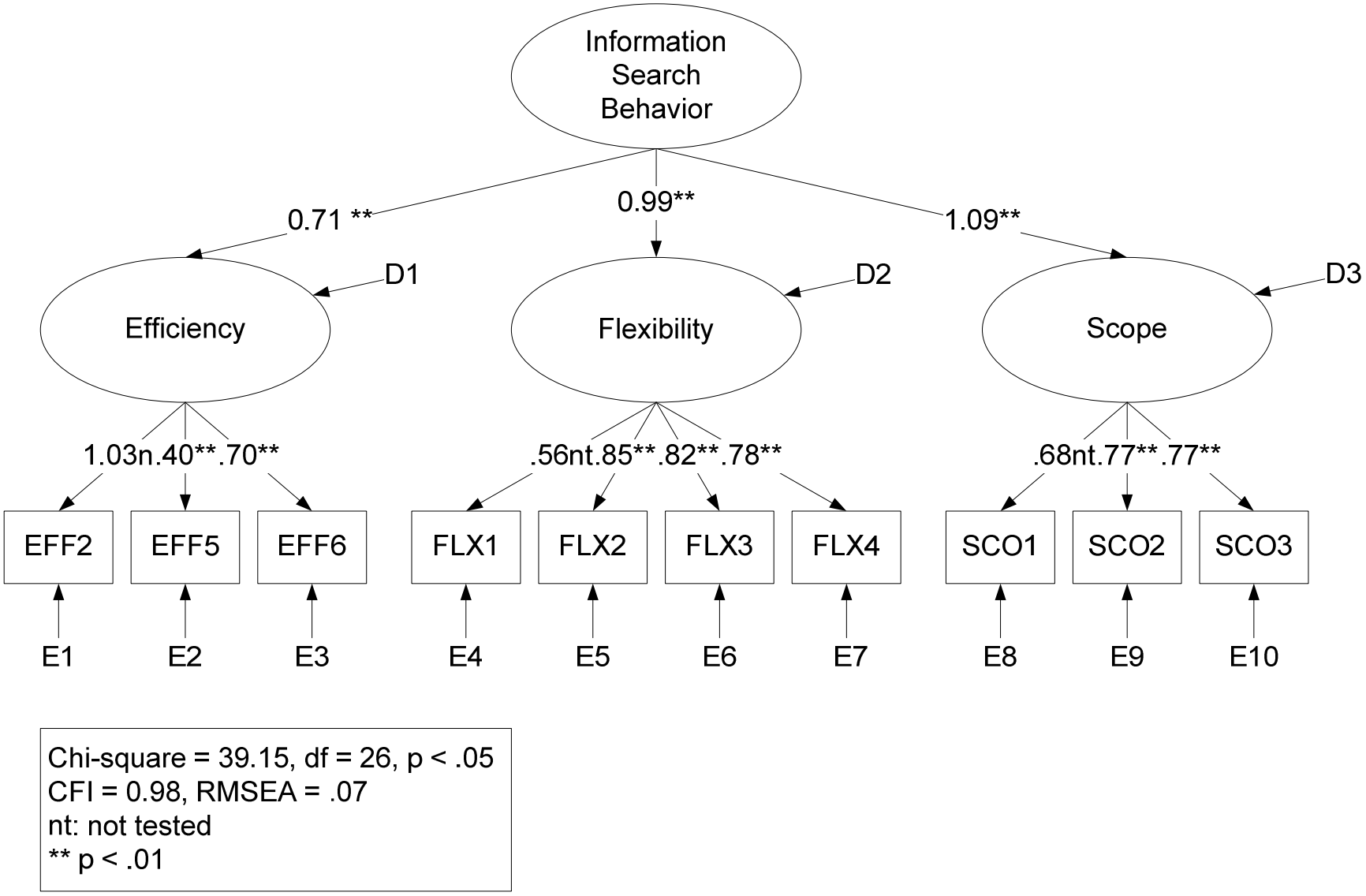


Table 3. Results for Higher-Order Factor Model: Information Search Behavior

	Standard Estimate	Critical Ratio		Standard Estimate	Critical Ratio
Path Coefficient			**Error Variance**		
Info Search → Efficiency	.71**	8.55	E1	-.06ns	-.63
Info Search → Flexibility	.99**	5.94	E2	0.84**	7.18
Info Search → Scope	1.09**	8.10	E3	0.51**	6.29
Efficiency → EFF2	1.03nt		E4	0.69**	7.06
Efficiency → EFF5	.40**	4.42	E5	0.28**	5.90
Efficiency → EFF6	.70**	7.48	E6	0.33**	5.89
Flexibility → FLX1	.56nt		E7	0.40**	6.64
Flexibility → FLX2	.85**	6.25	E8	0.54**	6.92
Flexibility → FLX3	.82**	6.02	E9	0.41**	6.55
Flexibility → FLX4	.78**	5.91	E10	0.40**	7.19
Scope → SCO1	.68nt				
Scope → SCO2	.77**	7.67	**Disturbance Variance**		
Scope → SCO3	.77**	7.51	D1	0.49**	4.42
			D2	0.01ns	.083
Error Covariance			D3	-.19*	-2.47
E3 ↔ E8	.29**	3.09			
E9 ↔ E6	-.52**	-4.58			
E3 ↔ E6	.39**	3.55			
E8 ↔ E7	-.31**	-2.92			
E2 ↔ E9	.37**	3.58			
E2 ↔ E5	.38**	3.51			
Goodness of Fit Summary Chi-square = 39.15, df = 26, $p < .05$ CFI = 0.98, RMSEA = .07					

nt: The parameter is not tested.
ns: The parameter estimate is not significant.
** $p < .01$, * $p < .05$

Confirmatory Factor Analysis: Convergent and Discriminant Validity

To evaluate the construct validity of measures before estimating the causal relationships by the simultaneous equation model, we performed Confirmatory Factor Analysis (CFA). Analysis of Moment Structure (AMOS) 17.0 was used for building the path diagram for presenting relationships between variables of MO, EO, Efficiency, Scope, Flexibility, Exploitative, and Explorative with their multiple observed variables. The Maximum Likelihood (ML) method was used for the estimation of parameters because its estimators are asymptotically unbiased, consistent, and efficient (Bollen, 1989).

The main purpose of CFA is to evaluate the relationship between the constructs and the nomological network of the measurement model, thus, we examine convergent and discriminant validities of 7 factors. The results of the CFA reveal a good fit of the model to the data (Chi-square = 183.37, df = 147, $p < .05$, CFI = .97, RMSEA = .05). The indicator parameters to measure the presumed construct ranges from .45 to .94 ($p < .01$), which shows convergent validity of each construct was achieved. In order to assess the discriminant validity, the estimated correlations of the factors that are used different constructs should not be excessively high ($r < .85$) (Kline, 1998). Although the CFA model fit was acceptable, the correlations between factors show that the factors between Scope and Flexibility of information search behavior and between Exploitative and Explorative organizational learning are poorly estimated but since they were near 1, we decided to further analyze it (Reckase, 2010). High correlations greater than .85 indicate that the factors are not distinct enough to be considered as different variables and one approach to solve this problem is considering the variables as one variable (Kline, 1998). Another approach to solve the inadequate discriminant validity is to find a reasonable correlation values from the previous literature and replace the correlation value in the CFA model and test

the model (Reckase, 2010). Since we have small sample size (N=102), it may not be large enough to obtain adequate support for the distinctiveness of the estimation of parameters, we try to find reasonable correlations between those factors.

For the Scope and Flexibility of information search behavior, there is no empirical study examining the correlation of these variables. Instead these variables' similar impacts in relation with other organizational variables are presumed in previous studies. In the study of Van den Bosch et al. (1999), the authors propose that organizational knowledge integration types are enhanced differently by the organization's infrastructural forms and stages of industrial development. While scope and flexibility of information integration are usually used in an innovative organization, efficiency of information integration is heightened in a functional organization. In addition, Van den Bosch, Van Wijk, and Volberda (2003) distinguish the three dimensions of knowledge/information based on the types of knowledge environment such as stable and turbulent knowledge environment. Accordingly, in the emerging industrial development stage, the knowledge environment is turbulent and scope and flexibility of information integration is appropriate while efficiency of information integration is appropriate for the mature industrial development stage where the knowledge environment is stable. These studies reveal that scope and flexibility are more likely correlated than that of efficiency and scope or efficiency and flexibility of information integration. Thus, we assume that the correlation between the factors scope and flexibility is higher than that of scope and efficiency or flexibility and efficiency. Our original results show the factor correlations between Efficiency ↔ Scope, Efficiency ↔ Flexibility, and Scope ↔ Flexibility are .83, .76 and 1.05 respectively, and we approximate for the correlation between scope and flexibility to be .83 as high as that of efficiency and scope.

For Exploitative and Explorative organizational learning, few studies (Hult, Ketchen Jr., & Nichols Jr., 2003; James, Brockbank, & Ulrich, 2001) have empirically tested its relationship with firms' antecedents (size, age, environment, structure, culture, and strategy) and consequences (performances) and only one study found its standardized phi value of 0.5 between organizational memory and organizational learning (Hanvanich et al., 2006). In their study, the authors assert that when the market and product innovation process is radical, firms need to find novel and innovative ideas and practice an explorative learning orientation. On the contrary, when the innovation process is adaptive-driven, its innovation is incremental and the firms' use of knowledge comes from organizational memory of stocked knowledge and information. These views are similar to organization's explorative and exploitative learning. Thus, we replace the factor correlation between exploitative and explorative as .50. Once we constrained those two values, the new CFA results show a good fit (Chi-square = 227.54, df = 153, $p < .001$, CFI = .94, RMSEA = .07). The results of CFA are shown in Table 4.

Table 4. Confirmatory Factor Analysis: Results for the Measurement Model

Path Coefficient	Standard Estimate	Critical Ratio	Standard Estimate (new)	Critical Ratio (new)
Market Orientation (MO) → Information Generation (IG)	.90nt		.90nt	
Market Orientation (MO) → Information Dissemination (ID)	.94**	15.28	.93**	15.23
Market Orientation (MO) → Responsiveness (R)	.92**	14.57	.92**	14.57
Entrepreneurship Orientation (EO) → Innovativeness (I)	.72nt		.73nt	
Entrepreneurship Orientation (EO) → Proactiveness (P)	.77**	6.06	.79**	6.07
Entrepreneurship Orientation (EO) → Risk-Taking Propensity (RP)	.80**	6.75	.81**	6.75
Information Search Behavior: Efficiency → EFF2	.97nt		.96nt	
Information Search Behavior: Efficiency → EFF5	.45**	4.61	.45**	4.67
Information Search Behavior: Efficiency → EFF6	.72**	8.28	.73**	9.00
Information Search Behavior: Scope → SCO1	.67nt		.72nt	
Information Search Behavior: Scope → SCO2	.79**	7.49	.81**	11.13
Information Search Behavior: Scope → SCO3	.78**	7.30	.73**	9.46
Information Search Behavior: Flexibility → FLX1	.58nt		.64nt	
Information Search Behavior: Flexibility → FLX2	.87**	6.51	.90**	13.35
Information Search Behavior: Flexibility → FLX3	.82**	6.23	.82**	11.07
Information Search Behavior: Flexibility → FLX4	.74**	5.91	.74**	9.48
Exploitative Organizational Learning → Copiers/Benchmarkers (CB)	.51nt		1.02nt	
Exploitative Organizational Learning → Experts/Continuous Improvers (EC)	.40**	3.75	.20*	2.42
Explorative Organizational Learning → Experiments/Innovators (EI)	.79nt		.81nt	
Explorative Organizational Learning → Competent/Skill Acquirers (CS)	.90**	9.00	.90**	11.63
Correlation Coefficients				
Market Orientation (MO) ↔ Entrepreneurship Orientation (EO)	.28*	2.24	.29*	2.34
Market Orientation (MO) ↔ Information Search B: Efficiency	.63**	4.99	.61**	5.54
Market Orientation (MO) ↔ Information Search B: Scope	.67**	4.46	.61**	6.33
Market Orientation (MO) ↔ Information Search B: Flexibility	.68**	4.20	.64**	6.77
Market Orientation (MO) ↔ Exploitative Org. Learning	.82**	4.01	.35**	4.24
Market Orientation (MO) ↔ Explorative Org. Learning	.73**	4.89	.72**	7.60
Entrepreneurship Orientation (EO) ↔ Information Search B: Efficiency	.07ns	0.64	.05ns	.46

Table 4. Confirmatory Factor Analysis: Results for the Measurement Model (cont'd)

Path Coefficient	Standard Estimate	Critical Ratio	Standard Estimate (new)	Critical Ratio (new)
Entrepreneurship Orientation (EO) ↔ Information Search B: Scope	.12ns	0.94	.02ns	.18
Entrepreneurship Orientation (EO) ↔ Information Search B: Flexibility	.26**	1.99	.33**	2.72
Entrepreneurship Orientation (EO) ↔ Exploitative Org. Learning	.17ns	0.87	.06ns	.55
Entrepreneurship Orientation (EO) ↔ Explorative Org. Learning	.34**	2.57	.38**	3.07
Information Search B: Efficiency ↔ Information Search B: Scope	.83**	5.05	.80**	9.31
Information Search B: Efficiency ↔ Information Search B: Flexibility	.76**	4.44	.68**	7.89
Information Search B: Efficiency ↔ Exploitative Org. Learning	.67**	3.45	.30*	3.15
Information Search B: Efficiency ↔ Explorative Org. Learning	.49**	3.81	.45**	4.47
Information Search B: Scope ↔ Information Search B: Flexibility	**1.05****	4.47	**.83**	fixed
Information Search B: Scope ↔ Exploitative Org. Learning	.83**	3.60	.49**	4.87
Information Search B: Scope ↔ Explorative Org. Learning	.61**	3.96	.49**	5.43
Information Search B: Flexibility ↔ Exploitative Org. Learning	.78**	3.30	.34**	4.05
Information Search B: Flexibility ↔ Explorative Org. Learning	.68**	4.00	.69**	10.06
Exploitative Org. Learning ↔ Explorative Org. Learning	**1.10****	4.37	**.50**	fixed
E9 ↔ E10	.37**	3.32	.41**	3.39
E11 ↔ E15	-.48**	-3.85	-.44**	-3.33
Goodness of Fit Summary Chi-square = 183.37, df = 147, p < .05, CFI = 0.97, RMSEA = .05 **Goodness of Fit Summary (Correlations between Scope and Flexibility and Exploitative and Explorative factors are fixed as .83 and .50, respectively.)** Chi-square = 227.54, df = 153, p < .001, CFI = 0.94, RMSEA = .07				

nt: The parameter is not tested. ** p < .01, * p < .05

Structural Equation Model: Hypotheses Testing

Our primary purpose was to determine how retail buyers' perception of their company's level of market orientation and entrepreneurship orientation affects other organizational behaviors leading to organizational learning. We hypothesized that these two market strategies have different effects on other organizational behavioral variables due to the different market foci of MO/EO. We conducted a hybrid model testing which consists of structural and measurement components to test the causal relationship between the variables (MO, EO, Efficiency, Scope, Flexibility, Exploitative Organizational Learning, and Explorative Organizational Learning). (See Figure 4). Results of measurement, overall model fit, and structural model tests are reported in Table 5. The results of SEM analyses for overall model fit using Maximum Likelihood estimation showed that the proposed model had a significant chi-square value, but it was considered an acceptable fit to the data based on CFI and RMSEA (Chi-square = 260.60, df = 155, $p < .001$, CFI = .91, RMSEA = .08). The Chi-square (155) of 260.60 is significant at the .001 level, which indicates that the fit of this model is significantly worse than if it were just identified. However, Chi-square statistic is sensitive to sample size, so we use the less sensitive value of Chi-square/df (260.60/155 = 1.68); a value of less than 3 is acceptable (Kline, 1998). The *Comparative Fit Index* (CFI), which indicates the relative overall fit of the proposed model, is .91 which means it is 91% better than that of the null model estimated with the same sample data. *Root Mean Square Error of Approximation* (RMSEA) indicates the amount of unexplained variance of residual; a smaller value is favorable (<.08). All results are significant except the factor loadings between entrepreneurship orientation (EO) and scope information search behavior (standardized parameter = .18, n.s.) and between efficiency and exploitative learning (standardized parameter = .23, n.s.).

Market Orientation vs. Entrepreneurship Orientation

H1*: Employees' perceived market orientation and employees' perceived entrepreneurship orientation are directly related.*

Each hypothesis was tested with the results of significance of each factor loading in the SEM analyses. The SEM results reveal that market orientation is positively correlated with entrepreneurship orientation ($\gamma = .31$, $p < .05$), thus Hypothesis 1 was supported. This result indicates that retail employees perceive market orientation and entrepreneurship orientation as somewhat related concepts. This is consistent with results of Matsuno et al. (2002) and Morris et al. (2007), both of which are empirical studies that found .468 for the path between EO to MO with a manufacturing firm sample and a correlation of 0.18 for the constructs with a non-profit organization sample, respectively. Matsuno et al. (2002) explained that EO's innovativeness resulted from the diffusion of information that is accomplished by the MO's organization-wide information sharing and utilization activities. Consistent with the previous results, our results demonstrate that both strategies' continuous market search activities in the collection of expressed and unexpressed market information, disseminating it, and responding to it, results in competitive advantages to the firms.

Employees' Information Search Behavior

H2: *There is a relationship between market orientation/entrepreneurship orientation and the information search process.*

H2a*: Employees' perception of market orientation is positively related to the efficiency of information search.*

H2b*: Employees' perception of market orientation is positively related to the flexibility of information search.*

H2c*: Employees' perception of entrepreneurship orientation is positively related to the flexibility of information search.*

***H2d**: Employees' perception of entrepreneurship orientation is positively related to the scope of information search.*

H2a and H2b proposed that employees' perception of market orientation has strong and positive effects on employees' efficiency and flexibility of information search behavior. As predicted, the results indicated that MO has a positive and significant effect on efficiency in information search behavior (standardized factor loading = .62, $p < .01$) and a positive and significant effect on flexibility in information search behavior (.19, $p < .05$), although the magnitude of the latter path is weaker than the former. Thus, hypotheses H2a, and H2b were supported.

Since the information search behavior measures were newly developed in our study, based on previous information integration literature (Grant, 1996a, b), there were no previous empirical results with which to compare ours. However, we postulated based on previous studies, such as Deshpande et al. (1993) and Tushman et al. (1997) which discuss MO's focus on expressed customer demands and our results support that market orientation is strongly related to the efficiency dimension of information search behavior. Recall that efficient information search behavior consists of familiarity with information/knowledge, frequent and coordinated pattern of activities regarding market information search, and a seamless communication structure. Market orientation's continuous market sensing activities about customers, competitors, and overall trends in the marketplace, yields employees who are familiar with the market information and this familiarity leads them to search information efficiently. We assumed that market oriented firms have clearly defined future plans/goals due to the firms' continuous effort to monitoring market needs. At the same time, market orientation's focus of constant information sensing and seamless communication structure provides increased common sense and common knowledge about the market, this helps developing strong group ties. In drawing rationale from image theory

and social network theory, market orientation yields firms with well defined future goals (images) and strong group ties, these lead the firm to avoid risk in their information search decisions. With strong interpersonal ties, people have little variation in their expectations and with clearly defined goals, risk taking is not desired.

A positive but less strong relationship was found between market orientation and the flexibility dimension of information search. As Grant (1996 a, b) described the flexibility of knowledge integration as a combination of old and new knowledge through refining, reconfiguring, and extending the knowledge, we view such flexibility is an intermediate position between search of existing information/knowledge and search of drastic new information/knowledge. While MO strategy helps firms to gather information in efficiently oriented manner, MO firms often bring new information to the firm; through consistent market search, executives in market orientated firms encourage employees to capture not only the expressed customer needs but also the unexpressed market needs, which may not be clearly known to the firm and/or to the market. Thus, MO strategy guides companies to extend search of new information and new knowledge through the flexible information search. Our results support our assumption that while MO is strongly related to the efficiency dimension of information search, market orientation also helps companies obtain flexible new market information. Market orientation directs firms to reconfigure the existing information/knowledge while adding new information.

H2c and H2d proposed that employees' perception of entrepreneurship orientation has positive effects on flexibility and scope in information search behavior. The results reveal that the standardized factor loading of EO on flexibility is .24 ($p < .05$), which demonstrates that EO has a positive effect on flexibility, while the standardized factor loading between EO and scope

is not significant (.18, n.s.). These show that retail entrepreneurs search for flexible dimension of information in their product/market development but not in diverse or innovatively new information. Hypothesis 2c was supported while H2d was not supported.

Previous studies (Deshpande et al., 1993; Lumpkin and Dess, 2001; Tushman et al., 1997) argue that EO is proactively involved with innovative market information. Thus, we hypothesized that entrepreneurship orientation's innovativeness, proactiveness, and risk taking preferences lead the firms to search for scope dimension of information which is diverse and radically innovative. However, based on our study results, we discover that entrepreneurship orientation's search of new information relies on from the extension of new and the reconfiguration of old information, which is the flexibility dimension of information search. Gathering of really new information is not related to the entrepreneurship orientation. One possible explanation is the characteristics of retail sample. Although retail employees in our sample perceive the company strategy as entrepreneurship oriented, the search of radically new and different sources of information (scope) may be unreliable or unrealistic.

Employee Empowerment: Moderating Effect on Information Search Behavior

H3*: There is a moderating effect of employee empowerment in the relationship between market strategy (market orientation/entrepreneurship orientation) and types of information search (efficiency/scope/flexibility).*

> ***H3a****: The greater the degree of employee empowerment, the lesser the positive impact of market orientation and the efficiency dimension of employee search behavior.*
> ***H3b****: The lesser the degree of employee empowerment, the greater the positive impact of market orientation and the efficiency dimension of employee search behavior.*

To test the moderating effects of employee empowerment on employees' information search behavior, we conducted a two-group comparison SEM analysis. Previous studies suggest that the group invariance of path coefficients should be tested by constraining the paths equal to

both groups then releasing a path constraint, one by one, to measure the group differences (Myers, Calantone, Page, & Taylor, 2000; Reynolds & Kaiser, 1990). We compared the relative fits with the Chi-square difference tests. If the fit of a model with equality-constrained loadings is significantly worse than that of the unconstrained model, then individual factor loadings should be compared across the groups to determine the extent that group membership moderates the paths (Kline, 1998).

We first divide the sample into two groups based on the mean value of the employee empowerment variable. The number of respondents in high employee empowerment group is 62 (the mean of employee empowerment ≥ 5.504) and the number of respondents in low employee empowerment group is 40. However, since the mean of this empowerment is very high (based on 1 to 7 scale), it is not appropriate to call the group name as low empowerment group. Thus, we call this group the less highly empowered group and compare differences of the high and less highly empowered groups. Initially, the moderating effect is tested based on the acceptable whole model with paths and measurements (Chi-square = 260.60, df = 155, $p < .001$, CFI = .91, RMSEA = .08). Then, we tested a path model with latent variables with cross-group constraints. All four path coefficients (MO→EFF, MO→FLEX, EO→SCOPE, and EO→FLEX) were constrained in order to compare the two groups and these constraints were released one by one based on Chi-square difference test results. Our results reveal that three constraints (MO→EFF, EO→SCOPE, and EO→FLEX) contributed to the inequality of the two groups (See Table 6 and Figure 4). Comparison of Chi-square differences in the four path constrained model and the MO→EFF path released model statistics show Chi-square difference of 5.15 (523.88 – 518.73 = 5.15) with 1 degree of freedom (314-313 = 1). The Chi-square difference result is significant at the .05 level. This shows employee empowerment moderates the effects between market

orientation and efficient search of information. Looking at the group differences between high and less high employee empowerment groups, the high employee empowerment group factor loading is .30 while the less high group factor loading is .81.

We hypothesized that the more empowered employees would have a weaker positive relationship between market orientation and the efficiency information search. Highly empowered employees' proactive and self-determined confidence feeling in their information search decision making are not fit to search of efficiency oriented information search. On the other hand, less empowered employees would have a stronger positive relationship between market orientation and the efficiency information search. That is, less highly empowered employees are more prone to efficient information search. Thus, hypotheses H3a and H3b are supported.

> ***H3c****: The greater the degree of employee empowerment, the greater the positive impact of market orientation and the flexibility dimension of employee search behavior.*
> ***H3d****: The lesser the degree of employee empowerment, the lesser the positive impact of market orientation and the flexibility dimension of employee search behavior.*

Likewise, the Chi-square difference test results of MO→FLEX with the moderating effect of employee empowerment is 10.50 (1df, $p < .01$) indicating that the group difference path released model is improved significantly from the model with four paths constrained. It shows the employee empowerment moderating effect exists. However, examining the group differences between highly and less highly empowered factor loadings, the high group is .08 while the less high group is .17. These findings reveal that the magnitudes between the two groups are different from our hypotheses. We assumed that the proactive and autonomous feelings of highly empowered employees would have a greater effect (than less highly empowered employees) on the relationship between MO and EO and their flexible search of old and new information.

Surprisingly, the results show an inverse relationship; the relationship between MO and flexible information search is greater for less highly empowered employees than for highly empowered employees. These results are not consistent with previous studies showing that empowered employees are more likely proactive, innovative, and creative (Mayer et al., 1995; Spreitzer, 1995; Chan et al., 2008). While empowerment gives a self-determined feeling, this is usually accompanied with additional responsibility. That is, due to delegated power, empowered employees receive increased responsibility and perhaps they feel stress from the pressure to demonstrate innovative and creative decision making (Hakimi, Van Knippenberg, and Giessner, 2010; Heathfield, 2010). Although the moderating magnitudes are different than we expected, our results show employee empowerment to be a moderating effect between market orientation and flexible information search. Thus, hypotheses H3c and H3d are partially supported.

> ***H3e****: The greater the degree of employee empowerment, the greater the positive impact of entrepreneurship orientation and the flexibility dimension of employee search behavior.*
> ***H3f****: The lesser the degree of employee empowerment, the lesser the positive impact of entrepreneurship orientation and the flexibility dimension of employee search behavior.*

The Chi-square difference test result of EO→FLEX is 3.42 (1df, ns), indicating that the group difference path released model is not improved from the model with four paths constrained. Employee empowerment does not moderate the relationship between entrepreneurship orientation and flexible information search behavior. The H3e and H3f are not supported. However, despite the fact that the high and less high employee empowerment groups are not significantly different, the factor loading for high empowered group is .20 while the factor loading for less high empowered group is .03, which is the same direction as we hypothesized; empowered employees are more likely involved with scope information search behavior and to take risks in decision making.

***H3g**: The greater the degree of employee empowerment, the greater the positive impact of entrepreneurship orientation and the scope dimension of employee search behavior.*
***H3h**: The lesser the degree of employee empowerment, the lesser the positive impact of entrepreneurship orientation and the scope dimension of employee search behavior.*

The Chi-square difference test result of EO→SCOPE is 5.62 (1df, $p < .05$), implying that employee empowerment does moderate the relationship between entrepreneurship orientation and diverse information search behavior (scope). However, the results were the inverse of what we expected. The path coefficient for the highly empowered group was .05 while the less highly empowered group was .30. We expected that the greater empowered employees with an entrepreneurship oriented business perception would have a stronger relationship with information search related to the scope dimension (diverse and innovatively new information search), but the results show the EO-Scope relationship is stronger for less highly empowered employees. Again, these results might be explained the accompanied responsibilities of empowerment. Highly empowered employees might have stronger responsibility than less highly empowered employees; this led them to search weakly in scope information dimension. Hypotheses H3g and H3h are partially supported.

Overall, employee empowerment moderating effects are found in the following relationships: 1) market orientation and efficiency, 2) market orientation and flexibility, and 3) entrepreneurship orientation and flexibility. Surprisingly, in all three cases, high employee empowerment provides less search of efficiency, flexibility information while less high employee empowerment leads them to search more in efficiency and flexibility information dimension. Appropriate employee empowerment is discussed in managerial implication in conclusion.

Organizational Learning

H4*: There is a relationship between information search types and information learning styles.*

> ***H4a****: The efficiency of information search is positively related to the exploitative organizational learning.*
>
> ***H4b****: The flexibility of information search is positively related to the exploitative organizational learning.*
>
> ***H4c****: The flexibility of information search is positively related to the explorative organizational learning.*
>
> ***H4d****: The scope of information search is positively related to the explorative organizational learning.*

Hypotheses 4 proposed that variation in employees' information search behavior leads to different types of organizational learning. More specifically, H4a and H4b presumed that organizations' exploitative learning, which consists of firms' routinized benchmarking and continuous incremental learning is suitable for efficiently collected information (H4a). Information collected in a flexible manner requires continuous learning and is also related to exploitative learning (H4b). However, our results show that there is no significant relationship between efficient information search behavior and exploitative organizational learning (.23, ns) while the flexible information search dimension is positively and significantly related to the exploitative organizational learning (.70, $p < .01$). Therefore, hypothesis H4a is not supported while H4b is supported. These results indicate that efficient information search, such as familiar information sources and routinized collection method, may not induce any organizational learning. These findings are contrary to Van den Bosch et al.'s (1999) proposition that efficiency in information search is closely related to exploitative learning's focus on cost competitive advantage. They mention that in absorbing (learning) of efficiency knowledge, routines and procedures that firms use to identify are assimilate and thus cost saving (economies of scales)

could occur. Hunter (2003) and Yeung et al.'s (1999) discussion of benchmarking and continuous improving learning environments as exploitative learning are not supported by our results. Probably, information collected in efficient manner is already perceived to the employees and such information does not require any learning effort. On the other hand, information collected in flexible manner, which is a balance of modifying old information while adding new information to that is appropriate to use of exploitative, continuous learning environment.

H4c and H4d hypothesized that explorative organizational learning, which consists of innovative experimentation and acquisition of new skills, is positively related to the scope and flexible information search dimensions. As we expected, scope (diverse and radically new) information is significantly and positively related to explorative learning (2.73, $p < .01$), so hypotheses H4d is supported; this supports Van den Bosch et al's (1999) proposition that company's innovative breakthroughs are closely related with explorative learning. However, contrary to our expectation and Van den Bosch et al.'s (1999) propositions, search of flexible information dimension is significantly negatively related to the explorative organizational learning (-2.29, $p < .05$). Since explorative learning is involved with risk and large variation in its success and failure of implementation, we possibly view this as the reason that, flexible information does not require such learning environment, thus, it is negatively related to the explorative learning. Thus, H4c is not supported.

Overall, market information searched in efficient manner does not need any organization learning since the information is familiar to the employees. Information collected in diverse and innovatively search requires explorative organizational learning due to innovative and originality of its information. Information searched in flexible manner is learned by exploitative learning such as benchmarking or incremental learning methods. However information search in flexible

manner does not require the explorative learning which usually involves with the firms' large and risky investment may not compensate the learning of flexible information.

Figure 4. Results of Structural Equation Model

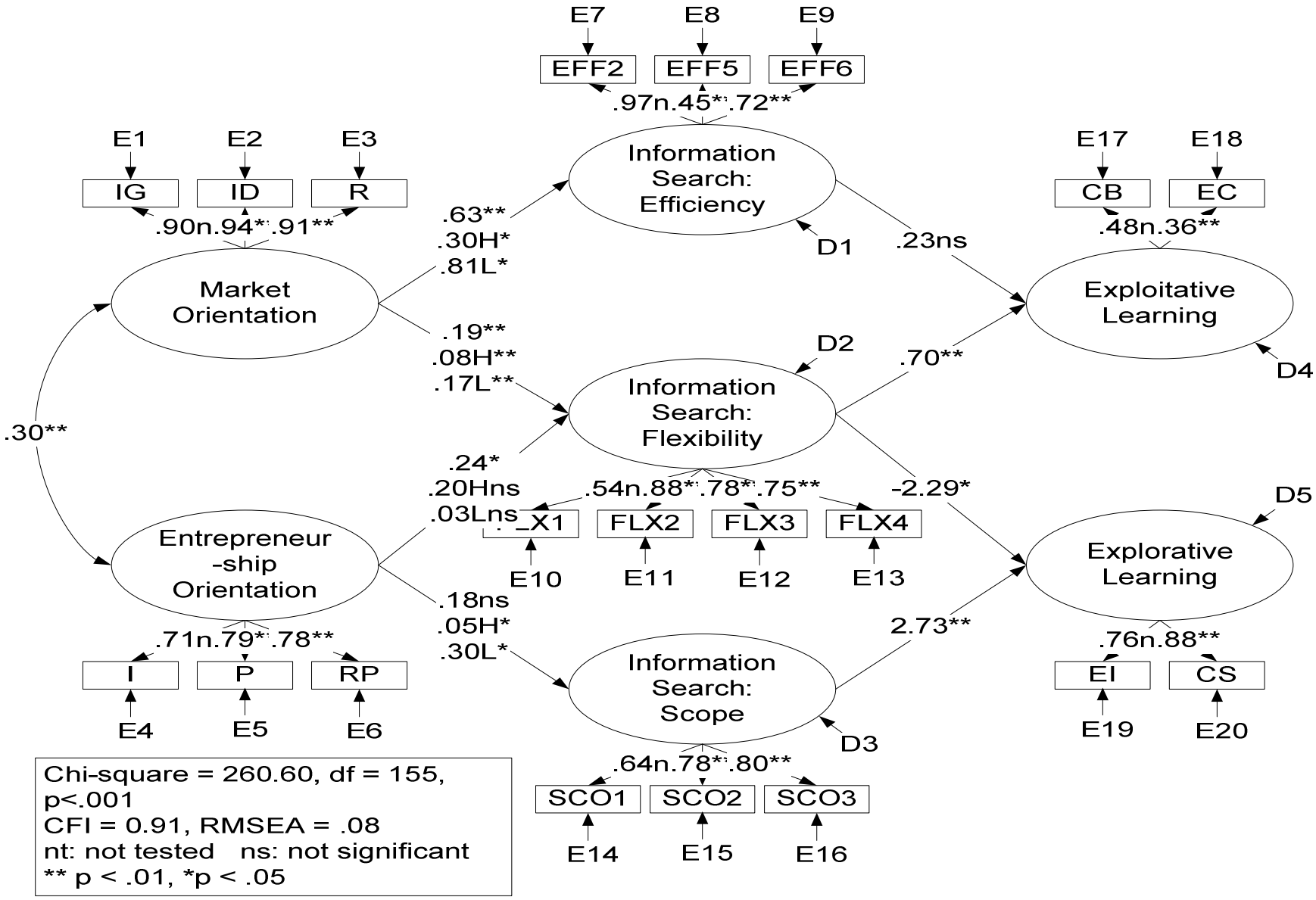


Table 5. Structural Equation Model: Results for the Hypotheses

	Standard Estimate	**Critical Ratio**		**Standard Estimate**	**Critical Ratio**
Path Coefficient			**Error Variance**		
MO → Efficiency	.62**	6.90	E1	0.19**	5.29
MO → Flexibility	.19*	2.59	E2	0.11**	3.66
EO → Scope	.18ns	1.43	E3	0.17**	4.88
EO → Flexibility	.24*	1.98	E4	0.49**	5.20
Efficiency → Exploitative	.23ns	1.06	E5	0.38**	3.78
Flexibility → Exploitative	.70**	2.71	E6	0.39**	3.99
Flexibility → Explorative	2.73**	2.67	E7	0.04ns	0.42
Scope → Explorative	-2.29*	-2.22	E8	0.80**	6.98
MO → IG	.90nt		E9	0.52**	6.02
MO → ID	.94**	15.24	E10	0.71**	6.89
MO → R	.91**	14.34	E11	0.22**	5.23
EO → I	.71nt		E12	0.39**	5.68
EO → P	.79**	5.90	E13	0.43**	6.37
EO → RP	.78**	6.71	E14	0.59**	6.45
EFF → EFF2	.98nt		E15	0.39**	5.58
EFF → EFF5	.44**	4.45	E16	0.35**	5.68
EFF → EFF6	.69**	7.20	E17	0.77**	5.00
FLEX → FLX1	.54nt		E18	0.87**	6.39
FLEX → FLX2	.88**	6.33	E19	0.42**	5.37
FLEX → FLX3	.78**	5.98	E20	0.22**	2.93
FLEX → FLX4	.75**	5.87			
SCOPE → SCO1	.64nt		**Disturbance Variances**		
SCOPE → SCO2	.78**	6.84	D1	0.62**	4.32
SCOPE → SCO3	.80**	6.82	D2	0.88**	2.93
EXI → CB	.48nt		D3	0.97**	3.55
EXI → EC	.36**	3.59	D4	0.41ns	.78
EXR → EI	.76nt		D5	0.33ns	1.63
EXR → CS	.88**	8.97			

Table 5. Structural Equation Model: Results for the Hypotheses (cont'd)

	Standard Estimate	**Critical Ratio**		**Standard Estimate**	**Critical Ratio**
Factor Covariance			**Error Variance**		
MO ↔ EO	.31**	2.42	E9 ↔ E14	.43**	3.68
			E15 ↔ E12	-.45**	-3.99
			E9 ↔ E12	.42**	3.56
			E14 ↔ E12	.34**	2.72
			Disturbance Covariance		
			D2 ↔ D3	.99**	4.12
			D4 ↔ D5	1.57**	3.44
Goodness of Fit Summary Chi-square = 260.60, df = 155, p < .001 CFI = 0.91, RMSEA = .08					

nt: The parameter is not tested.
ns: The parameter estimate is not significant.
** p < .01, * p < .05

Table 6. Moderating Effects: Chi-square Difference Tests

All 4 paths were constrained.	**Chi-square**	**df**			
a1 (high ememp MO→EFF) = b1 (low ememp MO→EFF) a2 (high ememp MO→FLEX) = b2 (low ememp MO→FLEX) a3 (high ememp EO→FLEX) = b3 (low ememp EO→FLEX) a4 (high ememp EO→SCOPE) = b4 (low ememp EO→SCOPE)	523.88	314			
Model equality was released. (Releasing one path constraint while constraining the others)			**Chi-square diff (df=1)**	**Path Coefficient**	**Standard Estimate**
H3a: a1(high ememp MO→EFF) ≠ b1 (low ememp MO→EFF) a2=b2, a3=b3, a4=b4	518.73	313	5.15*	MO → Efficiency	High: .30 Low: .81
H3b: a2(high ememp MO→FLEX) ≠ b2 (low ememp MO→FLEX) a1=b1, a3=b3, a4=b4	513.38	313	10.50**	MO → Flexibility	High: .08 Low: .17
H3c: a3(high ememp EO→FLEX) ≠ b3 (low ememp EO→FLEX) a1=b1, a2=b2, a4=b4	520.46	313	3.42ns	EO → Flexibility	High: .20 Low: .03
H3d: a4(high ememp EO→SCOPE) ≠ b4(low ememp EO→SCOPE) a1=b1, a2=b2, a3=b3	518.25	313	5.63*	EO → Scope	High: .05 Low: .30

*p < .05, **p < .01
ns: Not Significant

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this chapter is to summarize the study objectives, findings and provide implications from the research findings. First, we discuss the objectives of the study, findings, and contributions. We present managerial implications next, followed by a discussion of the study limitations and recommendations for future studies.

Summary of Research Objectives, Findings, and Contributions

Organizational strategy literature emphasizes the strong and positive impacts of market orientation and entrepreneurship orientation on organizational outcomes. Market orientation helps company employees continuously monitor market information and quickly react to market trend changes in an effort to satisfy consumer needs and yield increased firm performance. Entrepreneurship orientation encourages employees to use their proactive and risk-taking tendencies to seek information for fast changing and emerging market product initiatives. Previous research criticizes MO for only focusing on needs of current customers and using efficient information search behaviors to meet those needs. Likewise, previous research criticizes EO for focusing too heavily on radical information search behaviors that are not complimentary with consumer's needs. Therefore, our objective was to investigate more thoroughly how MO and EO are related to information search behaviors.

Because empowered employees have enhanced authority and freedom in their decision making, they are more likely than less empowered employees to search for diverse and

innovative information. Therefore, we tested whether employee empowerment moderated the relationship between MO/EO and information search behavior. Finally, we investigated the types of organizational learning environments that are related to information search behaviors. We argue that in order to absorb market/product information, firms must have appropriate learning environments based on the information types.

Our study findings have three important contributions to the literature in retail marketing and management. First, in this study, we developed scales to measure the 3 types of information search behavior by conducting a thorough literature search and conducting qualitative interviews with retail buyers. Our scale development was based on Grant's (1996a) conceptual constructs of knowledge integration types (efficiency, flexibility, and scope) and we framed the items relative to the search for market information in the development of new products and/or markets.

Second, we proposed and confirmed that there are differences between MO and EO in their information search behaviors. Previous studies have been inconsistent about the types of information searched for by MO and EO employees and the effects of market strategy on performance. Our results show that employees with a market orientation are strongly related to the efficiency dimension of information search behavior. MO employees also engage in flexibility search behavior but the relationship is less strong. Therefore, employees with a strong market orientation not only search for updates to existing information, they also extend their search by configuring and refining old information and adding some new information. Our results do not confirm the criticism that MO has a tendency toward information inertia (Grewal and Tansuhaj, 2001). Market orientation strategy collects new information, even if it is not radically or innovatively new; the information search does extend into new sources.

While previous research (Lumpkin and Dess, 1996) suggested that entrepreneurial employees would likely search for radical and innovative new information, we found no evidence of that tendency. As we also proposed, EO employees tend to engage in flexible information search behavior. This may be due to our retail sample characteristics. Since our sample did not consist of employees from any specialty or upscale stores, perhaps their target market does not require truly unusual and innovative merchandise. Also, unlike manufacturers, retailers have direct contact with customers and they need to satisfy customer needs in their product and market development decision making (Jones and Reynolds, 2006). Since excessive innovation is not always accepted by customers, our study confirms that there is no need for employees (at least in our sample) to use the scope dimension of information search. Perhaps we should not be too surprised that the scope dimension of information search was not significantly accessed by EO employees because, during our qualitative interviews, customer demands in relation to product/market development were discussed. One interviewee said that not all product lines are developed innovatively. For instance, most product lines prepare for their new season by updating previous products and only a small portion of the company's product lines are innovatively developed. Those innovatively developed lines usually require specialized information focusing on a special line and special target market (such as advanced sportswear product line or targeting young contemporary designer lines). This demonstrates that retail buyers collect information based more on efficiency or flexibility factors than the scope factor. Use of efficient information search method produces profits with less effort and lower budgets, and it might be the reason of why retailers commonly search for information in efficient ways (Abernathy, Dunlop, Hammond, and Weil, 1995). Also, use of flexible information search is necessary for them to differentiate themselves in the marketplace.

Finally, we extended our understanding of the organizational learning environment based on information types. Literatures in organizational learning discuss refinement and extension of existing competencies as exploitative learning with predictable learning outcomes. As Yeung et al. (1999) defined, we proposed that benchmarking of the company's or competitors'' best practices or continuously improving their competencies are necessary to internalize/learn information searched by using either efficient or flexible information search behaviors. We also proposed that learning about innovative, new alternatives through experiment or acquiring new competency is appropriate for flexible and scope information search behaviors. Our findings show that exploitative learning occurs when flexible information search behavior is implemented while explorative learning occurs when scope information search behavior is implemented. However, exploitative learning is not significantly related to efficiently collected information. Learning does not occur when employees routinely use existing information. Instead, information obtained by refinement of previously existing knowledge plus incrementally adapted (flexibility) information results in exploitative organizational learning. Although, our findings only support the relationship between scope and explorative organizational learning based on Van den Bosch et al. (1999) and Yeung et al.'s (1999) discussion, our efforts for connecting information search behaviors to learning styles help firms develop an appropriate learning environment. Firms need to think about how they can improve employee learning of dynamically changing market trends and our study would be groundwork in that consideration.

Managerial Implications

From beginning of this study, we were aware of two criticisms, one related to marketing orientation and the other related to entrepreneurship orientation: 1) does market orientation guide

firms to develop knowledge/information myopia and ultimately render firms ignorant of emerging market trends? 2) does entrepreneurship orientation drive firms to have radically innovative products that do not match with customer expressed needs and wants and increase the likelihood of firms to fail in the marketplace? In our study, especially in a retail setting, we found the answers to be no.

Since retailers' survival depends on responding to customers' needs and wants, providing a corresponding mix of products and services, and consequently increasing customers' purchasing decision, retailers like those in our sample should collect information that is not radically or innovatively new, but is incrementally or moderately new.

However, it should be noticed that although retailers' market orientation is strongly related to search of routine and incremental expansion of new information, routine information is not related to organizational learning. If retailers do not learn about fast changing market trends, they risk becoming obsolete. Thus, we suggest that search of efficient dimension of information should be balanced with collection of flexible information, such as information from other departments or new market research in order to meet actively changing market needs. Although, efficient information yields cost savings, learning of flexible information provides adaptive capabilities that are favorable in the rapidly changing marketplace.

Flexibly collected information requires benchmarking or continuously mastering additional competencies. Therefore, firm executives should provide data about the strongest competitors and/or data about the success cases within the company, in order to help employees learn the collected market information in a compatible manner.

Even though our sample did not yield a significant relationship between EO and scope information search behavior, scope was strongly related to explorative learning. If EO

employees would search for diverse and innovative information, which is really new to the company, an explorative learning environment would help employees adopt a culture of being industry leaders who continuously acquire new skills and competencies. If a company target an unfamiliar market or developing a new product which is not previously available in the company, perhaps market testing as an experiment is a suitable way to learn the market. Hiring skilled and knowledgeable people or having a strategic alliance with a specialized company are the necessary learning methods for obtaining radically innovative information.

Employee empowerment has been considered as an important concept in business due to their proactive and creative performances, and managers try to support and encourage employees by providing them more autonomous power and self-determined decision making in the work environment. Surprisingly, our study found that more empowered employees are less likely to use flexibility and scope information search behaviors, which is contrary to previous studies. Empowered employees are less likely to search for diverse and innovative information than less empowered employees. Perhaps empowered employees receive additional responsibilities due to delegated power, leading to more pressure/stress for employees (Hakimi et al., 2010; Heathfield, 2010). As a result, they avoid the more risky search for diverse and innovative information. Sharing the responsibilities with other employees may enhance the search of diverse information. Networking with other people or team decision making in search of new information, may reduce their own risks in obtaining radically new information. Offering a training class or mentoring/role modeling system in the workplace would assist employees in knowing where and how to search for innovative information.

Limitations and Recommendations for Future Studies

Generally small sample size causes issues with reliability of measurement, the shape of population distribution, and statistical power in testing parameter estimates. However, small sample size is often unavoidable, especially when collecting a corporate retail sample. A larger sample size decreases standard errors and provides more precise statistical parameter estimates for better results. Future retail studies should consider the possible sample size about how to obtain an appropriately large enough sample size for the model testing and parameter estimates.

Compared to market orientation, our results demonstrate that information search behavior is not clearly explained for entrepreneurship orientation. Since our sample was basically collected from Hoover's online database of retailers and contact through retail position alumni, these retailers are not small and independent retailers. It would be interesting to examine how small local retailers, who mostly work independently, behave in relation to information search and learning. Thus, we suggest investigating our proposed model with different retail settings, would bring more rich information to our understanding of the construct relationships.

Since the information search behavior scale is newly developed, based on previous knowledge integration literatures, further investigation of the scale or appropriate modification of the scale are required. Since our focus was retail buyers' information search behavior, information search in different industries or in different managerial positions may extend our understanding of this construct. Further, investigation of this construct with firms' other variables, such as monetary performance or success rate of new product/market development may enhance information search as a valuable construct in organizational study.

Along with market strategies, the moderating effects of employee empowerment on information search behaviors may require further study. Unexpectedly, our results show that

employee empowerment is not related to the risk taking or creative information search behavior. Instead more delegated power and freedom in decision making may burden employees and as a result, they are less likely search for diverse information. Future studies should examine how the added responsibility of empowerment affects other organizational variables.

APPENDICES

APPENDIX I: QUESTIONNAIRE

Please answer each question honestly and candidly. There are no right or wrong answers.
Please circle the number that reflects the most appropriate response for your company.

Section 1.		**Strongly Disagree**						**Strongly Agree**
1.	In this firm, we meet with customers at least once a year to find out what products or services they will need in the future.	1	2	3	4	5	6	7
2.	When we find out that customers are unhappy with the quality of our service, we take corrective action immediately.	1	2	3	4	5	6	7
3.	Marketing personnel in our firm spend time discussing customers' future needs with other functional departments.	1	2	3	4	5	6	7
4.	Our firm periodically circulates documents (e.g., reports, newsletters) that provide information on our customers.	1	2	3	4	5	6	7
5.	The activities of the different departments in this firm are well coordinated.	1	2	3	4	5	6	7
6.	We collect industry information through informal means (e.g., lunch with sales representatives, talks with trade partners).	1	2	3	4	5	6	7
7.	When we find that customers would like us to modify product selection or service, the departments involved make concerted efforts to do so.	1	2	3	4	5	6	7
8.	We are quick to respond to significant changes in our competitors' pricing structures.	1	2	3	4	5	6	7
9.	It takes us forever to decide how to respond to our competitors' price changes.	1	2	3	4	5	6	7
10.	Our business plans are driven more by technological advances than by market research.	1	2	3	4	5	6	7
11.	We have meetings at least once a quarter to discuss market trends and developments.	1	2	3	4	5	6	7
12.	We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers.	1	2	3	4	5	6	7
13.	Individuals from our buying department interact directly with customers to learn how to serve them better.	1	2	3	4	5	6	7
14.	In this firm, intelligence on our competitors is generated independently by several departments.	1	2	3	4	5	6	7
15.	Principles of market segmentation drive new product selection efforts in this firm.	1	2	3	4	5	6	7
16.	There is minimal communication between marketing and buying departments concerning market development.	1	2	3	4	5	6	7
17.	We are slow to detect changes in our customers' product preferences.	1	2	3	4	5	6	7
18.	The product lines we sell depend more on internal politics than real market needs.	1	2	3	4	5	6	7
19.	Data on customer satisfaction are disseminated at all levels in this firm on a regular basis.	1	2	3	4	5	6	7

20.	For one reason or another we tend to ignore changes in our customers' product or service needs.	1	2	3	4	5	6	7
21.	We periodically review our product assortment to ensure that they are in line with what customers want.	1	2	3	4	5	6	7
22.	A lot of informal "hall talk" in this firm concerns our competitors' tactics or strategies.	1	2	3	4	5	6	7
23.	Several departments get together periodically to plan a response to changes taking place in our business environment.	1	2	3	4	5	6	7
24.	In this firm we do a lot of in-house market research.	1	2	3	4	5	6	7
25.	If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	1	2	3	4	5	6	7
26.	We poll customers at least once a year to assess the quality of our products and services.	1	2	3	4	5	6	7
27.	Customer complaints fall on deaf ears in this firm.	1	2	3	4	5	6	7
28.	Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fashion.	1	2	3	4	5	6	7
29.	We are slow to detect fundamental shifts in our industry (e.g., competition, technology, regulation).	1	2	3	4	5	6	7
30.	When one department finds out something important about competitors, it is slow to alert other departments.	1	2	3	4	5	6	7
31.	When something important happens in the market the whole business unit knows about it in a short period.	1	2	3	4	5	6	7

Please read two different statements at each side and circle the number that reflects the most appropriate response for your company. (i.e., In Section 2, question #32, 6 means that your company has a stronger emphasis than scale 1, 2, 3, 4, and 5 on R&D, technological leadership, and innovation but less emphasis than scale 7.)

Section 2.

32.	In general, the top managers of my firm favor…							
	A strong emphasis on the marketing of tried and true products or services	1	2	3	4	5	6	7 A strong emphasis on R&D, technological leadership, and innovation.
33.	In dealing with its competitors, my firm…							
	Typically responds to actions which competitors initiate	1	2	3	4	5	6	7 Typically initiates actions which competitors then respond
34.	Describe the nature of the new lines of products/ services that your firm marketed in the past 5 years?							
	Changes in product or service lines have been	1	2	3	4	5	6	7 Changes in product or service lines have

	mostly a minor nature								usually been quite dramatic
35.	How many new lines of products/services has your firm marketed in the past 5 years?								
	No new lines of products/services	1	2	3	4	5	6	7	Very many new lines of products/services
36.	In dealing with its competitors, my firm…								
	Is very seldom the first business to introduce new products/services	1	2	3	4	5	6	7	Is very often the first business to introduce new products/services
37.	In general, the top managers of my firm believe that…								
	Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior	1	2	3	4	5	6	7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives
38.	In general, the top managers of my firm have…								
	A strong proclivity for low-risk projects with normal and certain rates of return	1	2	3	4	5	6	7	A strong proclivity for high-risk projects with chances of very high returns
39.	In dealing with its competitors, my firm…								
	Typically seeks to avoid competitive clashes, preferring a 'live-and-let-live' posture	1	2	3	4	5	6	7	Typically adopt a very competitive, 'undo-the-competitors' posture
40.	When confronted with decision-making situations involving uncertainty, my firm…								
	Typically adopts a cautious, 'wait-and-see' posture in order to minimize the probability of making costly decisions	1	2	3	4	5	6	7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities

Please circle the number that reflects the most appropriate response for your company.

Section 3.		**Strongly Disagree**						**Strongly Agree**
41.	My supervisor helps me solve work-related problems.	1	2	3	4	5	6	7
42.	My supervisor tells me what shall be done and how it shall be done.	1	2	3	4	5	6	7
43.	My supervisor keeps informed about how employees think and feel about things.	1	2	3	4	5	6	7
44.	My supervisor encourages employees to participate in important decisions.	1	2	3	4	5	6	7
45.	My supervisor leaves it up to me to decide how to go about doing my job.	1	2	3	4	5	6	7
46.	My supervisor encourages employees to speak up when they disagree with a decision.	1	2	3	4	5	6	7
47.	My supervisor refuses to explain his or her actions.	1	2	3	4	5	6	7
48.	My supervisor rewards me for good performance.	1	2	3	4	5	6	7
49.	My supervisor always seems to be around checking on my work.	1	2	3	4	5	6	7

50.	My supervisor encourages me to develop new skills.	1	2	3	4	5	6	7
51.	My supervisor never gives me a chance to make important decisions on my own.	1	2	3	4	5	6	7
52.	My supervisor praises good work.	1	2	3	4	5	6	7

When you read the following questions, assume that you are involved in developing/introducing a new product line.

Section 4.		**Strongly Disagree**						**Strongly Agree**
53.	Your department employees have a good understanding of the information needed to develop/introducing a new product line.	1	2	3	4	5	6	7
54.	Your department regularly reconfigures your department's old information (i.e., sales record, marketing analysis, etc.) to make it useful for development/introduction of a new product line.	1	2	3	4	5	6	7
55.	Your department typically uses the same sources of information each time when developing/introducing a new product line.	1	2	3	4	5	6	7
56.	Your department regularly adopts new information for making decisions in development/introduction of a new product line.	1	2	3	4	5	6	7
57.	Your department shares with and uses information generated by other units as necessary.	1	2	3	4	5	6	7
58.	Your department regularly integrates new information (i.e., new market trends, new product development, new sourcing methods) into your department's old information to make it useful for development/introduction of a new product line.	1	2	3	4	5	6	7
59.	Your department has easy access to knowledge/information from other departments that could be useful for development/introduction of a new product line.	1	2	3	4	5	6	7
60.	When developing/introducing a new product line (i.e., new vendor's history/merchandising supporting information, emerging market information, new scientific knowledge, etc.), your department seeks different types of information compared to the traditional buying process.	1	2	3	4	5	6	7
61.	Your department uses communication technology to reduce communication time among all those involved in developing/introducing a new product line (i.e., email, mobile phone, fax, etc.).	1	2	3	4	5	6	7
62.	There is a seamless coordination among the divisions that work together in developing/introducing a new product line (i.e., trend dept., buying dept., marketing dept., etc.).	1	2	3	4	5	6	7

63.	Information is quickly dispersed to all who are involved in developing/introducing a new product line**.**	1	2	3	4	5	6	7
64.	Your department frequently holds formal and informal meetings when developing/introducing a new product line.	1	2	3	4	5	6	7
65.	Your department looks at specialized information when developing/introducing a new product line (i.e., trade or scholarly journal, market research analysis, etc.).	1	2	3	4	5	6	7

To what extent do the following statements characterize your business?

Section 5.		**To very little extent**						**To very large extent**
66.	We constantly seek new ideas, even before old ones are fully implemented.	1	2	3	4	5	6	7
67.	We encourage individuals to acquire new competencies.	1	2	3	4	5	6	7
68.	We try a lot of new ideas; we want to be known as experimenters within our industry.	1	2	3	4	5	6	7
69.	We master new ideas before moving on to the next round.	1	2	3	4	5	6	7
70.	We upgrade the way that we do existing work until we have it right.	1	2	3	4	5	6	7
71.	We learn by broadly scanning what other companies do.	1	2	3	4	5	6	7
72.	We want to be known as the best technical experts in our industry.	1	2	3	4	5	6	7
73.	We want to be the first in the market with a new process or product.	1	2	3	4	5	6	7
74.	We learn from others, entering a product or applying a process after it has been fully tested.	1	2	3	4	5	6	7
75.	We primarily benchmark competition, measuring progress against competitors' performance.	1	2	3	4	5	6	7
76.	We learn by focusing our scanning on specific activities done by other companies.							
77.	We encourage teams to acquire competencies.	1	2	3	4	5	6	7
78.	Learning is a critical part of our business strategy.	1	2	3	4	5	6	7
79.	We constantly seek new ways to do work.	1	2	3	4	5	6	7
80.	We learn by hiring people from other companies who have skills we need.	1	2	3	4	5	6	7
81.	We primarily benchmark ourselves and measure progress against our previous performance.	1	2	3	4	5	6	7

Please check (√) your response.

Section 6.

82. Please indicate your company name. _____

83. Please check the product category with which you work.

_____ clothing
_____ food
_____ footwear
_____ furniture
_____ appliances
_____ electronics
Other: Please specify _____

84. What is your job title? _____

85. How many total years in retail business? _____

86. How many total years in buying/planning department? _____

87. Please check highest education level attained.

_____ grade school
_____ some high school
_____ high school diploma
_____ some business college or technical school
_____ college degree
_____ Master's or higher degree

88. Please check your salary range.

_____ below $50,000
_____ $50,000 - $65,000
_____ $65,001 - $80,000
_____ $80,001 - $95,000
_____ $95,001 - $110,000
_____ over $110,000

89. Please indicate your sex.

_____ female _____ male

90. Please check your age range.

_____ under 20
_____ 20-29
_____ 30-39
_____ 40-49
_____ 50-59
_____ 60 and over

APPENDIX II: COVER LETTERS

Dear Participants:

We are cordially requesting your partnership in a study of retail organizations, conducted by Michigan State University. The purpose of our survey is to gather information that will help retailers plan effective market intelligence. More specifically, we are trying to identify linkages between retailers' market strategies (market orientation & entrepreneurship orientation) and organizational risk taking and information assimilation. To achieve our goal, we need to collect data from middle- to upper-level buyers/product managers/product developers. Participation is voluntary, but your input is of great value to us. The questionnaire can usually be completed about 15 minutes.

Click on this link to go directly to the survey. Your responses are anonymous.
http://www.surveymonkey.com/s.asp?A=55756698E27787

If you are interested in learning more about our study or any questions about the study, you may contact Dr. Linda Good (goodl@msu.edu, 355-1282) or So Jung Lee (leesojun@msu.edu, 353-3877) in Retailing, Michigan State University. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this research project, you may contact – anonymously, if you wish – Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

You indicate your voluntary participation in this study by submitting the completed questionnaire online survey. Your assistance is greatly appreciated we thank your in advance for your time and attention. Good luck on your retail management career!

Sincerely,

Linda K. Good, Professor - Retailing
Phone: 517-355-1282 Fax: 517-352-1058
E-mail: goodl@msu.edu
112 Human Ecology Building
East Lansing, MI 48824-1030
Michigan State University

So Jung Lee, Ph.D. Candidate - Retailing
Phone: 519-393-9678
E-mail: leesojun@msu.edu
404 Human Ecology Building
East Lansing, MI 48824-1030
Michigan State University

Dear MSU Merchandising Management Alumni,

I am writing this letter to remind you about a survey that Dr. Good and I asked your involvement in completing a retailing survey about a week ago. If you have already completed the survey and voluntarily agreed and gained permission from your HR for the later sampling (second phase sampling), **Thank you**.

If you have not completed the survey, please go to the Internet survey link and complete the survey as soon as possible. Also as we explained about our second phase sampling procedure, please let us know if you would gain permission to conduct our second phase survey in your company, from HR or whoever in your company is appropriate (or providing us the contact name so we can contact them directly).

Click on this link to go directly to the survey. Your responses are anonymous.
http://www.surveymonkey.com/s.asp?A=55756698E27787

We count on your responses to help us in our study about retail corporate issues. We really appreciate for your voluntary participation.

Sincerely,

Linda K. Good, Professor - Retailing
Phone: 517-355-1282 Fax: 517-352-1058
E-mail: goodl@msu.edu
112 Human Ecology Building
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Michigan State University

So Jung Lee, Ph.D. Candidate - Retailing
Phone: 519-393-9678
E-mail: leesojun@msu.edu
404 Human Ecology Building
East Lansing, MI 48824-1030
Michigan State University

Date
Director of Human Resources
Central Division
(store name)
(address)

Dear Mr. (name):

Please find enclosed the packet of information I described per our recent phone conversation. This packet describes the study which examines the effects of organizational strategy and risk taking behavior on an organization's market information learning activities.

Please be assured that all data collected will be held in strictest confidence. (company name) will never be referred to and no individual data will be analyzed or reported. All data will be entered in the computer with numeric codes only and will be analyzed in aggregate with no personally identifiable information.

We are seeking your permission to conduct the study and to collect data and follow-up from the middle- to upper-level buyers in any division(s) of your company. The survey will take approximately 15 to 20 minutes to complete and there will be no risks involved with the participants. We are hopeful that results from this study can be incorporated into university curricula so that future retailing career employees have a better understanding of the retail organization environment. Likewise, study results will be provided to you so that they may be incorporated as needed by (name of company). It is our hope that the results of this study will provide appropriate information assimilation (integration and learning) for (company name) when development/introduction of new product lines based on market strategy and risk orientation. A better understanding of these corporate issues will hopefully have productive results for your company.

The first page of the packet explains the purpose, objectives, and time frame of the study. The rest of the packet consists of the questionnaire drafts to be used to collect the data. Please feel free to suggest additional items to be included in the questionnaire.

If you are interested in learning more about our study or any questions about the study, you may contact Dr. Linda Good in the Human Environment and Design Department (goodl@msu.edu, 355-1282) and So Jung Lee in Human Environment and Design (leesojun@msu.edu, 353-3877). If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this research project, you may contact – anonymously, if you wish – Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824. If you willing to participate our study please sign this form and returned to Dr. Linda Good by December 15, 2004. Your participation is greatly appreciated.

Your Signature: _____

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404 Human Ecology Building
East Lansing, MI 48824-1030
Michigan State University

Dear (store name) Managers:

We are writing this letter to respectfully ask for your help in completing a MSU retailing study. Participation is voluntary, but your input is of great value to us. However, you may choose not to participate at all, or may discontinue in any time without penalty or loss of benefits. The questionnaire can usually be completed within 15 or 20 minutes. When completed, this research project will provide information to your HR and market planning departments about how to optimize your work environment with the most-appropriate methods for information gathering and learning activities when development/introduction of new product lines.

(Company name) is cooperating with us in conducting this research and has approved our contact with you. However, no one in the company will see the forms that you fill out. We guarantee that your responses are confidential and will be analyzed only as a group, not on an individual basis, with no personally identifiable information. Your privacy will be protected to the maximum extent allowable by law.

Your part can be easily completed through an Internet-based survey at (http://www.surveymonkey.com/s.asp?A=55756698E27787). If you prefer to use an identical printed survey we will promptly send one to you through the postal service. Simply reply to this e-mail (leesojun@msu.edu) with the subject: **Requesting paper questionnaire**. Please include your **name**, the **name of your company**, and **the address to which you wish the questionnaire to be sent**.

If you are interested in learning more about our study or any questions about the study, you may contact Dr. Linda Good in the Human Environment and Design Department (goodl@msu.edu, 355-1282) and So Jung Lee in Human Environment and Design (leesojun@msu.edu, 353-3877). If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this research project, you may contact – anonymously, if you wish – Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

You indicate your voluntary participation in this study by submitting the completed questionnaire on-line or printed survey. Your assistance is greatly appreciated we thank your in advance for your time and attention. Good luck on your retail management career!

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APPENDIX III: MISSING DATA ANALYSES

Randomness of missing data pattern is one of the assumptions in testing the structural equation modeling (SEM). In order to determine whether the reasons underlying the missing data, are random or systematic, it is recommended to check if cases with missing values are systematically different from cases without missing values. To look at the extent of the missing data pattern, we first look at the univariate statistics of the missing number in each variable (See Table A1 in Appendix III).

The total number of continuous variables in our survey is 81 items from Q1 to Q81. Among 102 respondents, the table shows how many respondents did not answer each item. Each item's mean and standard deviation without the missing values are given in the table. The largest number of missing values in an item is 7 (6.9%), and there are 11 items which have 7 missing values. Kline (1998) suggests that when a variable's missing values is over 5%, the pattern of the missing variable needs to be examined. Among our 81 items, 61 had less than 5% missing values, which is acceptable. There were 20 items with missing values ranging from 5 to 7%, which according to Kline (1998) triggers further examination. Interestingly, the number of missing values increased as respondents reached the end of the survey. Those 20 items are items from Q60 to Q81 (Q62 and Q66 had less than 5% missing values). Five of them are information search behavior and the other 15 items are organizational learning (See the Table A2 in Appendix III). We assume that the respondents did not know the answers so they skipped the items. Or, perhaps the respondents were tired of answering the questionnaire at the end of the survey and chose not to complete the entire questionnaire.

In order to check whether the 20 items' (we call these indicator items) missing data pattern is completely at random (MCAR), missing at random (MAR), or neither of these, we conducted Little's missing completely at random (MCAR) test. When the pattern of missing

values is not related to any other variables, it is defined as missing completely at random (MCAR) and any data deletions or imputation methods can be used for missing values. At the bottom of the expectation-maximization (EM) estimations, Little's MCAR test results are given (See Table A3 in Appendix III). The null hypothesis for Little's MCAR test is rejected at the .05 level of significance (Chi-square = 1416.69, df = 1280, p = .004). The results show that the missing data pattern of our sample is not completely random, which is not uncommon, and further testing is required to determine whether it is missing at random (MAR) or not random at all.

MAR means that missing values are not randomly distributed across all observations but are randomly distributed within one or more subsamples such as missing more among females than males or missing values differ from non-missing values only by chance, which is unrelated to the respondents' true status on that variable (Kline, 1998). If this is the case, imputing the missing value with the estimated scores based on EM method is suggested (MarryAnn, 1997). In order to check whether the missing data pattern is at random, we ran Separate-Variance t-Tests to identify each indicator item's missing pattern with the remaining item through comparison of mean value of valid data and mean value of missing data.

The total number of individual t-Test results were summed to 1220 (20 missing indicator items × rest 61 items) and 107 (8.8%) significant t-Test results showed that the mean values were significantly different between valid and missing data (See Table A4 in Appendix III). For example, the group of people who answered Q61 and Q15 are a valid group while the group of people who skipped Q61 but answered Q15 are a missing group, so we compare the group differences on item Q15. That is, the valid group's mean value of Q15 is 5.41 while the missing

group's mean value of Q15 is 3.80. The remaining items, Q15, Q22, Q45, Q48, and Q55 show t-Test differences on more than 10 out of 20 indicators. Those items are;

Q15. Principles of market segmentation drive new product selection efforts in this firm.
Q22. A lot of informal "hall-talk" in this firm concerns our competitors' tactics or strategies.
Q45. My supervisor leaves it up to me to decide how to go about doing my job.
Q48. My supervisor rewards me for good performance.
Q55. Your department typically used the same sources of information each time when developing/introducing a new product line.

It reveals that the respondents who answered the lower values on these questions were likely to skip the indicator items. It is possible that respondents might have difficulty or do not know the answer in question Q55, so they might skip it. However, because we believe that the questions ask about general ideas of business operations and supervisor behavior, the terms in our questions should not cause any difficulty in our middle to upper level retail buyers, we determined that there is no clear reason for the missing pattern. Response fatigue, which causes low response rates due to time and effort involved in participating in a survey, may cause participants to lose interest and have a higher likelihood of skipping the questions at the end of the survey (Porter, Whitcomb, and Weitzer, 2004). Since the impact of the differences is marginal as the number of cases with missing data on the indicator items are only six to seven and differences were found in a small portion (8.8%) of missing values, thus, we conclude that only a small portion of missing data yielded significant differences, making this of marginal concern (Reckase, 2010). With care, we consider that our missing observations are mostly missing at random. Therefore, we employ the EM imputation method for further analysis.

Table A1. Univariate Statistics of Missing Data

Univariate Statistics

	N	Mean	Std. Deviation	Missing Count	Missing Percent	No. of Extremes (a) Low	No. of Extremes (a) High
Q1	102	5.7353	1.64061	0	.0	9	0
Q2	102	5.7647	1.17040	0	.0	1	0
Q3	102	5.4020	1.47090	0	.0	6	0
Q4	101	5.2376	1.73867	1	1.0	0	0
Q5	102	5.2549	1.70431	0	.0	0	0
Q6	100	5.5900	1.20684	2	2.0	2	0
Q7	101	5.6436	1.22951	1	1.0	1	0
Q8	101	5.5941	1.45037	1	1.0	7	0
Q9	102	6.0196	1.24264	0	.0	14	0
Q10	102	5.0784	1.43290	0	.0	12	0
Q11	102	5.6373	1.57196	0	.0	8	0
Q12	100	5.3400	1.56489	2	2.0	14	0
Q13	102	4.9706	1.89034	0	.0	0	0
Q14	100	5.2100	1.52617	2	2.0	1	0
Q15	101	5.3366	1.41617	1	1.0	0	0
Q16	102	5.4216	1.61329	0	.0	10	0
Q17	102	5.4118	1.38845	0	.0	12	0
Q18	102	5.5196	1.52036	0	.0	5	0
Q19	102	4.8824	1.69620	0	.0	5	0
Q20	102	5.6765	1.44306	0	.0	6	0
Q21	101	6.0792	1.30907	1	1.0	9	0
Q22	102	4.7843	1.79453	0	.0	5	0
Q23	101	5.3465	1.58389	1	1.0	9	0
Q24	101	5.2178	1.53365	1	1.0	3	0
Q25	100	5.5100	1.62987	2	2.0	0	0
Q26	101	5.3366	1.53152	1	1.0	15	0
Q27	102	6.2353	.96653	0	.0	7	0
Q28	102	5.2549	1.50040	0	.0	3	0
Q29	102	5.4412	1.45951	0	.0	13	0
Q30	102	5.3725	1.25012	0	.0	13	0
Q31	102	5.5686	1.41078	0	.0	5	0
Q32	102	3.4314	1.72638	0	.0	0	0
Q33	98	4.2347	1.90929	4	3.9	0	0
Q34	99	4.3333	2.06032	3	2.9	0	0
Q35	99	5.1616	1.56301	3	2.9	1	0
Q36	99	3.8990	1.75252	3	2.9	0	0
Q37	98	4.1939	1.73893	4	3.9	0	0
Q38	99	3.7273	1.56374	3	2.9	0	0
Q39	97	4.3402	1.47822	5	4.9	0	0
Q40	99	3.8990	1.81544	3	2.9	0	0
Q41	100	5.8000	1.19764	2	2.0	3	0
Q42	100	5.2600	1.41863	2	2.0	13	0

Table A1. Univariate Statistics of Missing Data (cont'd)

Univariate Statistics

	N	Mean	Std. Deviation	Missing Count	Missing Percent	No. of Extremes (a) Low	No. of Extremes (a) High
Q43	100	4.6800	1.42049	2	2.0	4	0
Q44	100	5.6500	1.23399	2	2.0	6	0
Q45	100	5.4700	1.01956	2	2.0	2	0
Q46	100	5.5300	1.11423	2	2.0	5	0
Q47	100	5.8300	1.13756	2	2.0	2	0
Q48	100	3.6700	1.65178	2	2.0	0	0
Q49	100	5.7300	1.16216	2	2.0	2	0
Q50	100	5.7200	1.21506	2	2.0	7	0
Q51	100	5.4400	1.65950	2	2.0	11	0
Q52	100	5.5200	1.21838	2	2.0	8	0
Q53	99	5.2828	1.13426	3	2.9	5	0
Q54	99	5.0909	1.47835	3	2.9	3	0
Q55	98	4.6939	1.23862	4	3.9	1	0
Q56	98	4.8980	1.43225	4	3.9	1	0
Q57	98	5.3878	1.22376	4	3.9	7	0
Q58	98	5.4184	1.33874	4	3.9	7	0
Q59	98	5.0306	1.52946	4	3.9	3	0
Q60	96	4.8854	1.39827	6	**5.9**	2	0
Q61	96	6.1354	1.04246	6	**5.9**	8	0
Q62	97	4.6392	1.51510	5	4.9	4	0
Q63	96	4.5104	1.56941	6	**5.9**	0	0
Q64	96	5.3125	1.10799	6	**5.9**	2	0
Q65	96	5.0937	1.44425	6	**5.9**	1	0
Q66	97	5.1340	1.41884	5	4.9	1	0
Q67	95	5.4000	1.01478	7	**6.9**	6	0
Q68	96	4.7292	1.67633	6	**5.9**	0	0
Q69	95	4.5263	1.45018	7	**6.9**	0	0
Q70	95	4.7789	1.43051	7	**6.9**	1	0
Q71	95	4.6632	1.32577	7	**6.9**	2	0
Q72	95	4.8632	1.51314	7	**6.9**	3	0
Q73	96	5.3438	1.69723	6	**5.9**	0	0
Q74	95	4.4421	1.41207	7	**6.9**	0	0
Q75	95	5.0737	1.26527	7	**6.9**	11	0
Q76	95	4.4000	1.29154	7	**6.9**	11	0
Q77	96	5.3646	1.09660	6	**5.9**	3	0
Q78	95	5.5789	1.41104	7	**6.9**	5	0
Q79	95	5.0947	1.35328	7	**6.9**	0	0
Q80	95	4.7895	1.45057	7	**6.9**	3	0
Q81	96	5.3646	1.05750	6	**5.9**	5	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR)

Table A2. Missing Items (More Than 5% of Respondents)

Q60	When developing/introducing a new product line (i.e., new vendor's history/merchandising supporting information, emerging market information, new scientific knowledge, etc.), your department seeks different types of information compared to the traditional buying process.
Q61	Your department uses communication technology to reduce communication time among all those involved in developing/introducing a new product line (i.e., email, mobile phone, fax, etc.).
Q63	Information is quickly dispersed to all who are involved in developing/introducing a new product line**.**
Q64	Your department frequently holds formal and informal meetings when developing/introducing a new product line.
Q65	Your department looks at specialized information when developing/introducing a new product line (i.e., trade or scholarly journal, market research analysis, etc.).
Q67	We encourage individuals to acquire new competencies.
Q68	We try a lot of new ideas; we want to be known as experimenters within our industry.
Q69	We master new ideas before moving on to the next round.
Q70	We upgrade the way that we do existing work until we have it right.
Q71	We learn by broadly scanning what other companies do.
Q72	We want to be known as the best technical experts in our industry.
Q73	We want to be the first in the market with a new process or product.
Q74	We learn from others, entering a product or applying a process after it has been fully tested.
Q75	We primarily benchmark competition, measuring progress against competitors' performance.
Q76	We learn by focusing our scanning on specific activities done by other companies.
Q77	We encourage teams to acquire competencies.
Q78	Learning is a critical part of our business strategy.
Q79	We constantly seek new ways to do work.
Q80	We learn by hiring people from other companies who have skills we need.
Q81	We primarily benchmark ourselves and measure progress against our previous performance.

Table A3. Testing for Missing Completely at Random: EM Estimated Means

EM Means (a,b)									
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
5.7353	5.7647	5.4020	5.2612	5.2549	5.6695	5.6290	5.5804	6.0196	5.0784
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
5.6373	5.3326	4.9706	5.2492	5.3192	5.4216	5.4118	5.5196	4.8824	5.6765
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
6.0962	4.7843	5.3509	5.2082	5.5070	5.3437	6.2353	5.2549	5.4412	5.3725
Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
5.5686	3.4314	4.2239	4.4192	5.1810	3.9803	4.2773	3.7724	4.3538	3.9352
Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50
5.8223	5.2531	4.6981	5.6457	5.4439	5.5393	5.8132	3.7045	5.7292	5.7237
Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60
5.4371	5.5267	5.3254	5.1363	4.6390	4.8951	5.4040	5.4130	5.0412	4.8717
Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70
6.1140	4.6424	4.5031	5.3322	5.0511	5.1492	5.3714	4.8056	4.6442	4.8849
Q71	Q72	Q73	Q74	Q75	Q76	Q77	Q78	Q79	Q80
4.6044	5.0311	5.4121	4.4376	5.0277	4.4424	5.4017	5.6253	5.1813	4.7426
Q81									
5.4223									

a. Little's MCAR test: Chi-Square = 1416.686, DF = 1280, Sig. = .004

b. The EM algorithm failed to converge in 25 iterations.

Table A4. Separate-Variance t-Tests: Missing Value Analysis

Remaining Items	Mean	Indicator Items						
		Q60	Q61	Q63	Q64	Q65	Q67	Q68
Q15. Principles of market segmentation drive new product selection efforts in this firm.	M(V) M(M)	5.41 3.80		5.43 3.83	5.43 3.83	5.43 3.83	5.41 4.17	5.41 4.17
Q22. A lot of informal "hall talk" in this firm concerns our competitors' tactics or strategies.	M(V) M(M)	4.97 1.83	4.94 2.33	4.94 2.33	4.94 2.33	4.94 2.33	4.97 2.29	4.93 2.50
Q25. If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	M(V) M(M)		5.64 3.50	5.63 3.67	5.63 3.67	5.63 3.67		
Q37. In general, the top managers of my firm believe that… Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior (1) Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives (7)	M(V) M(M)							4.26 3.17
Q42. My supervisor tells me what shall be done and how it shall be done.	M(V) M(M)							5.22 6.25
Q45. My supervisor leaves it up to me to decide how to go about doing my job.	M(V) M(M)						5.42 6.40	5.43 6.50
Q46. My supervisor encourages employees to speak up when they disagree with a decision.	M(V) M(M)							5.49 6.50
Q48. My supervisor rewards me for good performance.	M(V) M(M)						3.55 6.00	3.58 5.75
Q53. Your department employees have a good understanding of the information needed to develop/introducing a new product line.	M(V) M(M)							5.24 6.67
Q55. Your department typically uses the same sources of information each time when developing/introducing a new product line.	M(V) M(M)	4.73 3.00					4.74 3.33	
Q56. Your department regularly adopts new information for making decisions in development/introduction of a new product line.	M(V) M(M)		4.92 4.00					
Q57. Your department shares with and uses information generated by other units as necessary.	M(V) M(M)		5.40 5.00					

Table A4. Separate-Variance t-Tests: Missing Value Analysis (cont'd)

Remaining Items	Mean	Indicator Items						
		Q60	Q61	Q63	Q64	Q65	Q67	Q68
Q58. Your department regularly integrates new information (i.e., new market trends, new product development, new sourcing methods) into your department's old information to make it useful for development/introduction of a new product line.	M(V) M(M)		5.45 4.00	5.45 4.00	5.45 4.00	5.45 4.00		
Q62. There is a seamless coordination among the divisions that work together in developing/introducing a new product line (i.e., trend dept., buying dept., marketing dept., etc.).	M(V) M(M)							

Indicator Items: Missing Data ≥ 5 %.
M(V): Mean (Valid), M(M): Mean (Missing)
Bolded items show more than ten t-Test result differences between mean of valid group (M(V)) and mean of missing group (M(M)).
All reported mean values are significantly different at $p < .05$.

Table A4. Separate-Variance t-Tests: Missing Value Analysis (cont'd)

Remaining Items	Mean	Indicator Items						
		Q69	Q70	Q71	Q72	Q73	Q74	Q75
Q15. Principles of market segmentation drive new product selection efforts in this firm.	M(V) M(M)	5.41 4.17	5.41 4.17	5.41 4.17	5.41 4.17	5.41 4.17	5.41 4.17	5.41 4.17
Q22. A lot of informal "hall talk" in this firm concerns our competitors' tactics or strategies.	M(V) M(M)	4.97 2.29	4.97 2.29	4.97 2.29	4.97 2.29	4.93 2.50	4.97 2.29	4.97 2.29
Q25. If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	M(V) M(M)							
Q37. In general, the top managers of my firm believe that… Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior (1) Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives (7)	M(V) M(M)					4.26 3.17		
Q42. My supervisor tells me what shall be done and how it shall be done.	M(V) M(M)					5.22 6.25		
Q45. My supervisor leaves it up to me to decide how to go about doing my job.	M(V) M(M)	5.42 6.40	5.42 6.40	5.42 6.40	5.42 6.40	5.43 6.50	5.42 6.40	5.42 6.40
Q46. My supervisor encourages employees to speak up when they disagree with a decision.	M(V) M(M)					5.49 6.50		
Q48. My supervisor rewards me for good performance.	M(V) M(M)	3.55 6.00	3.55 6.00	3.55 6.00	3.55 6.00	3.58 5.75	3.55 6.00	3.55 6.00
Q53. Your department employees have a good understanding of the information needed to develop/introducing a new product line.	M(V) M(M)					5.24 6.67		
Q55. Your department typically uses the same sources of information each time when developing/introducing a new product line.	M(V) M(M)	4.74 3.33	4.74 3.33	4.74 3.33	4.74 3.33		4.74 3.33	4.74 3.33
Q56. Your department regularly adopts new information for making decisions in development/introduction of a new product line.	M(V) M(M)							
Q57. Your department shares with and uses information generated by other units as necessary.	M(V) M(M)							

Table A4. Separate-Variance t-Tests: Missing Value Analysis (cont'd)

Remaining Items	Mean	Indicator Items						
		Q69	Q70	Q71	Q72	Q73	Q74	Q75
Q58. Your department regularly integrates new information (i.e., new market trends, new product development, new sourcing methods) into your department's old information to make it useful for development/introduction of a new product line.	M(V) M(M)							
Q62. There is a seamless coordination among the divisions that work together in developing/introducing a new product line (i.e., trend dept., buying dept., marketing dept., etc.).	M(V) M(M)							

Indicator Items: Missing Data ≥ 5 %.
M(V): Mean (Valid), M(M): Mean (Missing)
Bolded items show more than ten t-Test result differences between mean of valid group (M(V)) and mean of missing group (M(M)).
All reported mean values are significantly different at $p < .05$.

Table A4. Separate-Variance t-Tests: Missing Value Analysis (cont'd)

Remaining Items	Mean	Indicator Items						
		Q76	Q77	Q78	Q79	Q80	Q81	Q76
Q15. Principles of market segmentation drive new product selection efforts in this firm.	M(V) M(M)	5.41 4.17	5.41 4.17	5.45 3.86		5.41 4.17	5.41 4.17	5.41 4.17
Q22. A lot of informal "hall talk" in this firm concerns our competitors' tactics or strategies.	M(V) M(M)	4.97 2.29	4.93 2.50	4.94 2.71	4.93 2.86	4.97 2.29	4.93 2.50	4.97 2.29
Q25. If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	M(V) M(M)							
Q37. In general, the top managers of my firm believe that… Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior (1) Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives (7)	M(V) M(M)		4.26 3.17	4.30 2.86	4.27 3.14		4.26 3.17	
Q42. My supervisor tells me what shall be done and how it shall be done.	M(V) M(M)		5.22 6.25				5.22 6.25	
Q45. My supervisor leaves it up to me to decide how to go about doing my job.	M(V) M(M)	5.42 6.40	5.43 6.50	5.42 6.40		5.42 6.40	5.43 6.50	5.42 6.40
Q46. My supervisor encourages employees to speak up when they disagree with a decision.	M(V) M(M)		5.49 6.50				5.49 6.50	
Q48. My supervisor rewards me for good performance.	M(V) M(M)	3.55 6.00	3.58 5.75	3.61 4.80	3.57 5.60	3.55 6.00	3.58 5.75	3.55 6.00
Q53. Your department employees have a good understanding of the information needed to develop/introducing a new product line.	M(V) M(M)		5.24 6.67				5.24 6.67	
Q55. Your department typically uses the same sources of information each time when developing/introducing a new product line.	M(V) M(M)	4.74 3.33			4.74 3.33	4.74 3.33		4.74 3.33
Q56. Your department regularly adopts new information for making decisions in development/introduction of a new product line.	M(V) M(M)							
Q57. Your department shares with and uses information generated by other units as necessary.	M(V) M(M)							

Table A4. Separate-Variance t-Tests: Missing Value Analysis (cont'd)

Remaining Items	Mean	Indicator Items						
		Q76	Q77	Q78	Q79	Q80	Q81	Q76
Q58. Your department regularly integrates new information (i.e., new market trends, new product development, new sourcing methods) into your department's old information to make it useful for development/introduction of a new product line.	M(V) M(M)							
Q62. There is a seamless coordination among the divisions that work together in developing/introducing a new product line (i.e., trend dept., buying dept., marketing dept., etc.).	M(V) M(M)			4.71 2.33	4.70 2.67			

Indicator Items: Missing Data ≥ 5 %.
M(V): Mean (Valid), M(M): Mean (Missing)
Bolded items show more than ten t-Test result differences between mean of valid group (M(V)) and mean of missing group (M(M)).
All reported mean values are significantly different at $p < .05$.

APPENDIX IV: DATA NORMALITY ANALYSES

Multivariate normality is another data assumption of Structural Equation Modeling. Before examining multivariate normality, univariate normality must be assured. We test the normality of each item (univariate normality) by examining the shape of the distribution using skewness and kurtosis. Standardized statistics of skewness and kurtosis are calculated by dividing the statistics of skewness and kurtosis by their standard errors.

$$\text{Skew} = \frac{\sum (X - M)^3}{SD^3} \qquad \text{Kurtosis} = \frac{\sum (X - M)^4}{SD^4}$$

$$\text{SE}_{\text{skew}} = \sqrt{\frac{6}{N}} \qquad \text{SE}_{\text{kurt}} = \sqrt{\frac{24}{N}}$$

$$\text{Z skewness} = \frac{skewness}{\sqrt{\frac{6}{N}}} \qquad \text{Z kurtosis} = \frac{kurtosis}{\sqrt{\frac{24}{N}}}$$

N = total sample number (102)

For a normal distribution, skewness and kurtosis have means of 0 and a standard error of skewness of $\sqrt{\frac{6}{N}}$ = .243 and a standard error of kurtosis of $\sqrt{\frac{24}{N}}$ = .485. If the statistical z value is within a score range of ±1.96, the data are normally distributed with a level of 95% rejection confidence interval (CI), which corresponds to a .05 rejection probability level. At the same time, we conduct the Shapiro-Wilk's statistical test (S-W test) for calculating the level of significance for the differences from a normal distribution of data. Table A5 in Appendix IV shows skewness, kurtosis, and S-W test results for all the items.

The results show that market orientation items are negatively skewed, indicating MO scores tend to occur toward the upper end of the scale (Strongly Agree). Looking at the each item's z value of skewness, using a 95% of CI level, no items are normally distributed because those z values are above ±1.96 level. For kurtosis, which indicates "peakedness" or "flatness" of

data distribution, we find 20 out of 31 MO items are in normal distribution range with a 95% of CI. S-W normality test results show that all market orientation data are significantly different from the normal distribution curve. Based on assessment of this set of test results (skewness, kurtosis, and S-W test), we determined that market orientation data are not normally distributed.

Examining the distribution of entrepreneurship orientation data (see Table 2), all items are negatively skewed except one item. Eight out of nine items' skewnesses are normal at .05 rejection probability level. All EO kurtosis scores are negative showing flat distribution and the 6 out of 9 items are in normal distribution range. The S-W test results indicate all EO items are not normally distributed. For employee empowerment (supportive supervision), except one item, all items are negatively skewed and only 2 out of 12 items are in the normal distribution range at .05 rejection probability level. For kurtosis of employee empowerment, only 1 item is normal, the value does not exceed ±1.96. S-W's normality test results show that all supportive supervision items are significantly different than normal distribution. For information integration, all items are negatively skewed. Only 1 item is in normal distribution range. Ten items among 13 of information integration kurtosis are normal. S-W normality results show that all information integration items are significantly different than the normal distribution, therefore these items need to be transformed. For the organizational learning items (total of 16 items), all items are negatively skewed except one item. Four items are in the normal distribution range.

Overall, assessment of these sets of test results, such as skewness, kurtosis, and S-W test, reveals that our data are negatively skewed except three items (Q32, Q48, and Q74).
Except those 3 items, all items are skewed to the higher end of the scale and this leads to non-normal distributions. That is, our respondents answered on the higher end of the scale and such univariate non-normality results in a multivariate non-normal distribution in general. In order to

apply a normal theory-based model and find parameter estimations, we need to determine what extent of non-normality is acceptable for obtaining less biased estimation of parameters, standard errors, and chi-squared statistics.

When the data are non-normal, there is overestimation of the chi-square statistic and underestimation of standard errors, which can lead to false rejection of the model and inflated significance statistics, respectively (Gao et al., 2008; Muthén and Kaplan, 1985). However, Muthén and Kaplan (1985) find from their Monte Carlo simulation, that when univariate skewness and kurtosis are not severe, the data are not much distorted. Similarly, Hallow (1985) finds unbiased parameter estimates when univariate skewness and kurtosis and multivariate Mardia's kurtosis are between -1.25 < skewness < 2.0, -1.0 < kurtosis < 8.0, and -4.9 < Mardia's kurtosis < 49.1. These set of studies imply that when data distribution is small to moderately non-normal, the parameter estimation method is still useful and since our data are in the range of somewhat moderately non-normal (-2.152 to 0.466 for skewness and -1.335 to 5.141, and Mardia's kurtosis as 60.562), we assume that our non-normal data distribution is not a big issue in using SEM method for testing our model. See table A6 in Appendix IV for Mardia's kurtosis.

Table A5. Distributional Characteristics and Test of Normality

Market Orientation (31 items)						
	Skewness		**Kurtosis**		**S-W Test of Normality**	
Item #	statistic	z value	statistic	z value	statistic	significance
Q1	-1.293	-5.331	0.560	1.154	0.761	0.000
Q2	-0.926	-3.818	0.511	1.053	0.858	0.000
Q3	-0.784	-3.233	-0.187	-0.386	0.872	0.000
Q4	-0.863	-3.558	-0.225	-0.464	0.864	0.000
Q5	-0.824	-3.397	-0.285	-0.588	0.865	0.000
Q6	-0.931	-3.839	1.307	2.694	0.879	0.000
Q7	-0.700	-2.886	-0.185	-0.381	0.880	0.000
Q8	-1.275	-5.257	1.128	2.325	0.822	0.000
Q9	-1.648	-6.795	2.832	5.838	0.757	0.000
Q10	-1.149	-4.737	1.229	2.534	0.863	0.000
Q11	-1.265	-5.216	0.905	1.866	0.808	0.000
Q12	-1.030	-4.247	0.337	0.695	0.858	0.000
Q13	-0.495	-2.041	-1.050	-2.165	0.875	0.000
Q14	-0.763	-3.146	-0.084	-0.173	0.892	0.000
Q15	-0.551	-2.272	-0.526	-1.084	0.899	0.000
Q16	-0.945	-3.896	-0.243	-0.501	0.829	0.000
Q17	-1.251	-5.158	1.300	2.680	0.837	0.000
Q18	-0.986	-4.065	0.120	0.247	0.846	0.000
Q19	-0.768	-3.167	-0.338	-0.697	0.889	0.000
Q20	-1.329	-5.480	1.261	2.600	0.810	0.000
Q21	-2.152	-8.873	5.141	10.598	0.696	0.000
Q22	-0.581	-2.396	-0.745	-1.536	0.900	0.000
Q23	-0.921	-3.797	-0.046	-0.095	0.859	0.000
Q24	-0.888	-3.661	0.417	0.860	0.888	0.000
Q25	-0.995	-4.102	0.232	0.478	0.841	0.000
Q26	-0.928	-3.826	0.123	0.254	0.869	0.000
Q27	-1.766	-7.281	4.000	8.246	0.735	0.000
Q28	-1.093	-4.507	0.669	1.379	0.856	0.000
Q29	-1.704	-7.026	2.118	4.366	0.698	0.000
Q30	-1.332	-5.492	1.360	2.804	0.790	0.000
Q31	-1.049	-4.325	0.327	0.674	0.839	0.000

Table A5. Distributional Characteristics and Test of Normality (cont'd)

Entrepreneurship Orientation (9 items)						
	Skewness		**Kurtosis**		**S-W Test of Normality**	
Item #	statistic	z value	statistic	z value	statistic	significance
Q32	0.366	1.509	-0.968	-1.996	0.919	0.000
Q33	-0.248	-1.023	-1.247	-2.571	0.907	0.000
Q34	-0.157	-0.647	-1.335	-2.752	0.901	0.000
Q35	-0.528	-2.177	-0.705	-1.453	0.899	0.000
Q36	-0.042	-0.173	-0.721	-1.486	0.932	0.000
Q37	-0.284	-1.171	-0.726	-1.497	0.931	0.000
Q38	-0.197	-0.812	-0.522	-1.076	0.937	0.000
Q39	-0.388	-1.600	-0.756	-1.559	0.923	0.000
Q40	-0.124	-0.511	-0.932	-1.921	0.935	0.000

Table A5. Distributional Characteristics and Test of Normality (cont'd)

Supportive Supervision (12 items)						
	Skewness		**Kurtosis**		**S-W Test of Normality**	
Item #	statistic	z value	statistic	z value	statistic	significance
Q41	-1.199	-4.944	1.636	3.373	0.836	0.000
Q42	-1.222	-5.038	1.427	2.942	0.852	0.000
Q43	-0.475	-1.958	0.332	0.684	0.916	0.000
Q44	-1.354	-5.583	2.212	4.560	0.833	0.000
Q45	-0.888	-3.661	2.716	5.599	0.875	0.000
Q46	-1.725	-7.112	4.501	9.279	0.788	0.000
Q47	-1.436	-5.921	3.456	7.125	0.823	0.000
Q48	0.466	1.921	-0.996	-2.053	0.879	0.000
Q49	-1.357	-5.595	2.837	5.849	0.839	0.000
Q50	-1.804	-7.438	4.135	8.525	0.763	0.000
Q51	-1.353	-5.579	1.024	2.111	0.796	0.000
Q52	-1.204	-4.964	2.108	4.346	0.854	0.000

Table A5. Distributional Characteristics and Test of Normality (cont'd)

Information Integration (13 items)						
	Skewness		**Kurtosis**		**S-W Test of Normality**	
Item #	statistic	z value	statistic	z value	statistic	significance
Q53	-0.675	-2.783	1.348	2.779	0.871	0.000
Q54	-0.868	-3.579	0.696	1.435	0.896	0.000
Q55	-0.558	-2.301	0.199	0.410	0.922	0.000
Q56	-0.549	-2.264	-0.460	-0.948	0.913	0.000
Q57	-0.704	-2.903	0.443	0.913	0.902	0.000
Q58	-0.778	-3.208	0.306	0.631	0.889	0.000
Q59	-0.748	-3.084	0.071	0.146	0.903	0.000
Q60	-0.787	-3.245	0.322	0.664	0.907	0.000
Q61	-1.220	-5.030	1.127	2.323	0.797	0.000
Q62	-0.683	-2.816	-0.161	-0.332	0.911	0.000
Q63	-0.137	-0.565	-0.625	-1.288	0.948	0.000
Q64	-0.741	-3.055	1.792	3.694	0.892	0.000
Q65	-0.594	-2.449	-0.016	-0.033	0.914	0.000

Table A5. Distributional Characteristics and Test of Normality (cont'd)

Organizational Leraning (16 items)						
	Skewness		**Kurtosis**		**S-W Test of Normality**	
Item #	statistic	z value	statistic	z value	statistic	significance
Q66	-0.774	-3.191	0.372	0.767	0.905	0.000
Q67	-1.337	-5.513	2.231	4.599	0.816	0.000
Q68	-0.532	-2.193	-0.449	-0.926	0.924	0.000
Q69	-0.026	-0.107	-0.844	-1.740	0.942	0.000
Q70	-0.403	-1.662	-0.266	-0.548	0.940	0.000
Q71	-0.771	-3.179	0.247	0.509	0.906	0.000
Q72	-0.586	-2.416	0.064	0.132	0.929	0.000
Q73	-0.980	-4.041	-0.085	-0.175	0.841	0.000
Q74	0.019	0.078	-0.599	-1.235	0.904	0.000
Q75	-1.024	-4.222	1.613	3.325	0.881	0.000
Q76	-0.584	-2.408	-0.293	-0.604	0.904	0.000
Q77	-1.247	-5.142	3.008	6.201	0.854	0.000
Q78	-1.035	-4.267	0.887	1.829	0.868	0.000
Q79	-0.709	-2.923	-0.136	-0.280	0.896	0.000
Q80	-0.705	-2.907	0.221	0.456	0.914	0.000
Q81	-0.354	-1.460	-0.206	-0.425	0.913	0.000

Table A6. Assessment of Multivariate Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
CS	2.250	6.750	-.874	-3.602	.856	1.764
EI	1.250	7.000	-.450	-1.854	.039	.079
EC	2.750	7.000	.027	.110	-.625	-1.288
CB	1.000	6.000	-1.365	-5.627	2.243	4.624
FLX4	1.000	7.000	-.737	-3.040	.010	.020
FLX3	1.000	7.000	-.541	-2.231	-.496	-1.022
FLX2	2.000	7.000	-.767	-3.162	.232	.479
FLX1	1.000	7.000	-.855	-3.527	.604	1.245
SCO3	2.000	7.000	-.693	-2.859	.364	.749
SCO2	1.000	7.000	-.776	-3.198	.248	.511
SCO1	1.000	7.000	-.585	-2.413	-.073	-.151
R	3.286	6.714	-.892	-3.677	-.111	-.228
ID	2.000	6.750	-.970	-4.000	.020	.041
IG	2.111	7.000	-1.032	-4.256	.455	.938
RP	1.000	7.000	-.293	-1.208	-.747	-1.539
P	1.000	7.000	-.451	-1.859	-.901	-1.858
I	1.500	7.000	-.368	-1.516	-.841	-1.735
EF5	1.000	7.000	-.135	-.557	-.653	-1.346
EF4	3.000	7.000	-1.202	-4.956	1.014	2.091
EF2	1.000	7.000	-.673	-2.774	-.211	-.436
Multivariate					60.562	10.309

APPENDIX V: CORRELATION MATRIX, MEANS, & STANDARD DEVIATIONS FOR SECOND-ORDER FACTOR ANALYSIS OF INFORMATION SEARCH BEHAVIOR

Table A7. Correlation Matrix, Means and Standard Deviations for 2nd Order Factor Analysis of Information Search Behavior

	Mean	Std. Deviation	FLX4	FLX3	FLX2	FLX1	SCO3	SCO2	SCO1	EF5	EF4	EF2
FLX4	5.045	1.505	1.000									
FLX3	4.913	1.411	.635	1.000								
FLX2	5.433	1.319	.659	.692	1.000							
FLX1	5.091	1.456	.434	.456	.474	1.000						
SCO3	5.401	1.206	.654	.687	.713	.470	1.000					
SCO2	4.876	1.370	.652	.493	.711	.469	.597	1.000				
SCO1	5.078	1.415	.426	.600	.623	.411	.523	.521	1.000			
EF5	4.488	1.545	.389	.568	.424	.280	.423	.422	.523	1.000		
EF4	6.120	1.020	.222	.233	.425	.160	.242	.456	.211	.282	1.000	
EF2	4.640	1.491	.570	.599	.621	.410	.620	.618	.542	.724	.413	1.000

APPENDIX VI: CORRELATION MATRIX, MEANS, & STANDARD DEVIATIONS FOR FULL MODEL: WHOLE GROUP, HIGH GROUP, & LESS HIGH GROUP

Table A8. Correlation Matrix, Means & Standard Deviations for Whole Group

	Mean	Std. Deviation	CS	EI	EC	CB	FLX 4	FLX 3	FLX 2	FLX 1	SCO 3	SCO 2	SCO 1	EF5	EF4	EF2
CS	5.271	.932	1.000													
EI	5.073	1.198	.709	1.000												
EC	4.877	1.122	.426	.339	1.000											
CB	4.707	.9447	.484	.461	.207	1.000										
FLX4	5.045	1.506	.461	.315	.271	.338	1.000									
FLX3	4.913	1.411	.475	.439	.217	.310	.589	1.000								
FLX2	5.433	1.319	.576	.452	.222	.397	.682	.730	1.000							
FLX1	5.091	1.456	.356	.220	.201	.185	.440	.436	.473	1.000						
SCO3	5.401	1.206	.432	.333	.244	.335	.696	.685	.715	.523	1.000					
SCO2	4.876	1.370	.483	.332	.231	.403	.625	.495	.699	.531	.551	1.000				
SCO1	5.078	1.415	.365	.375	.188	.388	.415	.645	.583	.340	.500	.593	1.000			
EF5	4.488	1.545	.400	.368	.222	.170	.294	.530	.430	.442	.379	.494	.615	1.000		
EF4	6.120	1.020	.291	.230	.074	.260	.223	.235	.458	.240	.225	.486	.287	.235	1.000	
EF2	4.640	1.491	.418	.335	.290	.316	.540	.542	.640	.514	.568	.665	.590	.713	.434	1.000
RP	3.945	1.523	.205	.229	.032	.064	.072	.120	.160	.070	.111	-.012	.029	.078	-.120	-.016
P	4.075	1.617	.325	.366	.130	.149	.157	.249	.267	.124	.127	.075	.142	.201	.021	.198
I	4.756	1.536	.103	.121	-.067	-.008	.073	.160	.170	.094	.118	.052	.052	.017	.031	-.038
R	5.589	.895	.623	.535	.385	.342	.490	.491	.516	.409	.474	.504	.458	.450	.312	.519
ID	5.287	1.148	.595	.520	.346	.341	.494	.555	.545	.339	.465	.475	.454	.471	.364	.598
IG	5.356	1.031	.587	.520	.350	.367	.435	.497	.538	.319	.432	.464	.480	.396	.370	.524

Table A8. Correlation Matrix, Means & Standard Deviations for Whole Group (cont'd)

	RP	P	I	R	ID	IG
RP	1.000					
P	.608	1.000				
I	.604	.542	1.000			
R	.134	.298	.094	1.000		
ID	.100	.335	.132	.857	1.000	
IG	.149	.388	.139	.825	.843	1.000

Table A9. Correlation Matrix, Means & Standard Deviations for High Group

	Mean	Std. Deviation	CS	EI	EC	CB	FLX4	FLX3	FLX2	FLX1	SCO3	SCO2	SCO1	EF5	EF4	EF2
CS	5.522	.940	1.000													
EI	5.343	1.085	.622	1.000												
EC	5.028	1.115	.398	.325	1.000											
CB	4.847	.890	.565	.624	.332	1.000										
FLX4	5.412	1.340	.395	.164	.160	.336	1.000									
FLX3	5.084	1.411	.434	.239	.195	.245	.631	1.000								
FLX2	5.802	1.180	.503	.206	.266	.387	.811	.692	1.000							
FLX1	5.277	1.320	.372	.075	.272	.252	.471	.399	.495	1.000						
SCO3	5.637	1.152	.395	.130	.331	.267	.756	.685	.733	.490	1.000					
SCO2	5.159	1.246	.435	.143	.385	.308	.673	.426	.658	.603	.531	1.000				
SCO1	5.223	1.378	.316	.247	.250	.265	.327	.609	.436	.260	.409	.445	1.000			
EF5	4.750	1.499	.316	.102	.255	.119	.011	.390	.236	.294	.194	.349	.485	1.000		
EF4	6.390	.820	.126	.102	.073	.156	.286	.313	.357	.337	.147	.427	.166	.186	1.000	
EF2	5.038	1.327	.257	-.043	.288	.210	.319	.406	.522	.463	.440	.614	.463	.621	.505	1.000
RP	4.003	1.567	.275	.300	.012	.216	.014	.120	.124	.003	.041	-.072	-.005	.093	-.151	-.101
P	4.309	1.653	.340	.309	.045	.252	.032	.150	.126	.088	.005	-.081	-.019	.043	.016	.026
I	4.847	1.530	.143	.063	-.120	.081	.080	.103	.070	.092	.033	-.071	-.046	-.055	-.041	-.153
R	5.802	.857	.585	.381	.422	.380	.426	.494	.449	.337	.407	.481	.387	.277	.340	.338
ID	5.621	1.040	.525	.290	.298	.297	.375	.522	.405	.214	.365	.418	.324	.267	.377	.365
IG	5.644	.958	.503	.368	.353	.341	.333	.460	.426	.252	.357	.384	.411	.199	.360	.313

Table A9. Correlation Matrix, Means & Standard Deviations for High Group (cont'd)

	RP	P	I	R	ID	IG
RP	1.000					
P	.659	1.000				
I	.546	.606	1.000			
R	.046	.157	.061	1.000		
ID	.104	.249	.180	.863	1.000	
IG	.163	.336	.199	.812	.807	1.000

Table A10. Correlation Matrix, Means & Standard Deviations for Less High Group

	Mean	Std. Deviation	CS	EI	EC	CB	FLX4	FLX3	FLX2	FLX1	SCO3	SCO2	SCO1	EF5	EF4	EF2
CS	4.882	.782	1.000													
EI	4.653	1.256	.796	1.000												
EC	4.641	1.107	.400	.287	1.000											
CB	4.491	.997	.287	.204	-.029	1.000										
FLX4	4.476	1.585	.422	.348	.334	.260	1.000									
FLX3	4.648	1.387	.501	.668	.200	.356	.509	1.000								
FLX2	4.862	1.334	.561	.617	.051	.329	.450	.790	1.000							
FLX1	4.802	1.621	.269	.306	.063	.057	.358	.459	.402	1.000						
SCO3	5.035	1.210	.369	.481	.032	.355	.571	.664	.641	.527	1.000					
SCO2	4.437	1.452	.450	.437	-.057	.453	.503	.551	.689	.416	.509	1.000				
SCO1	4.853	1.459	.402	.496	.051	.518	.487	.682	.766	.409	.599	.763	1.000			
EF5	4.082	1.548	.438	.625	.099	.161	.549	.708	.594	.586	.562	.619	.780	1.000		
EF4	5.702	1.161	.318	.199	-.040	.276	-.004	.077	.421	.079	.173	.455	.367	.175	1.000	
EF2	4.022	1.535	.498	.626	.202	.353	.682	.698	.678	.530	.652	.660	.743	.800	.232	1.000
RP	3.854	1.468	.055	.120	.046	-.181	.126	.104	.200	.147	.201	.042	.068	.032	-.144	.062
P	3.712	1.509	.174	.374	.202	-.081	.221	.364	.370	.116	.221	.194	.349	.379	-.114	.331
I	4.614	1.555	-.026	.160	-.021	-.163	.018	.227	.270	.073	.205	.173	.171	.085	.059	.047
R	5.257	.859	.581	.644	.252	.203	.460	.437	.479	.447	.472	.442	.529	.624	.131	.641
ID	4.770	1.127	.574	.689	.327	.303	.502	.574	.572	.414	.486	.429	.600	.666	.180	.765
IG	4.909	.991	.594	.601	.258	.313	.414	.511	.538	.327	.416	.452	.551	.577	.218	.655

Table A10. Correlation Matrix, Means & Standard Deviations for Less High Group (cont'd)

	RP	P	I	R	ID	IG
RP	1.000					
P	.521	1.000				
I	.697	.428	1.000			
R	.258	.436	.099	1.000		
ID	.065	.369	.018	.812	1.000	
IG	.107	.380	.005	.798	.838	1.000

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