

Learning Orientation Factors Affecting Company Innovation and Innovation Capability: Textile versus Non-textile Manufacturers[†]

The effect of learning orientation on company innovation and innovation capability are explored based on survey data collected from 154 small and medium-sized manufacturing firms. The theoretical links between learning orientation and company innovation as well as innovation capability are investigated in four research models that compare textile and non-textile manufacturing firms. Learning orientation has a significant effect on company innovation and innovation capability in the model test. However, some of the three segmented factors (commitment to learning, shared vision, and open-mindedness) of learning orientation had no significant effect on company innovation and innovation capability. Company innovation and innovation capability of textile manufacturing firms are predicted by the commitment to learning and shared vision, whereas those of non-textile firms were determined by shared vision and open-mindedness. Differences show that firms may need to put weight on some distinctive aspects of learning orientation according to the business categories in order to enhance company innovation.

Innovation is a key factor to increase company competitiveness and researchers (Calantone *et al.*, 2002; Frans *et al.*, 2004; Hausman, 2005) have shown interest in the issue of company innovation. Innovative companies that are open to the adoption of innovation and are active in seeking innovation, tend to have more opportunities to develop products and advance processes. Companies can increase sales and income when market innovations are successful.

Researchers (Hult *et al.*, 2004; Hurley & Hult, 1998) studied the factors affecting company innovation and paid attention to the importance of learning orientation. Research has focused on confirming the relationship between learning orientation and company innovation. Some researchers (Hult *et al.*, 2004; Hurley & Hult, 1998; Keskin, 2006) found there was a meaningful effect on the learning orientation in innovation capabilities. However, no study has dealt with the comparison of the relationship among firms in different business categories.

Firms in a business category can be different from firms in another business category based on market needs, production process, and corporate culture. Firms may have different kinds of motivation to influence innovation. Since each business category has internal ways to operate business and to engage in innovation the factors that are influential in the enhancement of corporate

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innovation can be different by business categories.

Manufacturers in the textile field depend on market-based knowledge and rapidly changing customer needs to obtain new ideas for developing new products or services. These textile companies may not need high edge technology for making new products; instead, information on market change and competitor movement is important for new product development. These conditions may not be same as those of firms in other business categories in terms of technology level or promptness of market change.

The effect of learning orientation on two company innovation indicators (company innovation and innovation capability) were explored in this study. The segmented factors (commitment to learning, shared vision, and open-mindedness) of learning orientation influential in corporate innovation and innovation capability through a comparison of textile versus non-textile manufacturers were examined. Limited research has compared the effective factors of learning orientation on company innovation and innovation capability, although learning orientation has been a very important issue in academia and industry. This study compared the effective factors of learning orientation on company innovation and innovation capability in the relation of learning orientation and corporate innovation. A holistic investigation of learning orientation provides implications for practitioners by business category in order to enhance company innovation, through the generation of critical factors of learning orientation.

LITERATURE REVIEW

Learning Orientation

Learning orientation is understood as the development of new knowledge or new perspectives by an organization based on learning. Baker and Sinkula (1999) described learning orientation as organizational characteristics reflecting values responding to the problems of organizations and environments. Learning orientation influences the propensity of the firm to create and use all kinds of knowledge needed by the firm. Learning orientation affects the competence of a company challenging the prior

market beliefs by activating innovations in creating a new paradigm.

Learning orientation embraces three segmented factors including commitment to learning, shared vision, and open-mindedness (Baker & Sinkula, 1999). Commitment to learning is recognized as a culture amenable to learning. It is necessary to improve the understanding of the environment and the market of a company. Without a shared vision, people are less active in sharing a business mission or desired outcomes such as sales or profits (Dougherty, 1989). If the organizational vision is not shared among members, the motivation to learn is lowered (Day, 1991). Open-mindedness is a willingness to critically evaluate the operational routine of an organization and to accept new ideas or new perspectives (Keskin, 2006).

Learning orientation affects all aspects of organizational behaviors by enhancing the knowledge and intellectual power of an organization. Learning is crucial in increasing the competitiveness of a company (Hunt & Morgan, 1996; Sinkula, 1994) and it should be consistently promoted to achieve long-term positive outcomes regardless of changes in the market (Hult *et al.*, 2004).

Effect of Learning Orientation on Company Innovation and Innovation Capability

Company innovation is considered as the capacity of a company in introducing some new products, processes, or ideas in the organization (Hurley & Hult, 1998). Company innovation is determined by the openness of organizational members toward innovation (Hult *et al.*, 2004) and is related to innovation capability. Innovation capability is recognized as the competence of a company to make an innovation a success in the market. Employees in highly innovative companies are likely to be more active in developing new products or advancing processes. Companies with a high level of innovation have more chances to develop new products or services that might be successful in the market that result in a higher level of innovation capability.

Prior research confirmed a direct influence of learning orientation on company innovation (Farrell & Oczkowski, 2002; Sinkula & Baker, 1999; Slater &

Narver, 1995). Hurley and Hult (1998) recognized that learning orientation was an antecedent of the innovative culture of an organization by highlighting the close relationship between learning orientation and company innovation. Knowledge built through consistent learning would be promoted to better understand customer needs, emerging markets, and the strengths or weaknesses of the competitor, that ultimately to contribute to company innovation.

Slater and Narver (1995) emphasized the direct effect of learning-orientation on the success of new products, which can be understood as innovation capability. Learning orientation allows the organization to use diverse sources for the development of a new product and not to depend solely on market responses (Baker & Sinkula, 1999). Innovations developed based on diverse information and knowledge are more likely to be successful.

Three segmented factors (commitment to learning, shared vision, and open-mindedness) constructing the learning orientation are correlated each other and correlated to company innovation and innovation capability (Baker & Sinkula, 1999; Santos-Vijande *et al.*, 2005). Prior research used a learning orientation variable as an endogenous variable embracing these three factors in one variable (Baker & Sinkula, 1999; Calantone *et al.*, 2002; Keskin, 2006). However, a model examining the effect of each factor on innovation indicators would also be needed to confirm the difference in the predictability of each factor. Limited research was devoted to solve the discrete effect of each segmented factor of learning orientation in spite of a great deal of attention by researchers to this issue.

This study used two research models including: 1) a model using learning orientation variable as an endogenous variable, and 2) a model using three learning orientation factors as observed variables were investigated to verify the effect of learning orientation on two innovation indicators such as company innovation and innovation capability.

*Small and Medium-sized Textile Manufacturers vs.
Non-textile Manufacturers*

Learning orientation studies tend to investigated

large firms. However, Keskin (2006) focused on small and medium-sized companies and found the positive causal relationship between learning orientation and company innovation among small and medium-sized companies.

Small and medium-sized companies were different from large-scale companies in terms of limited resources, the range of technological competency, influence of owners on decision-making, and dependence on small numbers of customers and suppliers (Keskin, 2006). Learning orientation is less formal, less structured, and less sequential in small and medium-sized companies (Anderson & Boocock, 2002; Gibb, 1997). Learning in small firms is context-sensitive, firm-specific, and work-based, which is reactive and produces operational efficiency in the short-run (Badger *et al.*, 2001). Considering these differences according to company size, further investigations are needed on learning orientation that focus on small and medium-sized companies.

In a similar concept as commitment to learning, You *et al.* (2008) explored a research model that included the learning and development variable as focused on textile companies. In this study, learning and development affected innovation capability. In reference to the results, it is assumed that commitment to learning would affect innovation capability in textile companies. However, it was not revealed whether other factors of learning orientation such as shared vision and open-mindedness affected innovation capability in textile companies. This study explored: 1) whether commitment to learning is an important factor influencing innovation indicators in only textile firms or also in other firms regardless of the business category, and 2) whether shared vision and open-mindedness are also important factors influencing innovation indicators in textile firms and in other business categories.

The majority of the learning-orientation studies were conducted in diverse fields. However, limited research was found in comparison of companies by business category in the research of learning orientation and company innovation. In this study, the effect of learning orientation on company innovation and innovation capability by a comparison

of small and medium-sized textile and non-textile manufacturing firms, when considering different culture, production process, and operational practice according to business category. The results provide implications regarding an applicability of the theoretical model to diverse business categories.

Research Hypotheses

Research hypotheses developed based on the literature are as follows.

- H₁₋₁ Learning orientation of manufacturers affects company innovation.
- H₁₋₂ There is no difference in the effect of learning orientation on firm innovation between textile and non-textile manufacturers.
- H₂₋₁ Learning orientation of manufacturers affects innovation capability.
- H₂₋₂ There is no difference in the effect of learning orientation on the innovation capability between textile and non-textile manufacturers.

Three factors of learning orientation (commitment to learning, shared vision, and open-mindedness) would affect company innovation and innovation capability.

- H₃₋₁ There is no difference in the effect of *commitment to learning* on company innovation between textile and non-textile manufacturers.
- H₃₋₂ There is no difference in the effect of *shared vision* on company innovation between textile and non-textile manufacturers.
- H₃₋₃ There is no difference in the effect of *open-mindedness* on company innovation between textile and non-textile manufacturers.
- H₄₋₁ There is no difference in the effect of *commitment to learning* on the innovation capability between textile and non-textile manufacturers.
- H₄₋₂ There is no difference in the effect of *shared vision* on the innovation capability

between textile and non-textile manufacturers.

- H₄₋₃ There is no difference in the effect of *open-mindedness* on the innovation capability between textile and non-textile manufacturers.

RESEARCH METHODS

Data Collection

Data obtained for this study were by a convenient sampling in a survey of 154 Korean manufacturing firms (74 textile manufacturers and 80 non-textile manufacturers). The I&R research company provided a nation-wide sample list of 200 textile-manufacturing firms and 200 non-textile manufacturing firms, which are categorized in the small and medium-sized companies. Practitioners from each company were contacted by phone and requested to participate in the e-mail survey. The e-mail survey method was used to collect nation-wide data at a low cost. Data gathered through the e-mail survey was superior to a postal mail survey in collecting data in a short period of time and in the quality of data (Comley, 1996).

E-mail survey was conducted and additional phone contacts were made to encourage completing and returning e-mail questionnaires. After a two-month surveying processes, 154 questionnaires were returned with a response rate of 38.5%. Textile manufacturing firms are fiber and fabric manufacturing firms and non-textile manufacturing firms were composed of electronics (23 firms), automobiles (14), metal/machine (21), food (11), medicine (7), and chemical (4) fields.

To increase a commonality among respondents, only small and medium-sized companies that have at least five years of history of between 5 and 300 employees were included in the sample. Employee respondents were limited to managers or those in leadership positions in the company. Only one respondent from each company participated in the survey. Data were analyzed through descriptive analysis, t-test, factor analysis, and multiple group causal modeling based on AMOS 6.0.

Table 1. Learning Orientation Factors

Factors & Items	Factor Loading
FACTOR 1 <i>Commitment to Learning</i>	
Managers agree that an ability of a business unit to learn is the key to a competitive advantage.	.721
The basic values of this business unit include learning as a key to improvement.	.778
The perception is that employee learning is an investment and not an expense.	.756
Learning in the organization is a key commodity perceived necessary to guarantee organizational survival.	.789
The collective wisdom in this enterprise is that the future is endangered if the team quits learning.	.746
Eigen Value 3.986 Cronbach's Alpha 0.90	
FACTOR 2 <i>Shared Vision</i>	
There is a well-expressed concept of what the team is and where the team is going as a business unit.	.582
There is a total agreement on the business unit vision at all levels, functions, and divisions.	.632
All employees are committed to the goals of the business unit.	.769
Employees view individuals as partners in charting the direction of the business unit.	.848
Leadership believes in sharing a vision for the business unit with lower levels of the team.	.717
Eigen Value 3.718 Cronbach's Alpha 0.91	
FACTOR 3 <i>Open-mindedness</i>	
The team is not afraid to reflect critically on the shared assumptions on business practices.	.695
The business unit places a high value on open-mindedness.	.527
Managers encourage employees to think outside of the box.	.678
Original ideas are highly valued in the organization.	.582
Eigen Value 2.264 Cronbach's Alpha 0.87	

Measurements

Measurements for learning orientation were adopted from Baker and Sinkula (1999). Learning orientation of the firm was constructed with three segmented factors of commitment to learning, shared vision, and open-mindedness. Six items for each learning orientation factor variables were translated to Korean and used in the questionnaire. Exploratory factor analysis was conducted to confirm the validity of measures as summarized in Table 1. After a few items reducing reliability were excluded, five items for commitment to learning, five items for shared vision, and four items for open-mindedness were used for data analysis. Considering a high reliability and validity of measures, the mean of each learning orientation factor was used as a value for each variable.

Measurements for company innovation and innovation capability were developed based on definitions and concepts indicated in the literature (Hult *et al.*, 2004; Hurley & Hult, 1998). Company innovation was measured with three items including “the firm is innovative”, “innovation in the firm is strong”, and “the firm is positive on innovation”. In addition, innovation capability was measured with three items including “newly launched products or services was successful”, “newly launched products

or services obtained a positive market response”, and “newly launched products or services would contribute to the increase of sales”. Based on an acceptable reliability of company innovation and innovation capability (.94 and .86) the means of each factor was used for a value for each variable. All question items were asked using a 6-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, and 6 = strongly agree).

Company Characteristics and Research Variables

Before testing the research hypotheses, textile manufacturers and non-textile manufacturers were compared to each other in terms of company characteristics and research variables (Table 2).

There was no difference in the number of employees, annual sales, annual net profit, number of products or services developed in the last three years, and number of processes advanced in the last three years. These results indicated that textile manufacturers were not different from non-textile manufacturers in company size, performance, and innovative efforts. However, the years of establishment were different and indicated a longer history of non-textile manufacturers.

Table 2. Comparison of Company Characteristics

	Years of Establishment	Number of Employees	Annual Sales (Billion Won)	Annual Net Profit (Billion Won)	Number of Products or Services Developed in the last 3 years	Number of Processes Advanced in the last 3 years
Textile Manufacturers (N = 74)	1993.78 (10.35)	65.12 (75.28)	8.78 (16.57)	2.08 (5.61)	8.16 (20.34)	4.81 (8.14)
Non-textile Manufacturers (N = 80)	1998.21 (7.34)	65.34 (75.10)	9.49 (19.24)	3.91 (22.61)	8.44 (18.49)	7.56 (13.61)
<i>t</i> - value	-3.081**	.065	-.242	-.677	-.089	-1.502

Numbers in parentheses are standard deviations; ** $p < .01$

Table 3. Mean Comparison of Research Variables

	Learning Orientation			Company Innovation	Innovation Capability
	Commitment to Learning	Shared Vision	Open-mindedness		
Textile Manufacturers (N = 74)	3.77 (.93)	3.64 (.91)	3.59 (.86)	3.61 (1.10)	3.68 (.85)
Non-textile Manufacturers (N = 80)	3.91 (.93)	3.68 (.93)	3.71 (.90)	3.59 (1.13)	3.72 (1.05)
<i>t</i> - value	-.90	-.30	-.86	.09	-.29

Numbers in parentheses are standard deviations.

Table 4. Correlations of Research Variables

Variable	Commitment to Learning	Shared Vision	Open-mindedness	Company Innovation	Innovation Capability
Commitment to Learning	1.000				
Shared Vision	.708**	1.000			
Open-min Dedness	.733**	.817**	1.000		
Company Innovation	.569**	.659**	.611**	1.000	
Innovation Capability	.644**	.697**	.694**	.689**	1.000

** $p < .01$

The means of research variables were compared between the two research groups (Table 3). The means of all variables were from 3.59 to 3.91 and were around the mid-point of the 6-point scale. There was no difference in the means of research variables and it was found that textile manufacturers were not different from non-textile manufacturers in terms of the level of learning orientation, company innovation, and innovation capability of Korean manufacturers.

RESULTS

The correlations among research variables were explored. Table 4 suggested that all research variables

were correlated to each other. The result is consistent with previous studies (Calantone *et al.*, 2002; Hurley & Hult, 1998) indicating a high correlation of learning orientation and company innovation.

Collinearity diagnostics were checked to confirm multicollinearity problems among research variables. Variance Influence Factor (VIF) was arranged 2 to 4 and was lower than 10 that is an evidence of multicollinearity that is evidence that there is no serious collinearity problem to conduct further analyses.

Test of Research Hypotheses

Effect of learning orientation Multiple causal modeling analyses were conducted to test research

hypotheses. Learning orientation which is an endogenous variable measured by three observed variables (commitment to learning, shared vision, and open-mindedness) affected company innovation and innovation capability in both textile and non-textile manufacturers as indicated in Model 1 and Model 2 ($p < .001$). Model 1 and Model 2 indicated a good fit to the data by showing 1.448 and 0.981 for CMIN/DF, which is below 3 (Kim, 2006). Other fit indicators such as NFI and CFI were positive suggesting figures higher than .98.

The coefficient of the path from learning orientation to company innovation was .67 (CR = 6.48) in textile manufacturers and .73 (CR=8.26) in non-textile manufacturers. The coefficients of the path from learning orientation to innovation capability were .72 (CR=7.12) in textile manufacturers and .82 (CR = 10.71) in non-textile manufacturers. The Critical Ratios for the difference of the two paths did not exceed two in Model 1 and Model 2 and the paths in each model were revealed as not significantly different to each other. In the results the alternative hypotheses 1-1 and 2-1 were accepted, and the null hypotheses 1-2 and 2-2 were accepted.

Effect of segmented factors of learning orientation The effect of three segmented factors of learning orientation on company innovation and innovation capability were investigated in Model 3 and Model 4. Model 3 and Model 4 did not indicate a fairly good fit to data by showing 50.001 of CMIN/DF. From the

results it is assumed that no significant path in the model would be existed.

In Model 3 the path coefficients from commitment to learning (CL) to company innovation were .35 (CR = 3.48) in textile manufacturers and .03 (CR = .33) in non-textile manufacturers. The Critical Ratio for Difference between these two paths was -2.346, (exceeding 2) and the two paths were revealed to be significantly different in rejecting null hypothesis 3-1.

Path coefficients from shared vision (SV) to company innovation were .37 (CR = 3.73) in textile manufacturers and .53 (CR = 5.96) in non-textile manufacturers. The path coefficients from open-mindedness (OM) to company innovation were .08 (CR = .83) in textile manufacturers and .29 (CR = 3.27) in non-textile manufacturers. Critical Ratios for Difference of these two paths were 1.193 and 1.538 (not exceeding 2) and no difference was found in the both paths from SV and OP to company innovation that were incapable of the rejection of null hypotheses 3-2 and 3-3.

In Model 4 analysis, path coefficients from CL to innovation capability were .42 (CR = 4.40) in textile manufacturers and .40 (CR = 4.19) in non-textile manufacturers. The Critical Ratios for Difference between these two paths were -2.250, exceeding |2| and the two paths were revealed to be significantly different in rejecting null hypothesis 4-1.

Path coefficients from SV to innovation

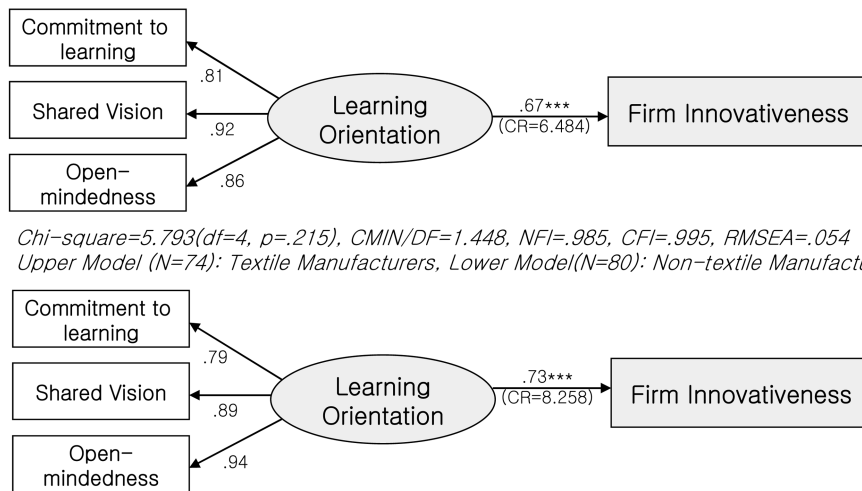


Figure 1. Model 1: Effect of Learning Orientation on Company Innovation (**p < .001)

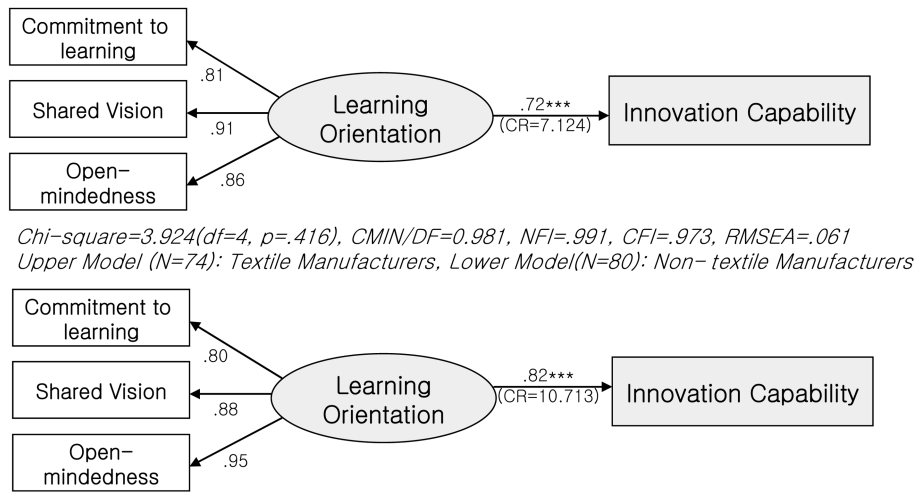


Figure 2. Model 2: Effect of Learning Orientation on Innovation Capability (** $p < .001$)

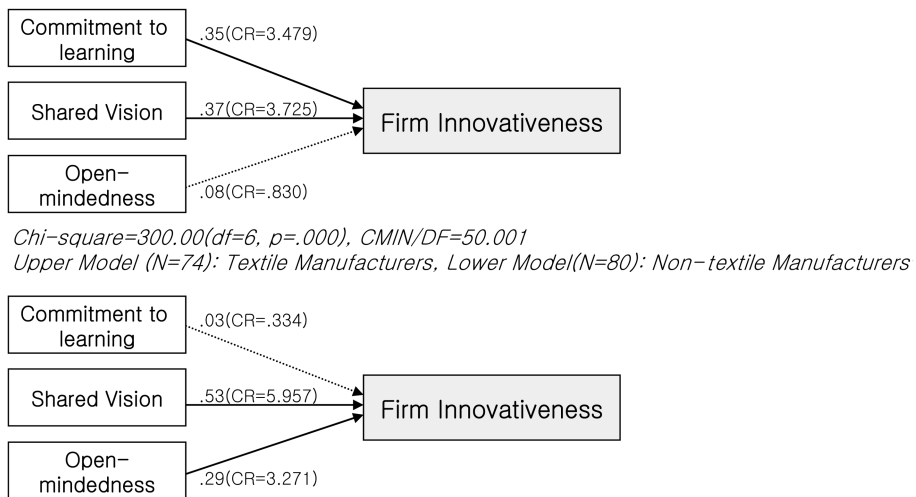


Figure 3. Model 3: Effect of Learning Orientation Factors on Company Innovation

capability were .10 (CR = 1.19) in textile manufacturers and .31 (CR = 3.80) in non-textile manufacturers. The path coefficients from OM to innovation capability were .06 (CR = .59) in textile manufacturers and .60 (CR = 7.33) in non-textile manufacturers. Critical Ratios for the difference of these two paths were -.301 and 4.699. No difference was found in the path from SV to innovation capability between textile and non-textile manufacturers and incapable of the rejection of null hypothesis 4-2; null hypothesis 4-3 was rejected and indicated a difference in the path from OM to innovation capability.

The results found that there were differences between textile and non-textile manufacturers in the

effect of each segmented factors of learning orientation on company innovation and innovation capability. The learning orientation variable did converge when these three segmented factors revealed an effect on innovation and innovation capabilities. Innovation and innovation capabilities of textile manufacturers were determined by CL and SV where innovation and innovation capabilities of non-textile manufacturers were determined by SV and OM. The CL positively affected company innovation and innovation capability of only textile manufactures. The OM positively affected company innovation and innovation capability of only non-textile manufactures.

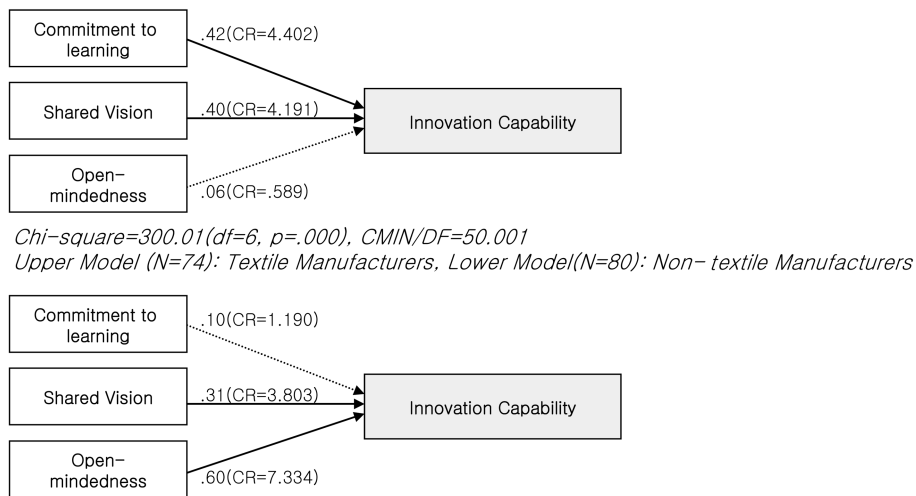


Figure 4. Model 4: Effect of Learning Orientation Factors on Innovation Capability

SUMMARY AND CONCLUSION

Important findings were generated based on the analysis of survey data. Based on the findings, alternative hypotheses 1-1 and 2-1 were accepted. Also, null hypotheses 1-2, 2-1, 2-2, 3-2, 3-3, and 4-2 were accepted due to the lack of statistical evidence. However, null hypotheses 3-1, 4-1, and 4-3 were rejected that implied that a difference between textile versus non-textile firms existed.

Learning orientation embraced three factors in the results (commitment to learning, shared vision, and open-mindedness) that had an effect on company innovation and innovation capability with no difference in the relationship of these variables between textile and non-textile firms. The examination of the effect of each separate factor (commitment to learning, shared vision, and open-mindedness) on company innovation and innovation capability showed that there is a segmented factor of learning orientation neutral to company innovation and innovation capability. In addition, there is a difference between textile and non-textile firms in the effect of segmented factors on company innovation and innovation capability.

Company innovation and innovation capabilities of textile manufactures were determined by a shared vision and commitment to learning while non-textile manufacturers were determined by a shared

vision and open-mindedness. The shared vision was an important factor affecting company innovation indicators regardless of business category. Textile firms achieved the higher innovation outcome when companies encouraged employees to commit to learning. Since textile products are seasonal and trendy, the textile firms that have good human resources that consistently learn about market changes or future demands of consumers are able be advantageous in achieving company innovation. However, open-mindedness may not be an important factor influencing company innovation among textile manufacturers.

The following conclusions were generated based on results. First, the theory (Hurley & Hult, 1998) and prior research used in the learning orientation endogenous variable embracing three factors should be examined when the variable is applied to diverse business categories. Second, company innovation and innovation capabilities of textile firms were determined by shared vision and commitment to learning. Building a corporate culture of organizational learning and vision-sharing is important, in order to enhance the corporate innovation and innovation capability of textile firms.

The present study provided meaningful results that suggest that the effect of learning orientation factors on company innovation and innovation capability are different by business category. Limited

research compared the difference in the effective factors of learning orientation on company innovation and capability, though learning orientation has long been an important issue in business and academia. In the case of textile manufacturing firms, the effective factors were different from those of non-textile manufacturing firms. These results implied that textile firms are a trend-driven industry that should study market changes and consumer needs through studying trade publications, participating in international trade shows, receiving lectures, and listening to seminars for specialists than companies in other fields. Firms in the textile-manufacturing field need to spend more time and effort to learning activities, although some companies in other fields achieved success in innovation by sharing vision and a liberal view. Large-sized textile companies tend to be more active in encouraging employee involvement with learning activities such as the encouragement of employees to make business trips to international trade shows and global market research. In reference to the study results, small and medium-sized companies in the field of textile manufacturing need to acknowledge that learning would provide a fundamental and critical basis to create innovative products that would be more successful in the market.

A limitation of the present study was the limited number of samples by each business category obtained through a convenient web survey sampling. In future studies, data collected from more companies using diverse data collection methods would confirm the credibility of the results.

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