An Empirical Examination of Competitive Capability's Contribution toward Firm Performance: Moderating Role of Perceived Environmental Uncertainty

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Abstract

In the world of competition, manufacturing and service companies are trying to enhance their competitive capabilities in order to be able to give more value to their customers and gain prominent positions in competition with other companies. Every company tries to concentrate on its one or more capabilities in competition in order to turn them into a clear competitive advantage that improves the firm performance. In fact, it is necessary for the firms being active in market and being consistent with competitive requirements to gain and maintain a competitive advantage. This study investigates the effect of competitive capability on firm performance under environmental uncertainty conditions. The findings show that competitive capability has direct positive effect on customer satisfaction, financial performance, and market performance. In other words, enhancing these capabilities leads to improving customer satisfaction and increases market and financial performance. Investigation of the effects of different aspects of competitive capabilities on different performance aspects show that the capability of cost leadership positively affects financial performance and market performance but, has no effect on customer satisfaction. Also, the capability of differentiation has direct positive effect on customer satisfaction but affects financial performance and market performance negatively. Additionally, the examination of the moderating effect of perceived environmental uncertainty on the relationship between competitive capability and firm performance shows that in different environmental conditions, the effects of cost leadership capability on customer satisfaction, differentiation capability on financial performance, and differentiation capability on market performance are moderated. On the other word, managerial decisions in these areas are affected by environmental conditions involved in processes of material supply, production, and market demand.

Keywords: Competitive capability, Cost leadership, Differentiation, Firm performance, Customer satisfaction, Financial performance, Market performance, Perceived environmental uncertainty

1. Introduction

The market is changing rapidly and more than before, it seems critical to have quick and appropriate action to these changes. Competition era with qualities of technological changes, global markets effects, and close competition is both creating threats to firms and providing opportunities for them simultaneously. Succeeding in such environment needs to gain competitive advantage with enhancing firm's competitive capabilities. Gaining competitive advantage makes firms able to be successful in turbulent environments. As Porter (1990) mentions in explanation of the success of industries and firms in global competition, competitive advantage will be gained from the organizations' environmental position as well as their inbound properties of industry and firms. He believes that a firm will enhance its competitive advantage when it is surrounded in a powerful boundary of customers, suppliers, and related industries.

It is the main purpose of this study to investigate the role of competitive capability and its elements on firm performance under the conditions of environmental uncertainty perceived by the managers of the firms. Generally, proper matching between strategy and available competitive advantage is considered as an important step in strategy regulation and in this way, investigation and measurement of the firm capabilities in creating competitive advantages is necessary. So, considering how competitive capabilities affect performance, the firm will be able to examine its proper competitive strategies and allocate its resources and capital for improving capabilities affecting firm performance.

In fact, the main question of the study is: How do competitive capabilities -cost leadership and differentiation- affect firm performance -customer satisfaction, financial performance, and market performance? How does this effect change with conditions of perceived environmental uncertainty?

2. Theoretical Framework and Literature Review

The concept of competitive advantage is mentioned sporadically in the context of corporate strategies till late 1980s. There are discussions related to competitive advantage like strengths and weaknesses of firms in Ackoff (1970) and Andrews (1971) that are not mentioned competitive advantage exactly. However Penrose (1959) in 'The Theory of the Growth of the Firm' mentions the word of competitive advantage many times but does not refer to the concept precisely. Also, Ansoff (1965) refers to the word just when is to explain the firm's requirements for effective competition in the market and names that as one of four elements of strategy. So, with respect to the wide use of the concept of competitive advantage in the literature, it was not used as its current meaning (Klein, 2001). The advent of this concept in management and marketing context was from Porter's theory of competitive advantage (Porter, 1985). He concentrates on offering values to the customers in definition of competitive advantage and describes it as the heart of firm performance in competitive markets. In other words, competitive advantage mainly is about offering products from which customers perceive more value compared with competitors' products (Saloner, Shepard & Podolny, 2001).

In order to achieve competitive advantage, a firm should consider both its internal capabilities and external environmental factors (Appelbaum, 2000). So, what matters about gaining a competitive advantage can be mentioned in two separate but related concepts: First, a firm can create a specific competitive advantage according to the evaluation of its key capabilities that is based on value creating, rare, inimitable (differentiated from competitors), and complicated (non-substitutable) assets and resources referring to the resource-based view (RBV) (Barney, 1991). This advantage makes it possible for the firm to achieve positions and level of performance better than competitors. Second, complicated factors of the environment and its uncertainty lead to imitation of the advantage with the competitors or decreasing its value for the customers (Sadri & Lees, 2001). Recognition of the factors making uncertainty in the environment helps firms to find the origin of their possible threats and opportunities and concentrate on a successful competitive strategy relative to the analysis of the findings. A competitive advantage can be reliable if it's not temporary and haphazard. Now the firm can improve its performance over its competitors with emphasis on its competitive advantage. Hay and Williamson (1991) in definition of competitive advantage focus on its ephemerality and believe that reliability on such an advantage is till the market valorizes it. So, considering the environmental complexity and market turbulence, the firm should emphasis on an appropriate competitive advantage through which its performance can be improved.

Porter (1985) introduces three strategic approaches for gaining competitive advantage: cost leadership, differentiation, and focus. Every firm selects its appropriate approach with paying attention to its specific competitive capabilities and environment conditions and does its best to gain valuable performance results with moving through the approach. According to Tracy et al. (1999), competitive capabilities are probable distinction points between a firm and its competitors. They believe that managers cannot control their competitive capabilities directly; however, these capabilities are consequences of managerial decisions and can hasten performance levels of the firm.

In most studies the firm performance is considered as an important factor for measurement of the success of a competitive advantage in market conditions. For example, for measurement of the success of a competitive advantage in a firm, Kay (1993) mentions that it can be calculated with the ratio of added value to net or gross output of the firm. In fact, he establishes a direct relationship between competitive advantage and added value -can be extracted from annual reports. So, in Kay's view, competitive advantage concept is the same with better financial performance to competitors while, Porter (1985) focuses on total value -beyond just cost approach-offered by the firm to the customers. To gain competitive advantage, he emphasizes on values that are in upper level in compare to the customer's cost. On the other hand, if customer's received value is more that its spending, we can say that the customer is satisfied and such satisfaction can provide considerable performance advantages for the firm.

Investigation of theoretical background, concepts and theories related to competitive advantage shows that this concept plays a critical role in firm performance and competitive position. Also, the focus of related theories is on dynamic nature of competitive advantage and paying attention to effective competitive requirements in order to persistence of firm's competitive advantage in the market. For this purpose and in order to empirical investigation of the concept, previous studies are been examined and turned out that different researchers have focused on different approaches and indices in investigation of the effect of competitive capability on the firm performance. So, firstly we review and examine those different viewpoints and approaches, and secondly the proposed conceptual model of research is presented according to the mentioned models and indices in previous works. Our main focus in this study is on researches done since 2000 and their findings in literature review:

Matanda and Schroder (2002) investigated the effect of competitive capabilities of supply chain on business performance of horticultural industry in Zimbabwe. Indices have been used with them for measurement of competitive capability was for the first time in studies, and included elements of technical efficiency, marketing efficiency, innovation, cost and waste reduction, and access to credit. Also in order to investigation of business performance, they used market share growth, sales volume, and new product introduction. According to the results, marketing efficiency positively affects business performance. Cost and waste reduction positively affects business performance - because of the major effect of waste reduction on business returns in perishable products. Technical efficiency significantly has negative relationship with business performance - because of farmers' opinion to investment on buyers' required technical facilities as an unnecessary and excess factor. Innovation has negative relationship with business performance - because of considering the innovation as a cost and not at least a short-term advantage. Access to credit negatively relates with business performance - because of its high cost and inequities in profit sharing between channel partners.

Vickery et al. (2003) studied the effect of customer service on financial performance in automotive industry of North America through a one-dimensional approach to competitive capability and performance. In their survey, some firms tended to present objective information from which they gave real values but they used subjective evaluation of perceived performance of managers in other firms. Findings showed that customer service positively and directly affects financial performance.

In another research, Kim (2006) studied the effect of the alignment between corporate competitive capability and supply chain operational capability on the firm performance with considering moderating effect of developmental stages of supply chain integration. The survey was conducted in different industries of Japan and Korea. Competitive capability is measured with components of cost leadership, innovative marketing technology, differentiation, and customer service; and the dimensions for measuring performance are customer satisfaction, market performance, and financial performance. As it can be considered, the indices used in this work for evaluation of competitive capability are totally different from the work of Matanda and Schroder (2002). Also, comparing to mentioned works, wider range of performance dimensions are measured. According to the findings, parallel with the development of supply chain integration stages, reciprocal relationship between the firm's competitive capability and operational capability of supply chain improves performance as a matter of customer satisfaction. This strengthens market-based performance and eventually financial performance hastens. Alignment between differentiation capabilities (customer service) and logistical capability leads to customer satisfaction, while alignment between innovative marketing technology capability and technological capability leads to market-based performance, and the accordance between cost leadership capability and structural capability makes financial performance hastened. Considering the change of key criteria of performance from customer satisfaction to market-based performance and then to financial performance, focusing on capabilities can move from differentiation/customer service capabilities-logistical capabilities to innovative marketing technology-technological capabilities, and then to cost leadership-structural capabilities. But the effect of the reciprocal relationship of two capabilities -corporate competitive capability and supply chain operational capability- on firm performance decreases with development of supply chain integration stages, and eventually supply chain integration is substituted with the effect of reciprocal relationship of the two capabilities on the firm performance.

Rosenzweig et al. (2003) studied on the relationship between competitive capabilities and business performance in consumer products industries in different geographical areas including North America, Europe, Asia-Pacific, and Latin America. They analyzed competitive capability with product quality, delivery reliability, process flexibility, and cost leadership; and business performance with return on assets, the percentage of revenues from new products, customer satisfaction, and sales growth in target market relative to main competitors. Findings with respect to the size as a control variable show that competitive capability directly influences on the percentage of revenues from new products, and cost leadership is the sole competitive capability that drives increased percentage of revenues from new products. Manufacturers will be able to regulate prices in response to the market through the capability of

cost leadership. While empirical results show that improved competitive capabilities directly lead to business performance, individual effects extremely changes with different performance criteria.

A glance on other researches in this area (Li et al., 2006; Swink et al., 2007; Mzoughi et al., 2008) reveals that indices used to measure competitive capability in them are considerably close to the ones of Rosenzweig et al. (2003) with different and more specific categorization of indices of course. The findings of these researches are explained briefly.

Li et al. (2006) studied the effect of competitive advantage on organizational performance in different industries in the United States. Competitive advantage is measured by price/cost, quality, delivery dependability, product innovation, and time to market; and organizational performance by market performance and financial performance. The results show that quality and time to market are more powerful indices for competitive advantage relative to other three elements. On the other hand, it can be perceived from the findings that upper levels of competitive capability can lead to better organizational performance. Organizational performance is affected more by competitive advantage than by supply chain management practices.

Swink et al. (2007) surveyed the effect of manufacturing competitive capabilities on plant performance. In order to investigate research objective, they focused on different industries in North America. Competitive capability is measured by cost efficiency, quality, delivery, process flexibility, and new product flexibility; and plant performance by market performance and customer satisfaction. According to the findings, flexibility of new product is a more important competitive capability. On the other hand, cost efficiency and process flexibility are either non-significantly or negatively associated with plant performance. Every capability of quality, delivery, and new product flexibility is associated with enhanced market performance. Also, delivery and quality capabilities are considerably related with more satisfaction of customer. In contrast, cost capability is negatively related with both aspects of business performance.

Mzoughi et al. (2008) studied the effect of competitive advantage on organizational performance in different industries in Tunisia. They measured competitive advantage by the dimensions of price, quality, time to market, innovation, and reliability of delivery. Also financial performance and market performance were measuring elements for organizational performance. The findings show that, from the aspects of competitive capability, only time to market has positive effect on financial performance.

Kim (2009) studied the effect of competitive capability on firm performance in different industries of Japan and Korea, and used indices similar to his previous work of 2006. According to its findings, it can be mentioned that reciprocal relation of competitive capability of the firm and supply chain practical capability in Japanese firms has direct effect on firm performance wherever this interactive relationship appears after the integration of supply chain. On the other hand, interactive relationship between the firm's competitive capability and practical capability of supply chain in Korean firms leads to supply chain integration and becomes related with performance on this matter. So, interactive relation between competitive capability and practical capability of supply chain has direct relationship with the firm performance in Japanese firms, but this relationship is indirect- through supply chain integration- in Korean firms.

Also, Oghazi (2009) investigated the effect of competitive capabilities on firm performance in Sweden industries by means of dimensions similar to Kim's works (2006, 2009). He used "focus strategy" as another element of competitive capability as well as elements of Kim's works. The findings show that competitive capability has direct positive effect on firm performance.

We summarize briefly these research findings in Table 1 and discuss them below.

Insert Table 1 Here

It can be mentioned according to the findings of these previous researches that competitive capabilities affect the firm performance. Also, negative relationship between these variables is confirmed in some studies. For instance, Swink et al. (2007) show that cost leadership competitive capability negatively affects customer satisfaction and market performance. Also, Matanda and Schroder (2002) found that capabilities of technical efficiency, innovation, and access to credit negatively affect business performance. In other words, these researchers believe that some competitive capabilities lead to decrease in performance level. On the other hand, the results of investigation on direct and indirect influences show that competitive capability effects on organizational performance directly (Rosenzweig et al., 2003; Li et al., 2006; Swink et al., 2007; Mzoughi et al., 2008; Oghazi, 2009; Matanda & Schroder, 2002; Vickery et al., 2003) and indirectly through interacting with operation of supply chain management (Kim, 2006, 2009), or supply chain integration (Kim, 2009). Also, findings of previous researches show that some dimensions of competitive capabilities have stronger effect on performance than others (Rosenzweig et al., 2003;

Swink et al., 2007; Kim, 2006; Mzoughi et al., 2008). So, according to the results, confirming the influence of competitive capabilities on firm performance, the influence of different dimensions of this variable may be varying as a matter of type and intensity and this may lead to different implications. Additionally, various indices are investigated by researchers in previous works for competitive capability and firm performance that are mentioned below:

Competitive Capability: Porter (1980) mentions that in order to achieve better position among competitors, the firms can take three approaches: cost leadership, differentiation, and focus. The firms can thrive with more than one approach of course. Each of these common approaches includes a mainly different path to gain competitive advantage. Competitive advantage lies in the heart of any strategy and adopting a proper one, as a matter of the type of competitive advantage and the scope of the business, will lead to make firms achieve a competitive advantage (Porter, 1980). In focus approach one or both approaches of cost leadership and differentiation will be considered; so, we will investigate only on cost leadership and differentiation each of which can become a perceivable value for customer so that he will be willing to spend money for it. Additionally according to previous studies, Indices of cost leadership (Kim, 2006, 2009; Rosenzweig et al., 2003; Swink et al., 2007; Oghazi, 2009; Feng et al., 2010; Li et al., 2006) and differentiation (kim, 2006, 2009; Oghazi, 2009; Hosseini Baharanchi, 2009) are more used for measurement of competitive capability. So, it can be categorized with two concepts: Cost leadership and Differentiation.

Firm Performance: Previous studies have considered various dimensions for this concept that customer satisfaction (Kim, 2006, 2009; Rosenzweig et al., 2003; Swink et al., 2007; Zailani & Rajagopal, 2005; Oghazi, 2009; Tracey et al., 2005), financial performance (Kim, 2006, 2009; Rosenzweig et al., 2003; Oghazi, 2009; Vickery et al., 2003; Li et al., 2006; Tracey et al., 2005; Mzoughi et al., 2008), and market performance (Kim, 2006, 2009; Frohlich & Westbrook, 2001; Swink et al., 2007; Oghazi, 2009; Li et al., 2006; Tracey et al., 2005; Mzoughi et al., 2008) are more popular. Therefore, we used three dimensions for firm performance construct in this study: Customer Satisfaction, Financial Performance, and Market Performance.

Perceived Environmental Uncertainty: This variable is considered with three elements of supply uncertainty, manufacturing uncertainty, and demand uncertainty in most studies (Merschmann & Thonemann, 2010; Ho et al., 2005; Davis, 1993). Davis (1993) mentions according to his work's findings that various dimensions of environmental uncertainty are main issues that can influence on managing the supply chain processes. So, every dimension should be measured thoroughly, and their impact on supply chain processes should be analyzed to achieve better performance results (Ho et al., 2005). We discuss on this variable through three dimensions in this study: Supply Uncertainty, Manufacturing Uncertainty, and Demand Uncertainty.

3. Hypotheses Development and Conceptual Model

3.1 Research Hypotheses

The managers' ultimate goal is to improve the firm performance and for this objective, they consider competitive capability as one of the main factors for hastening customer satisfaction and market performance (Tracey et al., 1999). As mentioned in literature, competitive capabilities considerably influence, directly or indirectly, on the firm performance (Kim, 2006, 2009; Rosenzweig et al., 2003; Li et al., 2006; Swink et al., 2007; Mzoughi et al., 2008; Oghazi, 2009; Matanda & Schroder, 2002; Vickery et al., 2003). According to Porter (1996), competitive capabilities provide survival and growth opportunities for firms. Considering the importance of this effect in previous studies, following hypotheses are investigated in this study:

3.1.1 Impact of Competitive Capability on Customer Satisfaction

Referring to Tracey et al. (1999), it can be found that empirically there is a clear path from competitive capability to customer satisfaction. In other words, competitive capability is a stimulus for customer satisfaction. Various studies have focused on the relationship between competitive capability and customer satisfaction (Kim, 2006, 2009; Rosenzweig et al., 2003; Swink et al., 2007; Oghazi, 2009). This relationship is confirmed in most researches, but more or less there is contradictory in results. So our first hypothesis is:

H_1: Competitive capability influences on customer satisfaction.

Different dimensions of competitive capabilities have different effects on customer satisfaction of course. Kim (2006) showed that differentiation and customer service as competitive capabilities influence on customer satisfaction, but cost leadership has no effect. Rosenzweig et al. (2003) disclosed that cost leadership does not influence on customer satisfaction. The findings of Swink et al. (2007) show that cost leadership capability negatively affects customer satisfaction. On the other hand, this competitive capability leads to decrease in customer satisfaction. According to findings of previous researches, these sub-hypotheses are considered:

H_{1a}: Cost leadership capability affects customer satisfaction.

H_{1b}: Differentiation capability affects customer satisfaction.

3.1.2 Impact of Competitive Capability on Financial Performance

Vickery et al. (2003) conclude that competitive capability (customer service) positively affects financial performance. Also, Tracey et al. (1999) mention based on their findings that competitive capabilities influence on the firm's financial performance indirectly through customer satisfaction improvement. The effect of competitive capability on financial performance is considered in various papers (Kim, 2006, 2009; Li et al., 2006; Mzoughi et al., 2008; Oghazi, 2009; Vickery et al., 2003), and consensus cannot be seen in their findings. The second hypothesis is:

H_2: Competitive capability influences on financial performance.

Remarkable results can be achieved with more detailed look at the effect of different indicators of competitive capability on financial performance. A firm can increase its profit margin and return on investment (ROI) with improving product quality. Innovative organizations which are able to introduce new product quickly can increase their growth rate and market share (Mzoughi et al., 2008). Kim (2006) investigated on various Japanese and Korean firms, and found that cost leadership capability positively affects financial performance. In contrast, differentiation has no effect on financial performance. Therefore, we investigate several sub-hypotheses as follows:

H_{2a}: Cost leadership capability affects financial performance.

H_{2b}: Differentiation capability affects financial performance.

3.1.3 Impact of Competitive Capability on Market Performance

It is necessary for cost structure of the firm to be optimized in order to make the firm able to offer a competitive price in the market. On the other side, products with more added value and better quality compared to competitors lead to enhance firm's market position and improvement of its market performance (Oghazi, 2009). Different researchers have investigated the effect of competitive capability on market performance (Kim, 2006, 2009; Li et al., 2006; Swink et al., 2007; Mzoughi et al., 2008; Oghazi, 2009). So, our third hypothesis to test is:

H_3: Competitive capability influences on market performance.

Considering the effect of various dimensions of competitive capability on market performance, it can be revealed that cost leadership and differentiation has different effects on market performance. Swink et al. (2007) found that in different industries of North America, cost leadership negatively affects market performance. On the other hand, they believe that this capability leads to reduction in market performance of the firm. In contrast, the findings of Rosenzweig et al. (2003) show that cost leadership capability hasten market performance. As a result, following sub-hypotheses are investigated:

H_{3a}: Cost leadership capability affects market performance.

H_{3b}: Differentiation capability affects market performance.

3.2 Proposed Conceptual Model: Competitive Capability on Firm Performance

According to the research purpose, conceptual framework is exhibited in Figure 1.

Insert Figure 1 Here

As illustrated in this figure, the effect of cost leadership on different aspects of performance is tested through subsidiary hypotheses of H_{1a}-$H_{3a,}$ and similarly for differentiation and its effects on different aspects of performance, H_{1b}-H_{3b} will be tested. Also, the effect of perceived environmental uncertainty as a moderating effect on each of subsidiary hypotheses is revealed.

4. Research Method

4.1 Scale Development and Data Collection

In order to be sure about content validity of research tool, we tried to design the questionnaire based on valid theories and confirmed indices of previous studies. Our target population is active firms of food industry and we tried to choose indices related to the population. Measurement of face validity of research is performed by means of face-to-face interview with three academics and six executive managers from food industry. Initial questionnaire with fifty questions was studied, and the questions were criticized with respect to being related to food industry, understandability, order, and clearance. The emphasis in this step was on questions not to be so long that become boring, and every question ask only about one thing. So, some suggested questions of academics and managers that were consensus with experts' and managers' view were added to the questionnaire.

The modified questionnaire was sent to the experts, and general format of it were confirmed in this step with some corrections. Then a 21- question form divided in twenty firms as a pre-test and the respondent managers were asked to offer their corrective reviews about the questions as well as answering. Slight changes were done on general design of the tool according to this pre-test feedback, and the final questionnaire was ready to dispense in sample firms.

The considering firms were average and large as a matter of size -number of staff- with at least fifty. In this study, 275 questionnaires distributed among food industry firms and 86 firms consented to fill the forms. Respondent managers included CEO, chairman, technical and quality control manager, business administrator, and factory manager with at least five years of experience in their organizational position in that firm to answer the questions with thorough familiarity with the firm. Also, in order to increase reliability of the answers, the respondents were asked to consult with other managers about a particular area of some questions that they are not so familiar with. The managers filled the forms with acceptable accuracy, and they benefited other managers' reviews in responding the questions were needed, because they were willing to know about the results

As can be seen in Table 2, the results of reliability test of research tool - test-retest method with Cronbach's Alpha - show that every three variables of the research with more than 0.7 Cronbach's alpha coefficient (Netemeyer et al., 2003; Nunnally, 1978) are appropriately reliable.

Insert Table 2 Here

Cronbach's alpha coefficient of the whole questionnaire is 0.83 as is exhibited in Table 2 and this means that the respondents' perception of the questions is mainly same with each other and so, the research tool is reliable.

4.2 Research Variables and Measurements

Previous researches have been investigated to define different aspects of the variables, and indices considered by researchers have been identified and corrected through interviewing with academics and executive managers. The final indices have been used in questionnaire are mentioned in Appendix A.

5. Data Analysis

5.1 Investigating Measurement Items

Confirmatory factor analysis (CFA) is used to statistical significance test of research relationships and fitting measurement models of research variables. As is exhibited in Table 2, factor loadings of research variables include the range between 0.57 and 0.98. So, we can be sure that every observed variable (questions) has appropriate correlation with its latent variable.

Composite reliability evaluates internal consistency of measurement model (Chatzoglou & Vraimaki, 2009), and there are many reviews about the cut-off point of this kind of validity. Chin (1998) and Kim (2009) suggest 0.7, but Bagozzi and Yi (1988) focus on 0.6 in their study. We considered minimum level of 0.7 as acceptance level of this index, and observed that the instrument of the research has Composite reliability (Table 2).

Goodness-of-fit indices of the measurement model for each latent variable are shown in Table 3. As can be seen in this table, the overall fits of all three confirmatory factor analyses were judged to be satisfactory. So, it can be assertive that the tool has been used for measurement of the research topic has construct validity.

Insert Table 3 Here

5.2 Sample and Descriptive Statistics

The firms have been investigated in this study are from active firms of food industry in Tehran. 25.4 percent are from dairy products, 23.9 percent from sugary products, 12.7 percent from canned products, 11.3 percent from meat products, and 5.6 percent from edible oils industry. Descriptive statistics and correlation matrix of the dimensions of research variables are exhibited in Table 4. It shows that research tool has predictive validity because of the significant correlation between dimensions of competitive capability and firm performance (Swink et al., 2007).

Insert Table 4 Here

Analysis of variance statistical test (ANOVA) is used to evaluate generalizability of the results to the whole of industry. In other words, this test shows weather there is significant difference between competitive capability, firm performance, and perceived environmental uncertainty in different groups of food industry. According to the results of the test, significant coefficients are 0.113, 0.786, and 0.130 for competitive capability, firm performance, and perceived environmental uncertainty, respectively. It can be concluded that the studied sample has appropriate congruence, and there is not any significant difference between groups of food industry as a matter of research

variables because of the coefficients being over 0.05. On the other words, the results can be generalized to the whole food industry.

5.3 Testing Hypotheses with Structural Equation Modeling

The relationships between research variables are studied by means of Structural equation modeling with LISREL software. So, simultaneous evaluation of hypotheses is done with initial model. As it is exhibited in Table 5, significant coefficients for all three main hypotheses are more than critical t-value (1.96), and this confirms hypotheses. Also, the results of testing main hypotheses with structural equation modeling show that the goodness of fit indices for model with main hypotheses satisfies the generally accepted standards for Goodness of Fit.

Insert Table 5 Here

The model of the main hypotheses is exhibited in Figure 2. The path coefficients in the figure show that the effect of competitive capability on financial performance is more than the effect of competitive capability on other aspects of firm performance. In other words, enhancement of competitive capability of a firm has stronger effect on indices of financial performance.

Insert Figure 2 Here

Subsidiary hypotheses of the research are investigated by means of Structural equation modeling in the rest, and the effects of every aspect of competitive capability, cost leadership and differentiation, on each dimension of firm performance, customer satisfaction, financial performance, and market performance, are measured.

According to Table 6 as significant coefficients for each subsidiary hypothesis show, it can be claimed that cost leadership capability has no effect on customer satisfaction, but it has direct and positive effect on financial performance and market performance; while differentiation capability has a direct positive effect on customer satisfaction, but it has a direct negative effect on financial and market performance. Additionally, the goodness of fit indices of the model shows the fit of the sub-hypotheses model suitable, and the observed data match the conceptual model of the research appropriately (Table 6).

Insert Table 6 Here

The model for subsidiary hypotheses of the research with path coefficients of causal relations between variables is exhibited in Figure 3.

Insert Figure 3 Here

According to these path coefficients, if we consider only direct and positive effects, it can be concluded that competitive capability strongly influences on financial performance and market performance, while differentiation strongly influences on customer satisfaction.

5.4 Moderating Effect of Perceived Environmental Uncertainty

Moderated multiple regression analysis and subgroup correlation analysis can be used for studying the effect of moderating variables (Stone-Romero & Anderson, 1994). Subgroup correlation analysis is used in this study by means of SPSS, and the measured statistic for perceived environmental uncertainty as the moderating variable of relationships between different aspects of competitive capability and various dimensions of firm performance is exhibited in Table 7. There will be moderating relationship if the observed statistic (U_0) is more than Chi-square value with k-1 = 1 degree of freedom and alpha equal to 0.05, which is equal to 3.84. The findings show that the variable of perceived environmental uncertainty only moderates the relationship between cost leadership and market performance, cost leadership and financial performance, and differentiation and customer satisfaction. More detail investigation shows that moderating relationship exists only for significant relationships with positive path coefficient.

Insert Table 7 Here

Also, it can be concluded from Table 7 that perceived environmental uncertainty has no effect on other relationships between research variables. It means the effect of cost leadership on customer satisfaction, differentiation on financial performance, and differentiation on market performance does not change significantly in different environmental conditions.

6. Discussion and Implications for Managers: Improving Competitive Capabilities

6.1 The Overall Effect of Competitive Capability on Firm Performance

Literature review shows that competitive capabilities influence on firm performance directly and indirectly (Kim, 2006, 2009; Rosenzweig et al., 2003; Li et al., 2006; Oghazi, 2009). Kim (2009) concludes that competitive

capability influences on firm performance in Japanese firms directly and positively. The findings of Rosenzweig et al. (2003) show that improvement of competitive capabilities leads to better business performance. Li et al. (2006) mention that upper level of competitive capability lead to better organizational performance. The findings of Oghazi (2009) reveal that competitive capabilities have direct positive effect on firm performance. It has concluded from the current research that competitive capability enhancement leads to better performance. So, the findings are aligned with works of Kim (2009)-In Japanese firms-, Rosenzweig et al. (2003), Li et al. (2006); Oghazi (2009).

6.2 The Effect of Competitive Capability on Customer Satisfaction

Considering the work of Tracey et al. (1999), it can be deducted empirically that there is a clear path from competitive capability to customer satisfaction. In the other words, competitive capability is considered as a stimulus for customer satisfaction. The findings of Kim (2006) show that differentiation and customer service influence on customer satisfaction, while, cost leadership has no effect on customer satisfaction. According to the findings of Swink et al. (2007), enhancement of cost leadership as a competitive capability leads to customer satisfaction reduction. Rosenzweig et al. (2003) reveal that cost leadership has no effect on customer satisfaction.

The results of this study indicate that the competitive capability will apply a positive effect on customer satisfaction. Thus, the findings of this research are consistent with the work of Tracey et al. (1999). It was also revealed that competitive capability of cost leadership does not influence on customer satisfaction which is in line with the findings of Kim (2006), and Rosenzweig et al. (2003). Additionally, the findings of current research showed that the capability of differentiation directly influences on customer satisfaction. This finding is consistent with Kim (2006)'s one.

6.3 The Effect of Competitive Capability on Financial Performance

The findings of the work of Vickery et al. (2003) show that competitive capability (customer service) influences on financial performance directly and positively. According to the results of Mzoughi et al. (2008), a firm can increase its profit margin and return on investment with improvement of its product quality. Innovative organizations which have great power to introduce new products quickly are able to improve their growth rate and market share. They mention with discussion on the results that time to the market as a competitive capability influences on financial performance. Kim (2006) found that competitive capability of cost leadership influences on financial performance in Japanese and Korean sample firms, while, differentiation does not affect financial performance.

The findings of the current study confirm the positive effect of competitive capability on financial performance. Therefore, it is evident that in comparison with other research findings, this study's findings are consistent with the results of Vickery et al. (2003) and Mzoughi et al. (2008). Additionally, citing the results of this study, cost leadership capability affects financial performance that is in line with the result of Kim's (2006) article. Also, the findings of current study show that differentiation capability has negative effect on financial performance that is in contrast with the work of Kim (2006).

6.4 The Effect of Competitive Capability on Market Performance

Tracey et al. (1999) consider competitive capabilities as one of main factors for market performance improvement. The findings of Rosenzweig et al. (2003) show that cost leadership capability enhances market performance. Also citing the results of Oghazi (2009), it is necessary for cost structure of the firm to be optimized in order to provide an opportunity to offer competitive price in market for the firm. On the other hand, products with more added value and higher quality than of the competitors lead to promote the firm's position in the market, and thus improve market performance. Swink et al. (2007) show that improvement of cost leadership capability leads to weaker market performance. In other words, they believe that this capability leads to market performance waning.

The findings of current study show that competitive capability affects market performance, and that is aligned with the findings of Tracey et al. (1999), Rosenzweig et al. (2003), and Oghazi (2009). On the other hand, closer review of the research hypotheses makes it clear that cost leadership capability leads to improve market performance, and this reveals that the findings are in contrast with Swink et al.'s work (2007).

Citing theoretical findings of the current work, some practical results are explained for experts and executive managers in food firms as follows: First, focusing just on cost leadership strategy does not lead to improvement of customer satisfaction. In other words, following this strategy makes some changes in products and even production process that ultimately the outcome not only does not appeal the customer, but also reduces customer satisfaction in most cases. The firms in adoption of cost leadership strategy should consider that reduction of costs must not lead to inappropriate changes and reduction final product value, because it can damage the firm's value and its reputation especially in food industry and may lead to customer loosing.

Second, cost leadership capability positively affects financial and market performance. It is evident that reduction in cost makes financial performance improved. Considering market performance indices makes it clear that cost leadership strategy plays critical role in increasing market share and sales growth. This finding shows that ultimate effects of cost leadership that lead to price reduction, makes sales increased and in competitive environment enhances market share. In other words, the customers are more willing to purchase the company's products whereas this appetency is because of their price not for satisfaction. If the firm can consider customer satisfaction parallel to cost leadership strategy and implement an effective cost management process, it will achieve notable results.

Third, differentiation strategy positively affects customer satisfaction, but negatively influences on market and financial performance. In fact, making products changed and trying to differentiate them for customers' needs appropriate investment and this would be costly for the firm. Thus, its effect on financial performance is negative. On the other hand, such costs make the firm increase the prices and so, fewer customers will be able to purchase the products. In contrast, the customers are satisfied and consider the products valuable. The firms should take note that increasing prices regardless the majority's power of purchase will be contradict. In other words, the efforts of the firm for differentiating the products will be considered by only a minority of customers.

Forth, the effect of cost leadership capability on customer satisfaction, differentiation capability on financial performance, and differentiation capability on market performance become moderated in different environmental conditions. As a result, managerial decisions in these areas are affected by environmental factors in the process of material supply, production, and market demand. The managers in food industry firms should evaluate environmental factors continuously and make appropriate reactions, because specific competitive capabilities are considered in varying environmental conditions and so, the firm should be ready to make necessary changes in its strategies.

7. Research Contribution and Directions for Future Research

This paper aims to report on an investigation of competitive capabilities, and how these capabilities lead to firm performance in the context of Iran. The main contribution of this paper is that it has investigated the moderating effect of environmental uncertainty on the relationship of every dimension of competitive capability and each aspect of firm performance, and these relationships have not been previously investigated.

According to the findings of the current research, some suggestions for future studies can be offered.

We recommend doing case study on a specific firm as the analysis unit in order to obtain more detail information about presented conceptual model. This method provides information that is not available in survey method.

Competitive capabilities and their effect on performance can be investigated in virtual organizations that are expanding in recent years. The findings should be compared with similar researches in traditional organizations. Of course, detail and precise investigation of competitive capabilities in virtual organizations needs to identify related indices carefully.

We did our survey on firms with at least five years of experience. It seems investigation on the years of experience as a control variable and its effect on relationships between variables in conceptual model would lead to useful and practical results.

Some dimensions of firm performance - financial and market performance-that exact data are available about them are measured by means of questionnaire, because such information is considered confidential in firms and access to such data is impossible. So, subjective questions with Likert scale have been utilized for measurement of these variables, whereas, measurement of these constructs with objective data results in more acceptable findings. Therefore, there is a need for further research using objective measures of firm performance.

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Table 1. Empirical contributions in the effect of competitive capability on firm performance

Study	Sample and context	Competitive capability	Firm performance	Major findings
Matanda and Schroder (2002)	The horticultural industry in Zimbabwe	-Technical efficiency -Marketing efficiency -Innovation -Cost and waste reduction -Access to credit	-Market share growth -Sales volume -New product introduction	Marketing efficiency positively affects business performance. Cost and waste reduction positively affects business performance. Technical efficiency significantly has negative relationship with business performance. Innovation has negative relationship with business performance. Access to credit negatively relates with business performance.
Vickery et al. (2003)	The automotive industry in North America	-Customer service	-Financial performance	Customer service positively and directly affects financial performance.
Kim (2006)	Different industries in Japan and Korea	-Cost leadership -Customer service -Innovative marketing technology -Differentiation	-Market performance -Financial performance -Customer satisfaction	Parallel with the development of supply chain integration stages, reciprocal relationship between the firm's competitive capability and operational capability of supply chain improves performance as a matter of customer satisfaction. This strengthens market-based performance and eventually financial performance hastens.
Rosenzweig et al. (2003)	The consumer products industry in North America, Europe, Asia-Pacific, and Latin America	-Product quality -Delivery reliability -Process flexibility -Cost leadership	-ROA -Sales growth -Customer satisfaction -%revenues from new products	With respect to the size as a control variable, competitive capability directly influences on the percentage of revenues from new products, and cost leadership is the sole competitive capability that drives increased percentage of revenues from new products. Improved competitive capabilities directly lead to business performance, but individual effects extremely changes with different performance criteria.
Li et al. (2006)	Different industries in USA	-Price/cost -Quality -Delivery dependability -Product innovation -Time to market	-Market performance -Financial performance	Quality and time to market are more powerful indices for competitive advantage relative to other three elements. Upper levels of competitive capability can lead to better organizational performance. Organizational performance is affected more by competitive advantage than by supply chain management practices.
Swink et al. (2007)	Different industries in North America	-Cost efficiency -Quality -Delivery -Process flexibility -New product flexibility	-Market performance -Customer satisfaction	Quality, delivery, and new product flexibility are associated with enhanced market performance. Also, delivery and quality capabilities are considerably related with more customer satisfaction. In contrast, cost capability is negatively related with both aspects of business performance.
Mzoughi et al. (2008)	Different industries in Tunisia	-Price -Quality -Time to market -Innovation -Reliability of delivery	-Financial performance -Market performance	From the aspects of competitive capability, only time to market has positive effect on financial performance.
Kim (2009)	Different industries in Japan and Korea	-Cost leadership -Customer service -Innovative marketing technology -Differentiation	-Market performance -Financial performance -Customer satisfaction	Interactive relation between competitive capability and practical capability of supply chain has direct relationship with the firm performance in Japanese firms, but this relationship is indirect- through supply chain integration- in Korean firms.
Oghazi (2009)	Different industries in Sweden	-Cost leadership -Customer service -Innovative marketing -Differentiation -Focus strategy	-Market performance -Financial performance -Customer performance	Competitive capability has direct positive effect on firm performance.

Table 2. Measurement model fit, CR, and Cronbach's alpha

Latent variable	Items		Factor loading	Error variance	Composite reliability***
Competitive capability	CL	CC1	0.68	0.54	0.910
(0.94)*	(Q_1-Q_3)**	CC2	0.73	0.47	
		CC3	0.75	0.44	
	DF	CC4	0.87	0.24	
	(Q_4-Q_7)**	CC5	0.89	0.21	
		CC6	0.70	0.50	
		CC7	0.75	0.44	
Firm performance	CSFP	FP1	0.98	0.04	0.934
(0.81)*	(Q_8,Q_9)**	FP2	0.75	0.43	
	FFP	FP3	0.67	0.56	
	(Q_{10},Q_{11})**	FP4	0.79	0.37	
	MFP	FP5	0.94	0.11	
	(Q_{12},Q_{13})**	FP6	0.86	0.26	
Perceived environmental uncertainty	SEU	EU1	0.57	0.67	0.719
(0.73)*	(Q_{14},Q_{15})**	EU2	-0.64	0.59	
	MEU	EU3	0.67	0.55	
	(Q_{16}-Q_{18})**	EU4	-0.59	0.65	
		EU5	0.81	0.34	
	DEU	EU6	0.89	-0.21	
	(Q_{19}-Q_{21})**	EU7	0.58	0.66	
		EU8	0.77	0.41	

* Cronbach's alpha (internal consistency measure of reliability)

** Survey Questions (Q_1-Q_{21})

*** Composite reliability=$(\Sigma\lambda_i)^2/[(\Sigma\lambda_i)^2+(\Sigma\delta_i)]$

Note 1: Cronbach's alpha coefficient of the whole questionnaire is 0.83.

Note 2: All measurement scales were five-point Likert-type scales. Measurement scales for "Competitive capability" and "Firm performance" were anchored (1) extremely low to (7) extremely high.

Table 3. Validity tests of measurement variables for each latent variable

Latent variable	X^2 Value	df	RMESA	GFI [a]	AGFI [b]	NFI [c]
Competitive capability	35.33	13	0.074	0.91	0.89	0.93
Firm performance	3.87	6	0.000	0.95	0.95	0.97
Perceived environmental uncertainty	34.35	17	0.070	0.92	0.90	0.94

Note: χ^2/df ≤3, RMSEA≤ 0.08, [a] Goodness of fit index (≥0.9), [b] Adjusted goodness of fit index (≥0.9), [c] Normed fit index (≥0.9), P≤0.05.

Table 4. Descriptive statistics and inter-correlations of constructs

		Mean	Standard Deviation	Correlation			
				(1)	(2)	(3)	(4)
Competitive Capability	Cost Leadership (1)	3.6518	0.853				
	Differentiation (2)	3.6024	0.947	0.781*			
Firm Performance	Customer Satisfaction (3)	3.3256	1.034	0.376*	0.377*		
	Financial Performance (4)	3.0640	0.920	0.476*	0.442*	0.052*	
	Market Performance (5)	3.2965	1.004	0.358*	0.368*	-0.117*	0.537*

Note: * Indicates Significance at the 0.01 level (two-tailed).

Table 5. The main hypotheses testing results

	Paths	Standardized path coefficient (t-value)	Outcome
H_1	Competitive capability influences on customer satisfaction	0.39 (3.44)	Supported
H_2	Competitive capability influences on financial performance	0.62 (4.35)	Supported
H_3	Competitive capability influences on market performance	0.46 (3.51)	Supported

Note: Fit indices: χ^2=39.23, df=17, P-value=0.00000, RMSEA=0.073, GFI=0.94, AGFI=0.91, NFI=0.97. * P≤0.05.

Table 6. The sub-hypotheses testing results

	Paths	Standardized path coefficient (t-value)	Outcome
H_{1a}	Cost leadership capability influences on customer satisfaction	-0.52 (-1.62)	Rejected
H_{1b}	Differentiation capability influences on customer satisfaction	0.97 (3.00)	Supported
H_{2a}	Cost leadership capability influences on financial performance	0.95 (2.56)	Supported
H_{2b}	Differentiation capability influences on financial performance	-0.87 (-1.99)	Supported
H_{3a}	Cost leadership capability influences on market performance	0.99 (3.14)	Supported
H_{3b}	Differentiation capability influences on market performance	-0.98 (-2.36)	Supported

Note: Fit indices: χ^2=125.14, df=58, P-value=0.00000, RMSEA=0.071, GFI=0.91, AGFI=0.93, NFI=0.96. * P≤0.05.

Table 7. Investigating the moderator effect of perceived environmental uncertainty

Moderating Effect on the Relationship between:	Values of U_0	Compare with Chi-square	Results
Cost Leadership --- Customer Satisfaction	0.049	3.84>0.049	Rejected
Cost Leadership --- Financial Performance	6.112	3.84<6.112	Supported
Cost Leadership --- Market Performance	6.385	3.84<6.385	Supported
Differentiation --- Customer Satisfaction	5.645	3.84<5.645	Supported
Differentiation --- Financial Performance	0.152	3.84>0.152	Rejected
Differentiation --- Market Performance	2.379	3.84>2.379	Rejected

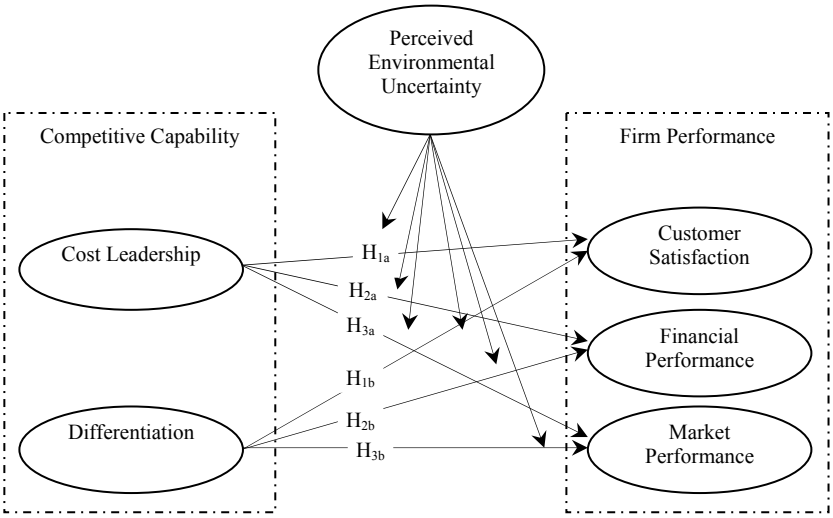

Figure 1. Proposed Model

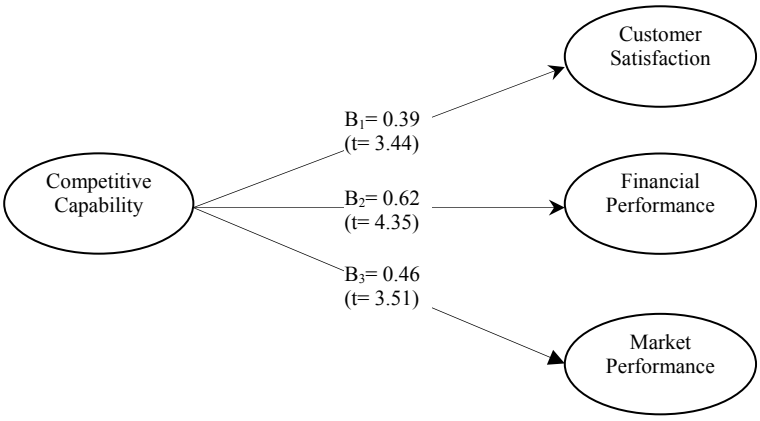

Figure 2. The main hypotheses with path coefficient

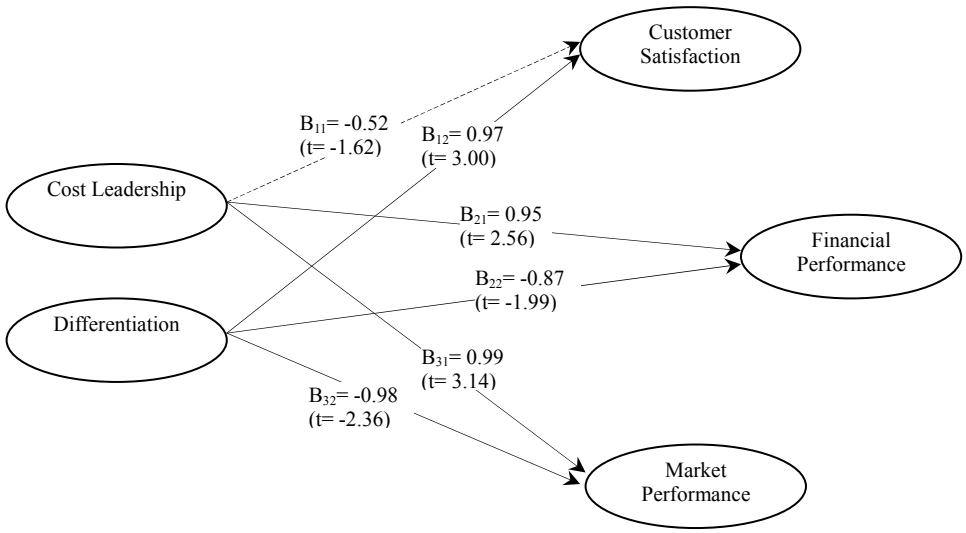

Figure 3. The sub-hypotheses model with path coefficient

Appendix A: Constructs and their related dimensions

1. Competitive Capability (CC)

1.1 Cost Leadership (CL)

CL1: The capability to procure raw-material consistently (Kim, 2006, 2009; Oghazi, 2009)

CL2: The capability to reduce production cost (Kim, 2006, 2009; Oghazi, 2009)

CL3: The capability to reduce communication and transaction costs (Oghazi, 2009)

1.2. Differentiation (DF)

DF1: The capability to develop and introduce new product (Kim, 2006, 2009)

DF2: The capability to differentiate product through innovative design (Hosseini Baharanchi, 2009)

DF3: The capability to differentiate product through quality (Hosseini Baharanchi, 2009)

DF4: The capability to expand product line (Kim, 2006, 2009; Oghazi, 2009)

2. Firm Performance (FP)

2.1. Customer Satisfaction (CSFP)

CSFP1: The quick response for product design changes (Kim, 2006, 2009)

CSFP2: The quick response for product volume changes (Kim, 2006, 2009)

2.2. Financial Performance (FFP)

FFP1: Total cost reduction ratio (Kim, 2006, 2009; Oghazi, 2009)

FFP2: Return on investment ratio (Kim, 2006, 2009; Oghazi, 2009; Li et al., 2006; Tracey et al., 2005; Vickery et al., 2003)

2.3. Market Performance (MFP)

MFP1: Sales growth (Kim, 2006, 2009; Oghazi, 2009; Tracey et al., 2005; Swink et al., 2007)

MFP2: Market share growth (Kim, 2006, 2009; Oghazi, 2009; Li et al., 2006; Tracey et al., 2005)

3. Perceived Environmental Uncertainty (EU)

3.1. Supply Environmental Uncertainty (SEU)

SEU1: Stability of quality of critical material (Merschmann and Thonemann, 2010; Sun et al., 2009; Wong and Boon-itt, 2008; Fynes et al., 2004; Ho et al., 2005)

SEU2: Delivery frequency of critical material (Merschmann and Thonemann, 2010; Ho et al., 2005)

3.2. Manufacturing Environmental Uncertainty (MEU)

MEU1: The speed of changes in production technology in industry (Wong and Boon-itt, 2008; Fynes et al., 2004; Boon-itt and Paul, 2006)

MEU2: The repair and maintenance capability for existed machinery in product line by internal facilities (Based on the data from preliminary interview with academics and executives)

MEU3: Frequency of engineering redesign in production process (Merschmann and Thonemann, 2010; Ho et al., 2005)

3.3. Demand Environmental Uncertainty (DEU)

DEU1: Variation of sales channels (Ho et al., 2005)

DEU2: Number of sales channels (Merschmann and Thonemann, 2010; Ho et al., 2005)

DEU3: Frequency of sales channels changes (Merschmann and Thonemann, 2010; Ho et al., 2005)