Analyzing The Relationship Between Business Environment Characteristics And Competitive Priorities Of Manufacturing Enterprises: Insights From An Emerging Economy

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Abstract

This research aims to analyze the relationships among two basic factors namely business environment characteristics and competitive priorities. The researcher has used both primary and secondary data for this research. Five point Likert scale is used to collect data. This study is made on scheduled interview method and the data collected that are based on Simple Random sample method from 365 manufacturing firms. Before performing the analysis, the researcher has checked the Cronbach alpha, Communality and Normality. In this research, some modern and sophisticated statistical tools like Confirmatory Factor Analysis and Structural Equation Modeling are used to analyze and interpret the data. For that, the researcher has used SPSS and LISREL 8.72 software packages to analyze the data. The author has found that there is a significant relationship among the business environment characteristics and Competitive Priorities manufacturing industries.

Keywords: Competitive Priorities, Quality, Cost, Manufacturing and Confirmatory Factor Analysis.

Introduction

Any business is affected by numerous factors, some of which may be controllable while others are uncontrollable. Invariably, the uncontrollable factors remain out of control of the
business managers in the short run whereas in the long run, these factors can be countered by framing and executing suitable strategies in accordance to the changing Business Environment Characteristics (BEC).

Business environment of manufacturing enterprises consist of vitality, intricacy, assortment and largesse (Ward et al., 1995; Mintzberg, 1979; Harris, 2004; Dess and Beard, 1984). The aforesaid issues are most important aspects of business environment with regard to strategic decision-making, (Lawless and Finch, 1989). Vitality (dynamism) is the speed at which change occurs in the environment in which firms operate due to technological advancements, competition and change in customer needs and wants. Intricacy (complexity) refers to the acquaintance to be possessed by the firms about their products and customers. Assortment (Diversity) is the nature of homogeneity or heterogeneity of the environment in which the business firms are supposed to operate. Largesse (munificence) refers to the threats and opportunities provided to the business firms by the environment in which they operate. Impact of business environment on business performance has been extensively studied in the past by eminent researchers such as (Van Dierdonck and Miller, 1980; Skinner, 1969; Hofer, 1975).

Judge and Douglas (1998) has found out that enterprises which are able to effectively manage their external and internal environment through efficient strategies can alone manage to achieve good financial and non-financial performance.

Krajewski and Ritzman (1996) included conditions of economy, scientific advancements, political environment, resource availability, supplier and buyer strengths and weaknesses and social dimensions into the environmental concerning issues.

Heizer and Render (1993) has stated that environment shall consist of fiscal and monetary conditions, artistic (cultural), scientific (technological), personalized and political conditions.

Badri et al. (2000) has increased the scope of environment to engulf six issues which are beyond the control of the business administration atleast in the short-run. These issues are dynamism, political considerations, cost associated, availability of labour, Government laws and regulations and Competitive hostility in the business environment.

Dornier et al. (1998) found out that government rules and policies significantly influence the operational efficiency of business enterprises. They are of the opinion that the global environment is often troublesome due to ever-changing political circumstances.
Taylor and Gutfeld (1992) express the necessity of enterprises to adjust their operations to accommodate to the changing governmental regulations caused due to change in governments.

The importance of business strategies to enhance the competitive spirit and business performance of business firms have been a point of extensive and serious discussion (Lankoski, 2000; Porter and van der Linde, 1995; Bragdon and Merlin, 1972; Palmer et al. 1995; Prabhu and Nambirajan, 2010).

**Literature review**

BEC significantly influences manufacturing strategies and firm development. Improbability and turmoil are the features associated with business environment and enterprises have to formulate strategies to cope up to these conditions. Not many studies have been conducted to explore the effect of BEC on CP (Swamidass and Newell, 1987; Prabhu and Nambirajan 2016). Available literatures reveal that CP of manufacturing enterprises has significant relationship with BEC. BEC significantly influences CP strategies of any undertaking (Hambrick, 1983; Nambirajan and Prabhu, 2011).

Kwasi Amoako-Gyampah, (2003) examined the effect exerted by business environmental domains such as labor availability, business costs, competitive hostility, and environmental dynamism on manufacturing strategies domain consisting of flexibility, low cost, quality and delivery dependability. The author explored the influence exerted by the features of firm size and degree of foreign ownership on manufacturing enterprises of Ghana by conducting a survey on 58 manufacturing enterprises spread over nine industries. The author used the statistical tool of Regression Analysis to explore the relationship between business environment domains and manufacturing strategies. Results revealed that there is a significant relationship between business environmental variable and each manufacturing strategy component.

Ting Chi et al. (2009) conducted a study on 202 US enterprises in the textile industry and analysed the relationship among BEC, CP, SCS and BP of these enterprises. They used the four factors of Diversity, Complexity, Hostility and Dynamism to measure the BEC, while they used the four factors of low cost, quality, delivery and flexibility to assess the CP of the enterprises. They used the five important financial variables of market share, sales growth, profit margin, return on assert and return on investment to measure the BP, while they used ten variables to predict the supply chain structures. The authors segregated the enterprises into two groups of
“High Performing Group” and “Low Performing Group” and applying SEM, they found out that high performing enterprises had significant relationship with these domains while the low performing enterprises did not have any such relationship.

Macarena et al. (2005) conducted a study on 20 Spanish enterprises in the aeronautical sector to analyse whether size of the firms exerted any impact on their CP, AMT (Advanced Manufacturing Technology) and PMS (Performance Management System). They measured the CP domain using the four factors of cost, quality, delivery and flexibility, while they used the factors of Design AMT, Manufacturing AMT and Planning AMT to measure the AMT. They further used 20 other variables to measure the business performances of the enterprises. Applying the t-test and correlation analyses, they found that size of the firm exerts a significant impact on PMS, AMT and BP of the enterprises.

Ward et al. (1995) studied the relationship between environmental factors and operational strategies formulated by Singapore manufacturing industries. The authors used the variables of competitive hostility, business cost, labor availability, environment and dynamism under environmental factors and Flexibility, low cost, quality and dependability under competitive priorities and used Profit after Tax to analyse the performance of the enterprises. The study revealed that environmental concerns had a significant bearing on the crafting of operational strategy and those undertakings which are able to craft different operational strategies to cater to different environmental situations will be able to perform well. The study also revealed that the close relationship between environment and operational strategy formulation facilitated enhanced performance of enterprises. Based on the above literature, the researcher has developed a tentative model to display the link among BEC and CP. This tentative model shall be tested in the proposed study. This study also tries to find the factors which are helping the enterprises to perform successfully in this region from operational perspective. The objective of the study is to measure the relationship between business environment characteristics and competitive priorities of manufacturing firms. Based on this model, the researcher has formulated Hypothesis which states that “There is no significant relationship between BEC and CP”.

BEC & CP MODEL


RESEARCH METHODOLOGY

This chapter shall elaborate on the methodology adopted by the researcher to conduct the proposed study. Both primary and secondary data have been used for this research. Primary data was collected using a well-structured questionnaire, which was administered personally to the executives of manufacturing undertakings in the Union Territory of Puducherry. Secondary data was collected from the findings of Published Papers, Articles, Books, Prior Studies, Organizations’ Bulletins, Annual Reports of the manufacturing units and from various web sites. The sample technique used for the study is Simple Random sampling method and 365 sample units were drawn to analyse the data. Both traditional and sophisticated statistical tools were applied for data analysis. The data collected were fed in to Excel sheet and the statistical packages of SPSS 19 Version and LISREL were employed. The statistical tools of Confirmatory Factor Analysis and Structural Equation Model were used to analyse the data and arrive at meaningful conclusions.
The next step is to test the reliability of the schedule. Reliability shall reveal the accuracy and consistency of the results from the survey instrument. In addition to testing the reliability, the researcher has also tested the Communality, which measures the percent of variance explained by the factors in a given item. Furthermore, the researcher has tested the Normality, which indicates the normal distribution of the data. While plotting the data in a graph, if a bell shaped curve is arrived at, then the mean value is 0 and the value of standard deviation is 1, which indicates that there is a standard normal distribution of the data (Lewis-Beck, Bryman & Liao, 2004; Groebner & Shannon, 1990). Testing Normality is absolutely important for multivariate data analysis (Hair et al. 2006).

The value of Cronbach's α coefficient of all the factors included under the BEC domains range from 0.834 to 0.903. This establishes the reliability of all the factors included under the BEC domain. It can be inferred that the Cronbach's α coefficient of all the items included under the Competitive Priority domain range from 0.804 to 0.916. This indicates that all the items included under the six factors of the CP domain command good degree of internal consistency. Further, the estimated value of Cronbach’s Alpha value exceeds the “Alpha if Item Deleted" value in respect of all the items, and hence all the items can be included for the study.

Analysis

Exploring the relationship between BEC and CP

Hypothesis relates to the relationship between BEC and CP. Figure 1 portrays the results of the six domains relating to BEC and the six domains relating to CP in the overall CFA model.
Figure 1 Overall CFA model

The CFA model for testing Hypothesis pertains to the ascertainment of the relationship between BE C and CP. The results in respect of $X^2 (3618.39)$, $P (0.00)$, $X^2/df (2.76)$, GFI (0.89), AGFI (0.88), CFI (1.00) and RMSEA (0.071) reveals that there is an excellent fitness of the proposed CFA model.

**Relationship between BEC and CP**
Figure 2: SEM for relationship between BEC and CP
Hypothesis pertains to the testing of relationship between BEC and CP. The results in respect of $X^2 (3618.39)$, $P (0.00)$, $X^2 df (2.76)$, GFI (0.89), AGFI (0.88), CFI (1.00) and RMSEA (0.071) reveals that the fitness of the model is excellent. The results in respect of the goodness of fit reveal that the structural model exploring the relationship between BEC and CP has satisfied five criteria out of the required six. Despite the $P$ value being less than the required requisite of 0.05, the model is acceptable due to the complexities associated with the $X^2$ statistics, which happens to be receptive to the sample size. Figure 2, displaying the results of the SEM, indicates the value of path loadings as 0.88, implying its consistency, and $t$-value of 9.13 and $p$ value being less than 0.01 reveals that BEC exerts a significant and positive impact on the Competitive priorities. Hence, it can be observed that the variables in respect of BEC (Business cost, Labour availability, Competitive hostility, Government laws and regulations, Political environment and Dynamism) exerts a significant impact on the variables included under CP (Quality, Cost, Delivery, Flexibility, Customer focus and Know how).

Conclusion

BEC exerts significant impact on the CP of the manufacturing enterprises. Hence, Hypothesis is accepted. The results of this study is in absolute conformity with the results of Ward et al. (1995), Kwasi Amoako-Gyampah, (2003), Ting Chi et al. (2009) and Badri et al. (2000) which indicated that environmental characteristics have a strong relationship with the Competitive priority of enterprises. It can be concluded that studies conducted both in developed and developing countries such as US and Ghana are yielding quite similar results with the study conducted in Puducherry.

Of the six factors of BEC, Business cost exerts maximum impact on CP, followed by Dynamism, Labour Availability, Competitive Hostility, Government Laws and Regulations, and finally, Political Environment. Though Dynamism seems to be the second best factor to impact CP, Ward et al. (1995) found that Dynamism is the best factor to impact the CP whereas business cost does not exert any significant impact on CP. The manufacturing firms in Puducherry are attaching maximum importance to cost aspect probably due to the increasing operational cost and the feature of Indian consumers who are highly cost-conscious.

However, Amoako-Gyampah and Boye (2001) found that Competitive Hostility is the major factor having significant impact on the CP of manufacturing firms, though this study
places the factor at last but two places. This is quite interesting as Ghana firms seem to place much importance to demand for and quality of their products, whereas Puducherry firms are quite confident about the quality of their products and also about the demand potentials of their products, both in the local and international markets.

Reference


