

The relationship between manufacturing strategic decisions, competitive priorities and firm performance in the automotive supply industry of Iran

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Abstract

Manufacturing strategic decisions and competitive priorities have effects on competitive advantage of firms. The focus of this study is on the relationship between the manufacturing strategic decisions and competitive priorities and its influence on the firm's performance in the automotive supply industry of Iran. A survey has been conducted by the means of a questionnaire to collect data. Data was analyzed by descriptive and inferential statistics (bivariate correlation and multiple linear regression). In this study, after classifying the manufacturing strategic decisions (according to competitive priorities), its influence on the fulfillment of competitive priorities and business performance has been distinguished. Findings indicated that some of the decisions had more effects on profit, cost, quality, flexibility and delivery capabilities.

Keywords: Manufacturing strategy, Competitive priority, Manufacturing strategy decision, Manufacturing capability

Introduction: The manufacturing strategy seeks to answer the question "How to compete" (Voss, 2005). Competitive priorities and manufacturing strategic decisions are the most important components of the manufacturing strategy. The importance of making manufacturing strategic decisions should be sought in resource constraints. In other words, organizations have to choose the goals and priorities, and in order to fulfill them, they should be able to choose the most effective measures that on the one hand fulfill their priorities with least using resource, and, on the other hand, by doing so, improve their total business performance, such as profitability (Größler, 2010).

In this study, after clarifying the competitive priorities in the automotive supplier industry and its relevance to the decisions made by the companies, two fundamental questions are answered. First, whether decisions made to fulfill competitive priorities have the maximum influence on generating manufacturing competence and competitive potentials, and that there is a combination of strategic manufacturing measures that if organizations pay attention to them, they will be able to better fulfill competitive capability. After answering the first question, the second question seeks to answer whether decisions that have the most influence on the fulfillment of competitive priorities have the maximum influence on total performance of companies.

Literature on studies performed on manufacturing strategy can be distinguished in different categories. In the first category, the relationship between competitive priorities (or capabilities) and the importance and type of relationship they have with each other has been examined. In the second category, companies have been classified (clustered) according to competitive priorities and the

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performance of each cluster has been examined. In the third category, structural and infrastructural decisions have not been omitted and in fact, they have been considered as a part of the manufacturing strategy (McCarthy, 2004). In addition, some researchers have studied the best practice companies (Shah & Ward, 2003; Voss, 2005).

Methodology/Approach: Considering the field's relationship with the research question and access to information, active companies in the automotive supplier industry of Iran are selected as the statistical community. With regard to the subject and the possibility of better access to the suppliers, a list of companies in Sapco and Sazehgostar was prepared. The questionnaire was sent to all 215 companies in the list and 48 companies responded, which means a response rate of over 22%. In this study, measurement is used to collect data and information about competitive priorities, manufacturing strategic decisions and performance. For this purpose, a questionnaire is used. Spearman correlation coefficient is used to find the relationship between competitive priorities and manufacturing strategic decisions. Also, to investigate the effect of manufacturing strategic decisions on companies' performance (including cost, quality, flexibility, delivery) and business performance (including profitability, return of investment rate, sales growth and market share), multiple linear regression is used. In this study, a stepwise approach is used.

Findings and Discussion: In this study, after identifying the common manufacturing strategic decisions in the automotive supply industry to meet their competitive priorities, the influence of such decisions on the fulfillment of competitive priorities was studied. Since the influence of such decisions on the fulfillment of competitive priorities was less than what expected to be, efforts were made to identify those decisions that had the most influence on the fulfillment of competitive priorities. After identifying such decisions, they were referred to as the best manufacturing strategic decisions (Table 1).

Table1. The influence of common strategic decisions and best strategic decisions on the performance of competitive priorities

Competitive priority	Best manufacturing strategic decisions	R	R ² _{adj}	Sig.	Manufacturing strategic decisions in the model	Sig.
Cost	---	---	---	---	---	---
Quality	Supplier relationship management QFD	0.600	0.329	0.000	Supplier relationship management	0.001
	Quality management system (ISO 9000) Computer-based technology (CAPP,CAD, CAM)				Computer-based technology (CAPP,CAD, CAM)	0.038
Flexibility	FMS Kanban QFD TQM	0.697	0.446	0.000	Kanban QFD	0.007
	Computer-based technology (CAPP,CAD, CAM)				Computer-based technology (CAPP,CAD, CAM)	0.032
Delivery	Kanban MRP & MRP2 TPM JIT	0.790	0.568	0.000	Kanban Employee motivation TPM	0.000
	Industrial automation (AMHS, AGV, DNC, AS/RS) Employee motivation ISO-TS				MRP & MRP2 Industrial automation (AMHS, AGV, DNC, AS/RS)	0.005 0.017 0.037

After clarifying the influence of common strategic decisions and best strategic decisions on the performance of competitive priorities, it was necessary to clarify the effect of both of these decisions on business performance. Profitability was the only index among the indexes of business performance that was significant in the calculation. In Table 2, the influence of both common and best decisions on profitability is addressed.

Table2. The influence of common strategic decisions and best strategic decisions on the business performance

Manufacturing strategic decisions	Common decisions		Best decisions	
	R	R ² _{adj}	R	R ² _{adj}
Cost	0.322	0.081	---	---
Quality	0.535	0.268	0.375	0.120
Flexibility	0.464	0.193	0.543	0.259
Delivery	0.588	0.315	0.682	0.419

Conclusions

The main aim of this study was to find the relationship between manufacturing strategic decisions, competitive priorities and its influence on the performance of companies in the automotive supply industry of Iran. For this purpose, three subjects of competitive priorities, manufacturing strategic decision and business performance were analyzed. Identifying and counting competitive priorities was the first step in achieving the main aim of study. In this paper, four priorities included cost, quality, flexibility and delivery. Then, the decisions that the companies made in order to fulfill their competitive priorities were identified and its effect on the achievement of competitive priorities was observed. It was found that although the common manufacturing strategic decisions of the automotive supply industry had a positive effect on the fulfillment of competitive priorities, they would not help companies in fulfilling their competitive priorities as expected.

After identifying the low influence of common manufacturing strategic decisions on the creation of competitive capability in companies, an attempt was made to identify those combinations of decisions that had the most influence on the creation of competitive capability. Thus, the best manufacturing strategic decisions on competitive priorities were determined and categorized.

Best manufacturing strategic decisions in comparison with common manufacturing strategic decisions, in addition to having a greater influence on the fulfillment of competitive priorities, had the capacity to increase the profitability of companies (with the exception of one case). Regarding the above mentioned finding, it seems that the manufacturing strategic decisions are influenced by competitive priorities to gain more profit, and the fulfillment of competitive priorities cannot justify the profitability of companies alone. It is desirable that other factors affecting profitability should be identified and investigated in future study.

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