

The Effect of Supplier Manufacturing Capabilities on Buyer Responsiveness

Habibollah Javanmard¹⁺, Khadijeh Omidinasab²

^{1,*} Assistant professor, Islamic Azad University, Arak branch, Arak, Iran

² Department of Industrial Engineering, Islamic Azad University, Arak Branch, Iran

Abstract - The present research aims at exploring the impact of supplier capabilities and their collaboration on buyer responsiveness. The research sample includes production workshops located in Lorestan and Hamedan Provinces in Iran which have been studied during a four month period. In order to relate supply flexibility and responsiveness and also to model the effect of supplier collaboration on buyer responsiveness, four hypotheses have been developed and examined correspondingly. The Structural Equation Modeling (SEM) and the path analysis are used in testing the research hypotheses applying LISREL software, version 8.5. The results reveal that production flexibility, supplier responsiveness, production modularity and supplier collaboration have a positive and meaningful impact on the buyer responsiveness.

Keywords: buyer responsiveness; competitive advantage, supplier collaboration.

1. Introduction

Development of global competition coupled with consumer intolerance to slow innovation and homogenized products have raised the profile of manufacturing responsiveness. In this broad sense, responsiveness refers to the speed with which action is taken in response to changing customer needs in an effective and profitable manner [1]. Whereas academic research has traditionally focused on the critical internal attributes and capabilities that affect an organization's level of responsiveness [2,3,4], recent studies have extended the scope to include aspects of the supply chain [5]. This development implicitly hangs on the notion that internal capabilities are a necessary but not sufficient condition for responsiveness and that external supply networks will also have a significant effect [6].

This perspective clearly resonates with recent theorizing within the resource-based view (RBV) of the firm. Whereas the traditional view holds that competitive advantage is exclusively a function of internal capabilities [7], more recent studies hold that both internal and external capabilities are important to performance [8,9]. This change in emphasis has led to the term "extended resource-based view" (ERBV) and is explicitly used within this paper to emphasize the need to consider the impact of suppliers' capabilities on buyer firm performance. We suggest that three supplier manufacturing capabilities, namely responsiveness, flexibility and modularity, have a direct effect on buyer firm performance as measured by levels of customer responsiveness.

In such a relation, both parties (supplier and buyer) share their information and so the buyer is able to transmit customer's required changes to the supplier or the buyer through this collaboration learns about the supplier capabilities. Such relationship, however, makes the buyer company more responsive to its customers. But in the absent of such a relation, the buyer is not able to meet customers required changes and thus lacks its needed responsiveness. Supplier flexibility is defined along two dimensions: Volume flexibility and Mix

⁺ Corresponding author Tel.: 09183601930 . E-mail address: h-javanmardha@iau-arak.ac.ir

flexibility. Previous studies have shown that responsiveness to the customer is an important determinant of competitive advantage [10] and is influenced by supplier relationships [11].

Regarding the products high demand and wide supply range, it is essential for such units to look for better responsiveness because the company's or organization's success strongly depends on the customer satisfaction. The units are as a part of one or more supply chain(s), so it is required to examine other effective factors on these workshops' responsiveness. Therefore, it is imperative to examine whether the supplier production capabilities and their collaboration have any impact on these production units (buyers) responsiveness.

2. LITERATURE REVIEW

2.1. Competitive advantage concept

The competitive advantage has changed to a focal point in competitive strategy discussions during the recent years and plenty of arguments have been developed about the topic. Despite of this, it is very difficult to present an exact definition for the competitive advantage. In one hand, some researches have termed it as an unusual output; and in other hand, some have related it to expectations and capital market performance. However, the most popular definition is presented in the competitive strategy realm and value-adding framework: the competitive advantage causes the income to increase more than expenditures [12].

Sanoner, Shephard and Poudoneli [13] remark that the competitive advantage means the firm's ability to produce some services/products which customers know them as having higher value than other competitors' services/products. Porter [14], on the other hand, focuses on the competitive advantage based on the competitive strategy framework. He posits that the competitive strategy is about finding the firm's position in its competitive environment.

Barney [15] states that a firm will achieve the competitive advantage if its activities in the industry or market create some economic value and also if a few competitors imitate such activities. He relates the competitive advantage to the firm's performance and believes that a firm will achieve to its higher than normal performance when it can create more value than what is expected from its available resources.

2.2. Developing an ERBV of the firm

Given that markets for resources (strategic factor markets) are necessarily incomplete [16], the traditional RBV holds that only proprietary resources developed within the boundaries of the firm can create supernormal profits [17]. Recent studies, however, question this restrictive assumption, insofar as there exists a growing recognition that some strategic resources may lie beyond the boundaries of the firm [18], and that a network of inter-firm relationships may also explain competitive advantage [19]. This change in emphasis has been termed the "extended resource-based view of the firm" [20]. Recognition of the extended RBV arguing that competitive advantage is derived from both internal and external assets, has led to the study of resources outside the boundaries of the firm. Recent work, particularly within the strategic management field, has emphasized the inter-firm relationship as a means to acquire external resources and capabilities [21,22]. The external relationship thus acts as a vehicle to acquire those resources required to fill a particular "resource gap" [23], defined as the difference between a firm's strategic goals and its current resource endowments [24]. Examples of external resource acquisition include both intangible resources such as the transfer of knowledge [25], R&D capabilities [26], and tangible resources such as technology [27].

Less attention has been given to the role of inter-firm relationships in accessing external resources and capabilities. A firm may choose to access an external resource to improve performance where it is considered that integration or acquisition is inefficient or unwarranted. By exploiting complementarities in capabilities, access relationships enable firms to increase customer-perceived value while retaining distinctive capabilities within the firm boundaries. If we accept this extension, competitive advantage becomes attributable to both the unique resources and capabilities of the firm, as well as those firms within its network. This strongly suggests that the unit of analysis of the RBV should be adjusted from the level of the firm to the dyadic or network levels and that firm level accounts of competitive advantage may not offer a complete picture where external resources and capabilities also help to explain performance differentials [28].

3. Conceptual Model And Hypotheses

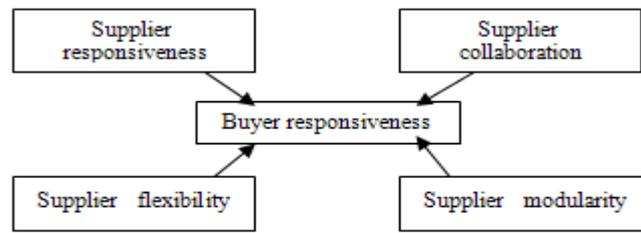


Fig. 1: Conceptual model

- H1- Supplier firm responsiveness positively effects buyer firm responsiveness.
- H2- Supplier firm flexibility positively effects buyer firm responsiveness.
- H3- Supplier firm modularity positively effects buyer firm responsiveness.
- H4- Collaboration firm positively effects buyer firm responsiveness.

4. METHOD

The research geographical limit includes Lorestan and Hamedan Provinces. Among the furniture stores in these two provinces, the selected ones for the study have their own workshops. The 5-point Likert scale has been used in measuring the research variables based on corresponding questionnaire. The content validity and confirmatory factor analysis are employed to measure the questionnaire validity. Following its distribution among 20 subjects of the studied sample, the questionnaire reliability is measured using the Cronbach alpha method (0.885) and then its high reliability is confirmed.

5. Analysis

5.1. Fitness Test

The path analysis has been used to test the research hypotheses. The path diagram is a tool to display which variables have created some changes in the other considered variables. If the model depicted in the path diagram format is confirmed by the model fitness indexes, then the path diagram will be used in testing the proposed hypotheses to find the casual relationship between the variables depicted in the path diagram. So it is necessary to examine the χ^2 / df statistics (χ^2 to degree of freedom ratio) and other goodness of fit criteria. With respect to the LISREL software's outputs, the χ^2 to degree of freedom ratio is 0.885. The ratio is low enough to indicate the model's good fitness because the lower the value is, the more appropriate the model would be.

TABLE I. FITNESS TEST RESULTS

Index name	Index standard	Index value in model	Conclusion
χ^2 / df	Less than 2	1.27	The model fitness is good
RMSEA	Less than 0.1	0.052	The model fitness is good
RMR	Less than 0.1	0.066	The model fitness is good
CFI	More than 0.9	0.95	The model fitness is good
NNFI	More than 0.9	0.94	The model fitness is good
IFI	More than 0.9	0.95	The model fitness is good

5.2. Hypotheses Testing based on SEM and path analysis

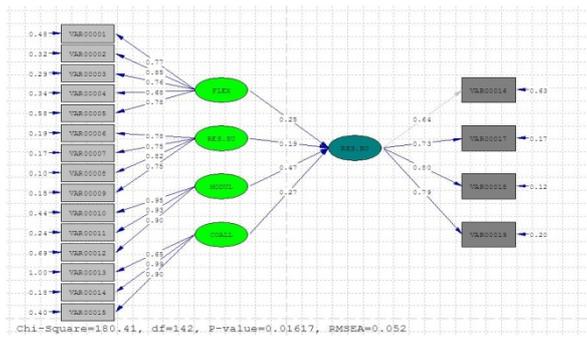


Fig.2: Output lisrel, About Standard models measure the coefficient research

TABLE II. HYPOTHESIS TEST RESULTS

Hypo. No.	Hypo, description	Standard Coefficient	t-value	Conclusion
H1	Supplier firm responsiveness positively effects buyer firm responsiveness	0.52	3.11	Confirmed
H2	Supplier firm flexibility positively effects buyer firm responsiveness	0.19	2.18	Confirmed
H3	Supplier firm modularity positively effects buyer firm responsiveness.	0.47	3.75	Confirmed
H4	Collaboration firm positively effects buyer firm responsiveness	0.27	2.72	Confirmed

6. Discussion And Conclusion

Some of the studies had solely focused on the internal resources ignoring other external factors and their impacts on the firm's performance. The research results underline the need to identify and consider special strategic resources which are beyond the firm borders and so it extends the RBV.

The responsiveness has incredible effect on the competitive advantage. Some suppliers with higher production capability regarding flexibility, responsiveness and modularity have a positive impact on the buyer responsiveness. The obtained results confirm the research hypotheses and indicate that supplier collaboration and production capabilities are effective on buyer responsiveness. The research results also show that supplier collaboration improves the buyer responsiveness because the relationship not only is as a tool to access external resources but also is a value-added internal resource which creates competitive advantages [29].

7. References

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