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The Relationships between Supply Chain Integration and Product Quality

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Abstract

Information sharing is an essential tool or enabler for supply chain integration. Many researches have been done to investigate the effectiveness of information sharing in supply chain firms. Product quality is one important dimension of operational performance in supply chain management that seeks more attention from the community of researchers. Therefore consideration must be given to the development of collaborative activities between manufacturer, supplier and customer which enables firms to work together and improves in the product quality. So, studies which examine the effect of seamless supply chain on the product quality remain a research opportunity. This research after an overview on supply chain integration and product quality offers an integrated conceptual framework to examine the interaction of internal and external integration on product quality. The purpose of the study was to find out the related internal integration, customer integration and supplier integration effects on conformance quality and design quality on the manufacturing sector. It also aimed to propose an integrated conceptual framework between supply chain integration and product quality with the presentation of six hypotheses. The proposed conceptual model gives an application of the tools suitable for integration between firms and product quality.

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1. Introduction

Researchers have demonstrated that firms which collaborate and cooperate with other firms or create an inter-firm relationship with others will have better competitive advantages than those which do not [1-5]. Hence there are an increasing number of empirical studies and investigations devoted to the direct and indirect impacts of seamless supply chain on product quality and firm performance [1, 6-9].

Researchers have stated the need for an intimate, unified relationship among manufacturers and their supply chain members for a very long time [10]. Still, a methodical move to supply chain relationship is recently a very important to integrate among supply chain members. With the increase in global competition, organizations are forced to rethink their approach to information integration.

The existing researches on SCI, however, include meanings and aspects [11]. Some researches concentrate on each aspect of supply chain integration [12-14], especially customer and supplier integration, the other researches apply a variety of meanings to investigate supply chain integration as a unit construct [15, 16]. Furthermore, many conceptualizations of SCI do not include the central link i.e. internal integration, and hence are incomplete [2].

Enhancement of product quality and services of enterprises may offer add value for customers. By evaluating the improvements of the market, managers can rank these improvements. Hence, studies which test the impact of seamless supply chain on product quality that is an important competitive capability, remains a research opportunity.

The aims of the present study are (1) to overview supply chain integration and product quality (2) to propose a conceptual framework (3) to present the hypotheses.

2. Supply Chain Integration in Supply Chain Management

Since 1990s, the Supply Chain Management (SCM) has gotten more attention [17]. Since then many different and unique definitions of SCM have been published in books and articles; although all these can be defined using 3 main themes: benefits, activities, components and/or constituents. Each one of these three main themes can be further divided into other sub-themes. Benefits may be the increase in efficiency, value and customers' satisfaction [18]. While activities can include the flow of information and material and the internal and external flow of network relationships.

Supply Chain management in the eyes of Stadtler [19] was defined as the act of sharing information, material and financial information within the organizational units, so that it will meet the needs of the customer and lead to an enhancing of the entire supply chain involved.

Supply Chain Integration (SCI) can be defined by the amount of collaboration between a manufacturer and its supply chain partners as well as the extent to which a producer conducts internal and external organizational processes [2]. In this study, we consider internal integration, customer integration and supplier integration upon some researches [3, 20-22]. The seamless Supply chain may result in the effective gains and flows of services, money, information, products and decisions, with the goal of offering highest value to firm's customers [23].

Supply chain integration is divided into internal and external integration. The external integration is also divided into customer and supplier integration.

2.1. Customer Integration (CI)

Customer integration refers to acquiring technological, marketing, production and inventory information from the customers [24, 25]. Manufacturers can use these acquired information and customer requirements to produce products that meet users' preferences [2, 26, 27].

Customer integration is supply chain integration downstream. It is the outgoing set of products and services and the incoming set of data from customers to suppliers. Customer integration leads to creating a relationship with customers and hence gaining a better and clearer understanding of customers' preferences [23, 28].

Customer integration involves engaging customers' opinions in decisions about the production of the goods. It includes methods and ways to enhance coordination among the manufacturer and the customer, as well [23].

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