

Research Article

INTEGRATION OF SUPPLY CHAIN AND BUSINESS PERFORMANCE WITH A LONG-TERM RELATIONSHIP APPROACH IN THE SUPPLY CHAIN, INFORMATION TECHNOLOGY, AND INFORMATION SHARING IN SAMSUNG ELECTRONICS COMPANY IN IRAN

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ABSTRACT

The present study aimed to examine the integration of the supply chain and business performance with a long-term relationship approach in the supply chain, information technology, and information sharing in Samsung Electronics Company, Iran branch. In terms of objective, this research is applied, and in terms of nature and method, it is descriptive–survey. The statistical population included 510 personnel and employees of Samsung Electronics Company in the maintenance and repair unit of provincial agencies in Iran. Since the statistical population of this study is unlimited, Cochran's formula for unlimited populations was used; the sample size was determined to be 220. The data collection instrument was a standard questionnaire consisting of 33 questions, adapted from the study of Prajogo and Olhager (2014) and Liu et al. (2011). The results of structural equation modeling indicated that the supply chain integration variable has a direct relationship with the organizational performance variable in the sample of this study. The variable of the intensity of technological communication between the organization and its suppliers has a direct relationship with the supply chain integration variable in the studied sample. The variable of the intensity of information sharing between the organization and its suppliers did not have a relationship with the supply chain integration variable, and also the variable of long-term relationships with suppliers did not have a relationship with the technological communication variable between the organization and its suppliers. Finally, the results of the study showed that mediating variables such as interdepartmental coordination, ownership structure, and organizational size have a direct relationship with the relationship between supply chain integration and organizational performance.

INTRODUCTION

In recent years, the emergence of major transformations in global markets has made integrated supply chain management more necessary than ever. Accordingly, various organizations, to create and maintain their competitive position, are inevitably required to integrate supply chain management. The information revolution and the emergence of new forms of inter-organizational communications, as well as increasing customer expectations regarding product and service costs, quality, delivery, technology, and committed cycle time, along with increasing competition in global markets and similar factors, have led organizations worldwide to abandon traditional purchasing and procurement systems and move toward supply chain management systems (Stank et al., 1999). The most important reasons for the growing attention to supply chain integration management and its impact on performance, efficiency, productivity, and production capacity, etc., can include factors such as the increasing speed of technological change, globalization of trade, tendency toward external sourcing and outsourcing, and greater emphasis on quality, benefit, and customer satisfaction.

In the meantime, various researchers have sought to evaluate and identify the factors that cause supply chain integration. Various factors have been identified in this field. Attention to knowledge management in the supply chain, special attention to suppliers, the role of human resources, attention to the business marketing philosophy, etc., are among the factors that have been used to create greater integration in the supply chain. In this research, the special role of three factors, long-term relationships with suppliers, information technology, and information sharing, as factors that strengthen supply chain integration and its impact on improving business performance, has been considered.

Information technology plays a fundamental role in supply chain integration and in reducing its costs. For this purpose, comprehensive reengineering, which is an information technology-based approach, is used to optimize the supply chain. This approach introduces information technology as the nervous system of organizational processes (Jalani et al., 2005).

On the other hand, information sharing in the supply chain, as the most important success factor of a supply chain, refers to effective management of strategic alliances between supply chain segments, proper capability in data management, and advanced inter-organizational information systems for appropriate data exchange. This, in addition to increasing efficiency, also improves customer service levels. Investment in information sharing in the supply chain not only increases profits and improves the financial performance of the investing company, but also has a positive impact on the profitability and overall performance of all members connected to that company through the supply chain (Prajogo & Olhager, 2012).

The role of supplier relationships is also highly important in this regard. In the supply chain, the relationship between suppliers and the organization as an industrial buyer is of particular importance. Mutual trust, commitment, communication, and cooperation between these two parties lead to satisfaction, loyalty, and higher profits for both groups, and ultimately result in customer satisfaction (Abdolvand & Shamaei, 2009, p. 73). Supplier relationships benefit from indicators such as the extent of information sharing between the parties, examination of problems, and informal information exchange between parties (Mara, 2011).

Hosseini and Sheikhi (2013), in a study titled “Supply Chain Integration and Company Performance in the Iranian Food Industry,” have shown that supply chain integration does not have a direct effect on company performance. However, rather than this effect improving company performance through the intermediary variable of supply chain operations

management, including logistics, production, and distribution operations. Nazemi and Khashoggi (2012), in a study titled “The Effect of Integrated Supply Chain Dimensions on Competitive Capabilities in the Food and Beverage Industries of Mashhad,” show that internal integration is a prerequisite for external integration. The study also shows that internal integration and external integration have a positive effect on the company's competitive improvement capabilities.

A review of conducted research in the field of domestic studies shows that in all research related to supply chain, only the theoretical aspect of supply chain integration or the examination of its benefits for customers has been addressed, and its aspects affecting performance improvement have not been considered. Therefore, one of the innovative aspects of this research in domestic studies is the specific examination of the impact of two factors—supplier relationships and the quality of information technology and information sharing—on this integration and performance improvement. On the other hand, in this study, in the hypothesis development and model section, two valid foreign studies have been used, and to present the model and relationships between variables as an innovative approach, both studies have been utilized. To complete the initial research model, moderating variables (“interdepartmental coordination,” “ownership,” “organizational size,” and “IT department size”) that can reflect the specific characteristics of the case study of Samsung Electronics Company have been added to the model. Accordingly, the aim of the present study is the integration of the supply chain and business performance with a long-term relationship approach in the supply chain, information technology, and information sharing in Samsung Electronics Company in Iran.

THEORETICAL FOUNDATIONS OF THE RESEARCH

Supply Chain Integration

Supply chain integration essentially refers to the consolidation and unification of relationships, activities, tasks, processes, and locations in order to establish an interconnected relationship between customers, suppliers, wholesalers, and other members within the supply chain (Yu et al., 2001). According to Vickery et al. (2003), the supply chain integration strategy guides suppliers and customers toward the value creation process and creates value for the company's customers. This strategy can provide conditions for the firm under which it is able to achieve its core competencies and specialized domains. Therefore, it can be stated that the supply chain and the establishment of integration within it constitute the most important factor in the competitiveness of a company. In general, by examining the theoretical foundations, concepts, and theories related to supply chain integration, it becomes evident that this concept plays a decisive role in firm performance.

Considering the indicators examined in previous related studies, it becomes clear that some studies have focused only on the external dimension of supply chain integration—supplier integration and customer integration (Gray et al., 2005; Frohlich & Westbrook, 2001). In some others, only internal integration within a company or organization has been considered, and the external dimension beyond the firm has not been addressed. On the other hand, some researchers in examining supply chain integration have only investigated the supplier integration dimension (Goffin et al., 1997) or customer integration (Homburg, 2000). However, in most conducted studies, supply chain integration has been measured based on different

dimensions, including supplier integration, internal integration, and customer integration (Liu, 2011; Hosseini et al., 2010; Zailani & Rajagopal, 2005; Doroodchi, 2007; Wang et al., 2008). According to Elans et al. (2003), an organization that seeks to pursue supply chain management must consider both internal and external integration. Moreover, Hansen (2002) believes that focusing on internal integration in the supply chain is necessary before establishing integration with business partners, because a company must first attempt to establish coordination and integration within its internal environment.

Performance Improvement and Capacity

Operational performance is a measure for assessing the extent to which organizational goals are achieved (Pedro, 2009). Financial performance also refers to the company's ability to allocate internal or external resources to provide capital and develop appropriate financial plans, identify financing sources, and determine their level of utilization, which also affects a company's operational performance. Production capacity refers to the increase in production efficiency compared to standard production levels.

Long-Term Relationships with Suppliers

From the perspective of Bertolini et al. (2006) and Ghodsypour et al. (1997), a long-term orientation toward supplier relationships refers to the commitment to a continuous intention for growth, development, and maintenance of a long-term relationship. Therefore, establishing a well-defined and structured relationship with other members of the chain is very important and necessary. Likewise, becoming aware of customers' wants and needs requires maintaining an appropriate relationship with them. Accordingly, having a good relationship with distribution channels, warehouses, retailers, as well as suppliers of raw materials and inputs is essential.

Information Integration in the Supply Chain

The role of information technology in a supply chain is reflected in the efficiency and responsiveness of firms, depending on the accuracy and amount of information they share. Information integration in the form of information sharing among firms in a supply chain leads to a balanced and controlled distribution of information in such a way that competitors cannot use this information to their own advantage or to the detriment of the firm (Wang et al., 2008).

The Effect of Supply Chain Integration on Firm Performance

Understanding the relationship between supply chain integration and firm performance is vital and necessary for the survival and success of any domestic and international company (Ogazi). Reviewing previous studies shows that different levels of supply chain integration have different effects on various aspects of performance, which also carry different interpretations. Supply chain integration can bring benefits such as reductions in inventory and total cost, and increases in information sharing, leading to improved profitability and service levels, technological innovation, product design innovation, and ultimately enhancement of operational and financial performance of supply chain partners (Nikam, 2004). Furthermore, the lack of integration among supply chain members leads to operational inefficiency, which in turn affects supply chain performance. On the other hand, based on previous research findings, it can be stated that in most cases, a direct relationship between supply chain

integration and performance is examined, which contradicts the importance of the level of integration across the entire supply chain. This is because integration across the chain does not directly affect firm performance. Instead, supply chain integration affects other variables that can significantly influence firm performance. Therefore, a comprehensive review of previous studies suggests that the level of supply chain integration affects firm performance. However, the intensity and degree of integration are highly important in this relationship. For example, the results of some studies, such as Agner et al. (2005), indicate that the highest degree of supply chain integration—internal and external integration—leads to the highest level of performance. In other words, as the level of supply chain integration increases, the level of firm performance also increases. On the other hand, some studies have taken a more detailed view of different dimensions of integration and performance, such that the relationships between different dimensions of each concept have been examined separately, and it has been found that some dimensions of supply chain integration have a direct and positive effect on specific dimensions of performance. In some studies, the mechanism of how supply chain integration affects performance has been investigated. The results of these studies show that supply chain integration has a direct effect on performance outcomes through interaction capability with different integration dimensions and through operational capabilities of the supply chain.

The Effect of Supply Chain Integration on Supply Chain Management Operations

A company can, through systematic supply chain integration, share its specific operational resources and technological knowledge within the organization and with other organizations, and thereby improve the company's supply chain management operations. In fact, the success of supply chain management operations in improving performance depends on establishing internal integration within a company as well as external integration with suppliers and customers (Arab Bafrani, 2014). Shakari et al. (2006) believe that the strength of supply chain integration can lead to the reinforcement of key operational resources. However, very few studies have examined the relationship between supply chain integration and supply chain management operations (Khalfan, 2010). Nevertheless, in general, some conducted studies have shown that supply chain integration has a direct and positive effect on supply chain management operations.

The Effect of Supply Chain Management Operations on Firm Performance

Attention to supply chain management operations in a company is highly critical, as it has significant effects on firm performance. Researchers state that efficient management of purchasing and supply chain operations can have a considerable impact on firm performance. They also believe that achieving customer satisfaction requires attention to supply chain operations. A review of previous studies shows that efficient supply chain management operations directly or indirectly help companies achieve better performance (Khalfan, 2010). Supply chain management is vital for strengthening competitiveness, customer satisfaction, managerial performance, and achieving continuous success. However, based on existing studies in this field, supply chain management operations have not yet been fully examined by considering their three dimensions: procurement, production, and distribution. A synthesis of previous research results indicates that supply chain management operations have a direct and positive effect on firm performance (Ghaffari Taran et al., 2011). On the other hand, some studies have shown that supply chain management operations indirectly affect organizational

performance through the creation of competitive advantage, and that organizational performance related to supply chain management and supply chain integration, as well as interaction with the firm's competitive capabilities, can be achieved through this pathway.

A review of relevant research findings shows that some dimensions of supply chain management operations indirectly affect firm performance through other dimensions of supply chain management operations. In other words, among the dimensions of supply chain management operations, some play a more important role (Rahman Sersht et al., 2009).

The research model is based on the main variables adapted from the study of Prajogo and Olhager (2012), and the mediating variables are adapted from Liu et al. (2011), as shown in Figure 1.

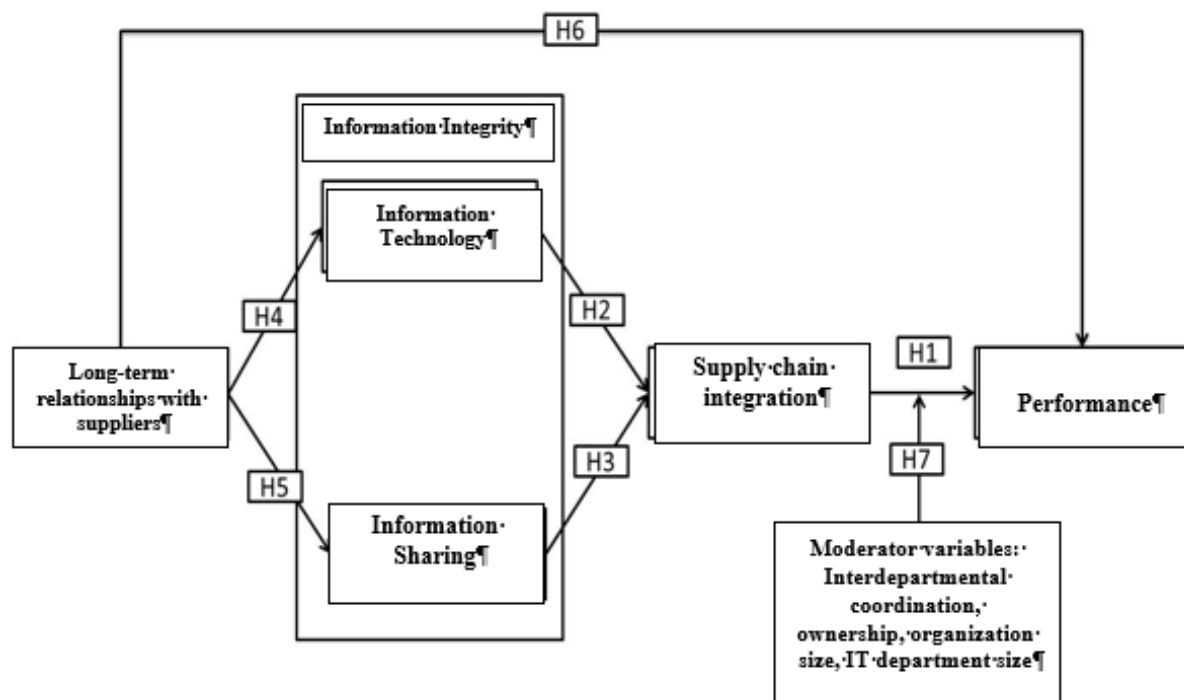


Figure 1: Conceptual research model (Prajogo & Olhager, 2014; Liu et al., 2011)

METHOD

This research is applied in terms of its objective and descriptive survey in terms of nature and method. The statistical population of this study consists of 510 personnel and employees of Samsung Electronics Company in the maintenance and repair unit of provincial branches in Iran, as presented in Table 1.

Table 1: Statistical population

Number of Personnel	Branch
20	Alborz
24	East Azerbaijan
17	West Azerbaijan
39	Isfahan
16	Fars
13	Gilan
6	Hamedan
14	Kerman
31	Kermanshah
39	Central Khorasan
27	Khuzestan
4	Lorestan
30	Mazandaran
14	Qazvin
24	Qom
11	Sistan and Baluchestan
172	Tehran
8	Yazd
509	Total

Source: Human Resources Statistics and Information Unit of Samsung Electronics Company

Since the statistical population of this study is considered unlimited, Cochran's formula for determining sample size for unlimited populations was used, and the sample size for the population of 510 individuals was calculated to be 220 respondents. The data collection instrument was a standard questionnaire consisting of 33 questions, adapted from the study of Prajogo and Olhager (2014) and Liu et al. (2011). To assess the validity of the questionnaire in this study, face validity and content validity were used. This means that the questionnaire items

of this study, before final distribution among the statistical sample, were reviewed by the supervisor and the advisor. These professors examined the sufficiency of appropriate and relevant questions for measuring the construct under study in order to establish content validity. Also, they assessed whether the measured items were apparently capable of measuring the intended construct in this study in order to establish face validity. The identified issues in both aspects were specified. After resolving these issues by the researcher in the questionnaire, the face and content validity of the questions were confirmed by these professors.

To determine the reliability of the questionnaire, a sample of 25 respondents was collected, and then Cronbach's alpha was calculated using SPSS software. The total Cronbach's alpha was obtained as 0.712. Below, this criterion is presented separately for each of the main research variables (Table 2).

Table 2: Cronbach's Alpha values for research variables

Key Variables	Cronbach's Alpha
Long-term relationships with suppliers	0.812
Information technology	0.701
Information sharing	0.793
Supply chain integration	0.804
Performance improvement and production capacity	0.759
Moderating variables	0.797

The research variables were named according to Table 3:

Table 3: Naming of research model constructs in structural equation modeling

Latent Variable	Name in Software
Long-term relationships with suppliers	A
Information technology	B
Information sharing	C
Supply chain integration	D
Performance improvement and production capacity	E
Moderating variables	F

Structural equation modeling was used to test the research hypotheses.

Research Hypotheses

1. Hypothesis 1: Supply chain integration has a positive effect on organizational performance.
2. Hypothesis 2: The intensity of technological communication between the organization and its suppliers has a positive effect on supply chain integration.
3. Hypothesis 3: The intensity of information sharing between the organization and its suppliers has a positive effect on supply chain integration.
4. Hypothesis 4: Long-term relationships with suppliers have a positive effect on technological communication between the organization and its suppliers.
5. Hypothesis 5: Long-term relationships with suppliers have a positive effect on the intensity of information sharing between the organization and its suppliers.
6. Hypothesis 6: Long-term relationships with suppliers have a positive effect on organizational performance.
7. Hypothesis 7: Mediating variables have a positive effect on the relationship between supply chain integration and organizational performance.

FINDINGS

The results indicated that most of the experts and managers participating in the study held a bachelor's degree. Furthermore, most of these individuals held the organizational position of "technical expert." Another descriptive finding showed that most experts and managers in this study had a work experience of between 5 and 10 years in the maintenance and repair unit of Samsung Electronics Company.

Figure 2 presents the output of the LISREL software regarding the model in terms of the T-test for examining relationships in the structural equation model:

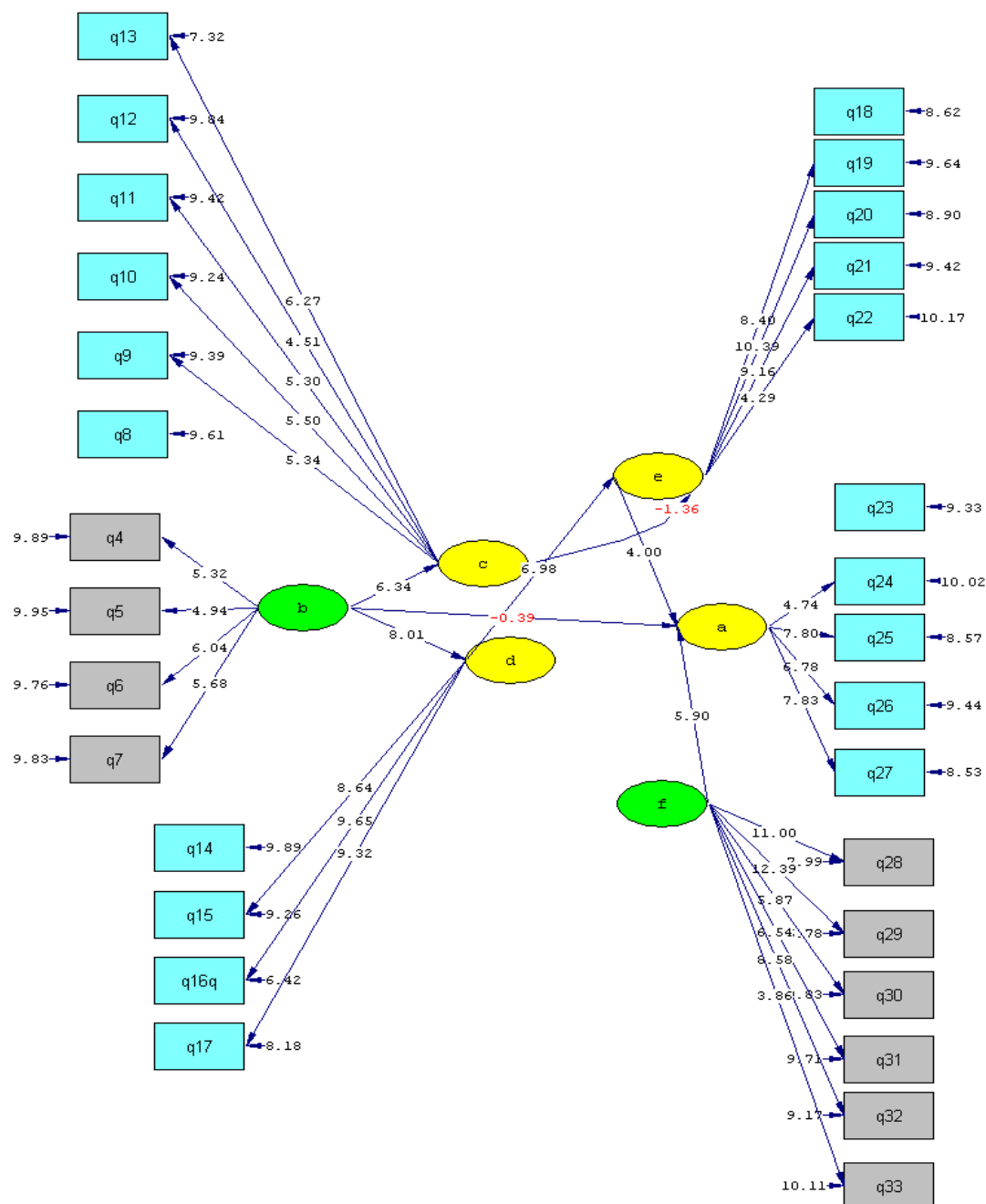


Figure 2: LISREL output for the T-test in examining relationships between variables in the structural model

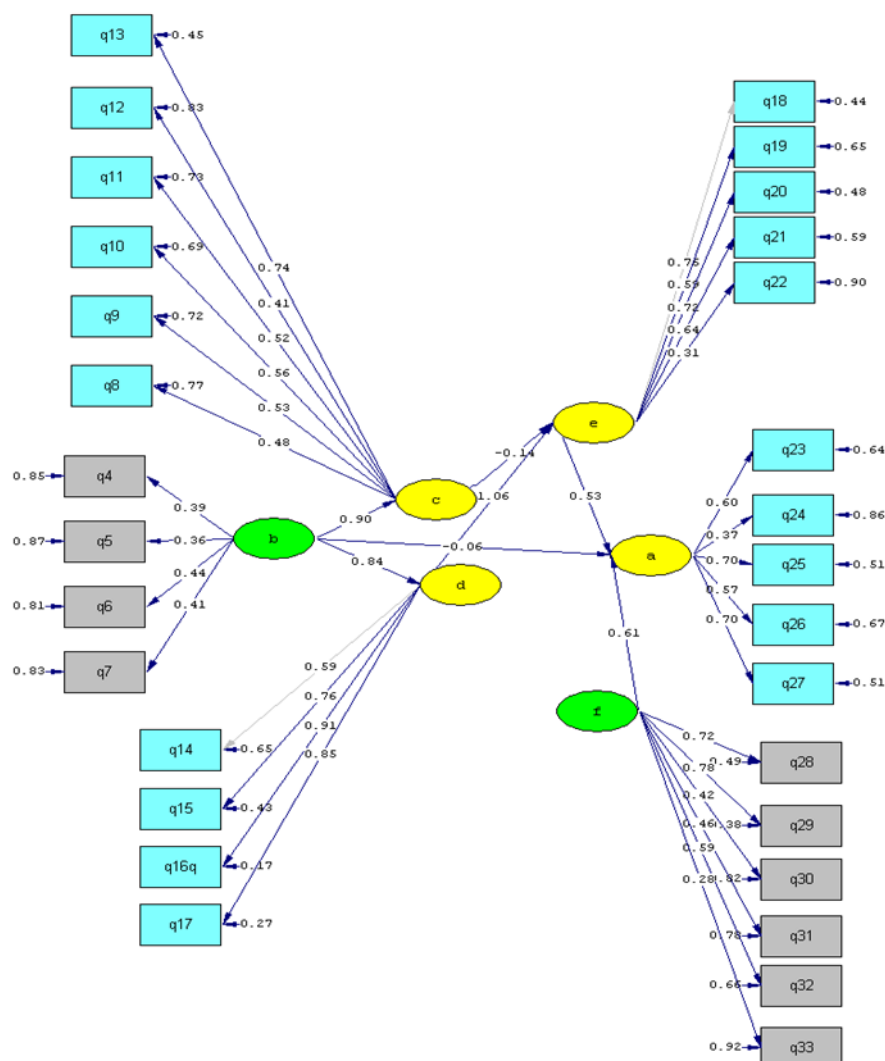


Figure 3: LISREL output for path coefficients in relationships between variables in the structural model

Table 4: Structural equation model based on confirmatory factor analysis

Goodness-of-Fit Index	Standard Threshold	Calculated Value	Result
Chi-square test	Less than three degrees of freedom	Degrees of freedom: 397; Chi-square: 1139.85	Acceptable
Root Mean Square Error of Approximation (RMSEA)	0.05 or less for good models; 0.10 or higher indicates a poor fit	0.064	Acceptable and adequate fit

Incremental Fit Index (IFI)	Greater than 0.90	0.93	Acceptable
Comparative Fit Index (CFI)	Greater than 0.90	0.98	Acceptable
Normed Fit Index (NFI)	Greater than 0.90	0.94	Acceptable

As observed, all goodness-of-fit indices of the structural equation model estimated in LISREL software are within acceptable ranges, indicating that the developed model has a good fit (Table 5).

Based on the T-test for examining the relationship between the variable “supply chain integration” and the variable “organizational performance” in the structural equation model of the study, the existence of a relationship between these two variables is confirmed due to a T-value of 6.98 (greater than 1.96). Based on the path coefficient between these two variables, the strength of this effect is 1.06. Therefore, the variable “supply chain integration” has a direct relationship with the variable “organizational performance” with an effect intensity of 1.06 in the sample of this study.

Based on the T-test for examining the relationship between the variable “technological communication intensity” and the variable “supply chain integration” in the structural equation model of the study, the existence of a relationship between these two variables is confirmed due to a T-value of 8.01 (greater than 1.96). Based on the path coefficient between these two variables, the strength of this effect is 0.84. Therefore, the variable “technological communication intensity between the organization and its suppliers” has a direct relationship with the variable “supply chain integration,” with an effect size of 0.84 in the studied sample.

Based on the T-test for examining the relationship between the variable “information sharing intensity between the organization and its suppliers” and the variable “supply chain integration” in the structural equation model of the study, the existence of a relationship between these two variables is not confirmed due to a T-value of -1.36 (less than 1.96). Therefore, the variable “information sharing intensity between the organization and its suppliers” does not have a relationship with the variable “supply chain integration” in the studied sample.

Based on the T-test in examining the relationship between the variable “long-term relationships with suppliers” and the variable “technological communication between the organization and its suppliers” in the structural equation modeling of the study, the existence of a relationship between these two variables is not confirmed due to a T-value of -0.39 (less than 1.96). Therefore, the variable “long-term relationships with suppliers” does not have a relationship with the variable “technological communication between the organization and its suppliers.”

Based on the T-test in examining the relationship between the variable “long-term relationships with suppliers” and the variable “intensity of information sharing between the organization and its suppliers” in the structural equation model of the study, the existence of a relationship

between these two variables is confirmed due to a T-value of 6.98 (greater than 1.96). Based on the path coefficient measurement between these two variables, the strength of this effect is 1.06. Therefore, the variable “long-term relationships with suppliers” has a direct relationship with an effect intensity of 1.06 on the variable “intensity of information sharing between the organization and its suppliers.”

Based on the T-test in examining the relationship between the variable “long-term relationships with suppliers” and the variable “organizational performance” in the structural equation model of the study, the existence of a relationship between these two variables is confirmed due to a T-value of 4.00 (greater than 1.96). Based on the path coefficient measurement between these two variables, the strength of this effect is 0.53. Therefore, the variable “long-term relationships with suppliers” has a direct relationship with an effect intensity of 0.53 on the variable “organizational performance.”

Based on the T-test in examining the relationship between the variable “mediating variables” and the variable “relationship between supply chain integration and organizational performance” in the structural equation model of the study, the existence of a relationship between these two variables is confirmed due to a T-value of 5.90 (greater than 1.96). Based on the path coefficient measurement between these two variables, the strength of this effect is 0.61. Therefore, the variable “mediating variables” has a direct relationship with an effect intensity of 0.61 on the variable “relationship between supply chain integration and organizational performance.”

CONCLUSION

The purpose of the present study is to integrate supply chain and business performance with the approach of long-term relationships in supply chain, information technology, and information sharing in Samsung Electronics Company in Iran. The results of structural equation modeling have shown that, first of all, in the overall outcome, according to the experts studied in Samsung Company, the variable “Supply Chain Integration” has a direct relationship with the variable “Organizational Performance” in the statistical sample of this study. Therefore, this means that in this company, integration with supply chain members is very close, and logistics activities are well integrated with the logistics activities of suppliers. Also, the type of integration in the company is up-to-date in terms of logistics integration, excellent distribution, specific transportation, warehousing, and repairs and maintenance, and the inbound and outbound relations of goods with suppliers and distributors are well integrated, and finally, logistics activities with suppliers, distributors, and customers are carried out without gaps or distances with each of them.

Also, other results showed that the variable “technological communication intensity between the organization and its suppliers” had a direct relationship with the variable “supply chain integration” in the studied sample. Therefore, in this company, computer-to-computer communication links with key suppliers are central, and appropriate inter-organizational coordination has been created through electronic links. Furthermore, information processing of transactions has been well strengthened through information technology, email capability

exists with all key suppliers, purchase orders and invoices are processed electronically, and advanced information systems are used for product delivery and shipment tracking.

Another finding was that the variable “intensity of information sharing between the organization and its suppliers” did not have a relationship with supply chain integration, and the variable “long-term relationships with suppliers” did not have a relationship with the variable “technological communication between the organization and its suppliers.” These results indicate that in Samsung Electronics Company, sensitive financial, production, design, research, and other types of information are not easily shared among departments, and necessary actions are not taken to share any information that may benefit key suppliers. Also, information technology in this company has not led to the creation and strengthening of long-term relationships with suppliers.

However, other results showed that the variable “long-term relationships with suppliers” had a direct relationship with the variable “intensity of information sharing between the organization and its suppliers.” This result indicates that the intensity of information sharing in this organization has led the company to maintain long-term relationships with key suppliers, maintain long-term cooperation with key suppliers to improve product quality, consider relationships with key suppliers as long-term alliances, and that long-term relationships with key suppliers have facilitated company development. (This development of relationships has been due to information sharing and not merely due to information technology and modern technologies.)

Also, other results showed that the variable “long-term relationships with suppliers” had a direct relationship with the variable “organizational performance.” This result also indicates that the long-term relationships established by this company with its key suppliers have led to logistical integration within the company and have affected the performance of final products. Moreover, this logistical integration has affected product delivery speed. It has also affected business flexibility in competitive markets, production costs, and product variety.

Finally, the results of the study indicated that “mediating variables” such as interdepartmental coordination, ownership structure, and organizational size had a direct relationship with the relationship between supply chain integration and organizational performance. This means that in this company, information related to key partners is forecasted through interdepartmental cooperation within the supply chain, and information exchange and delivery of plans with key partners throughout the supply chain are carried out regularly. Any information that may assist the other party in the supply chain is provided to them. Also, the size of the IT department in this company has been effective in coordination among supply chain partners, and experts believe that as the size of the company increases, greater integration with supply chain members is required, and the private nature of the company is highly influential in this regard. The results of this study, in terms of confirmed variables, are consistent with domestic studies including Arab Bafrani and Jassami Zargani (2014) in terms of confirming the relationship between long-term buyer-supplier relationships in the supply chain and organizational performance; Hosseini and Sheikhi (2013) in terms of the relationship between supply chain integration and firm performance; Nazemi and Kharidar (2012) in terms of confirming the relationship between supply chain integration and organizational competitive capabilities as a dimension of performance; Shafiei Nik Abadi et al. (2011) in terms of the effect of information sharing on integration of organizational processes in the supply chain; and Zargari (2009).

Furthermore, the results of this study are consistent with international research including Rosenzenk et al. (2003) in terms of the effect of integration strategy on competitive capabilities

and business performance; Liu (2011) in terms of the effect of supply chain integration level on competitive capability as a dimension of organizational performance; Stank (1999) in terms of the direct and indirect effects of integrated supply chain on firm performance; and Liu et al. (2011) in terms of the effect of supply chain integration and market orientation on organizational performance.

However, the results of this study, in terms of unsupported variables, are not consistent with Prajogo and Olhager (2012) in terms of the role of information sharing on long-term supplier relationships and the effect of information sharing intensity between the organization and its suppliers on supply chain integration; Hansen et al. (2002) in terms of the effect of information sharing on business integration; and Liu (2011) in terms of the effect of information technology sharing in supply chain management.

PRACTICAL SUGGESTIONS AND SOLUTIONS

Based on the results, it is recommended to the managers and experts of this company that greater emphasis and attention be given to the integration of procurement, excellent distribution, clearly defined transportation, warehousing, and up-to-date maintenance and repair operations.

It is recommended to the managers and experts of this company that the capability of establishing communication through email and other types of electronic communication with all key suppliers be provided. Actions should be taken to share any information that may assist key suppliers, and the necessary technological infrastructure for this purpose should be provided.

Company managers and technical experts should consider the relationship with key suppliers as a long-term alliance. Efforts should be made to preserve any information related to previous supplier relationships of the company, even those suppliers that are no longer cooperating with the company. Supply chain logistics integration should be viewed as a factor resulting from continuous and high-quality relationships with key suppliers, which is effective in improving business flexibility in competitive markets. Technical development and strengthening of the company's information technology department should be carried out in order to enhance coordination among supply chain partners.

One of the limitations of this research is that it does not fully address all factors influencing long-term relationships with suppliers and supply chain integration in manufacturing and industrial companies, relying on other valid domestic and international studies. This limits the generalizability of the findings.

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