

Extent Of Supply Chain Integration Among Selected Manufacturing Firms In Lagos Metropolis, Nigeria

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ABSTRACT

Supply chain integration is an active phase in organisational governance, cooperation, and teamwork of both the upstream and downstream prospects of an organisation. This study examines the extent of supply chain integration among selected manufacturing firms in Lagos metropolis. The study employed a mixed research design structure to investigate the level of integration among participant companies. The target population was employees of the supply chain unit of selected companies from the list of the liability companies of the Nigerian Stock Exchange dealing with consumer goods in Lagos Metropolis. The primary data collected through questionnaires information regarding the extent and level of integration and its performance on the firms. The data obtained coded and analysed using the mean and the standard deviation to determine the extent of integration among the participating supply chain departments. The study reveals a collaborative and cohesive pattern of supply chain integration among manufacturing firms in Lagos Metropolis. The study concludes a strong and robust relationship between manufacturing firms and their supply chain partners. The study recommends a deeper working relationship between the supply chain department and supplier partners to mitigate the challenges affecting supply chain integration in the manufacturing industry in Nigeria and enhance better production performance among the selected manufacturing firms.

Keywords: Supply Chain, Integration, Performance, Manufacturing Firms, Lagos, Nigeria

1.0 Introduction

Integration of technology, people, business and processes has become crucial for the survival of any organisation and especially if the organisation needs to find a competitive edge in the current global economy (Arend and Wisner, 2005). Also, according to Fabbe-Costes and Jahre (2008), Supply Chain Integration (SCI) concept refers to administering the various supply chain functions into a unified program. A successful supply chain then coordinates and co-opt all of the exercises into a perfect procedure and links all the partakers in the chain whether suppliers or customers. Integration has become a substantial and integral part of any organisation.

Business agility requires an integrated infrastructure that allows fast expansion of new solutions while leveraging existing IT investments. It requires real-time connectivity between people, systems, and business entities. Accelerating business processes requires process automation. However, some functions require human intervention at specific points, especially authorisations and exception handling. The increasing velocity of business requires automating as much as possible; even after automating processes, companies need to monitor and manage them in actual time to continually improve and optimise the processes (Fabbe-Costes & Jahre, 2008). Organisations forced to integrate so that they can be able to increase their revenue.

Integration, according to Merriam Webster dictionary (2018), is the act of combining two or more things to form or create something or to make something a part of another more massive thing. Bowersox, Closs, and Cooper, (1999) have classified integration in supply chain context into six different types: customer integration, internal integration, material and service supplier integration, measurement integration, technology and planning integration, and relationship integration. For more than a decade, SCI literature has been emphasising the importance of Supply Chain Integration among internal or inter-organisation processes (Yuva, 2000; Lee & Wolfe 2003; Flynn, Huo, & Xhao, 2010). Mathematically, integration means summation.

New openings exposed by integrating with suppliers, bringing products and services to market more quickly, and creating new sales or distribution channels through on-line capabilities achieved through integration (Zailani & Rajagopal, 2005). The significance of supply chain integration between a firm and its suppliers and also its customers is increasing. This development is in line with any business relationship, the association

expected to be long term, and the strength of the relationship depends upon the behaviour of the members in the supply chain. Supply chain integration requires an understanding of the materials bought and the core competencies, and experience of the supplier, the customer served and the organisation itself. The integration quality is always dependent upon a relationship between the organisation and the supplier (Wood & Brewster, 2005).

Developing integration among the firm and its suppliers or a firm and its customers aims at improving specific areas of a firm's performance, leading to savings in quality inspection costs and better integration of design efforts to meet the customer's needs (Mudambi & Schründer, 2006). Integration among partners in a supply chain that focuses on both the customers and suppliers should be reviewed in its entirety and frequently to develop cooperative attitudes in the chain (Goh, Lau & Neo, 2006).

Besides, integration is crucial in building trust so that the supply chain mechanisms can function effectively. Collaborative systems in integration characterise by a closer and more mutually supportive relationship between the firm, its supplier and its customers. The integration relationship needs flexibility among the partners, a broader regulatory and social environment characterised by both formal structures of mediation and informal networks of trust.

Supply chain integration has now become a leading/noticeable issue in this last decade as a means of improving the firm's performance. In recent years, a great deal of empirical evidence has shown that successful supply chain integration (SCI) can improve a firm's performance and its ability to compete successfully with others. (Wiengarten, Humphreys, Guangming, Fynes & McKittrick, 2010).

1.1 Literature Review and Conceptual Framework

Integration is the process of attaining close and seamless coordination between several departments, groups, organisations, systems, etc. business integration is about linking an organisation's systems together to streamline processes that will lead to greater efficiency.

Supply chain integration is defined and described in terms of the system, which is needed to be integrated into the organisational activities to enhance better performance and increase profitability. Earlier studies show that majority of the studies in this part of the continent especially Nigeria have not looked

into the extent of incorporation of integration of supply chain as a need to address the gap in the buyer-supplier and supplier-customer relationships and its effect on a firm's performance. The adoption of Supply chain integration tends to increase performance in an organisation's competitiveness. Around the world, SCI used is a strategy to implement the production and marketing to the consumer, both internally and externally.

Manufacturing strategies consisted of competitive priorities which mainly focused on effectiveness, cost, delivery, flexibility, innovation and responsiveness (Prathap & Mittal, 2010). Also, competitive priorities widely used as part of the measurement for manufacturing strategy performance (Zeng, Xie, Tam & Wan, 2008). Most firms used to achieve these goals through engaging with advanced technologies and manufacturing practices such as worker empowerment, just in time (JIT) and concurrent engineering (Gomes, Yasin & Lisboa, 2006).

However, ThruLogachantar and Zailani, (2011) reported that latest development in the industry come out with new dimension which diverted the focus of manufacturing performance towards logistics/supply chain capabilities to obtain quality, cost, and delivery, innovation and responsiveness goals. Zailani and Rajagopal (2005) also stressed the importance of measuring manufacturing performance through evaluating the key competitive priorities, which consisted of quality, delivery and flexibility.

However, their performance measurement focused only on three elements and neglecting other competitive priorities elements such as cost, innovation and customisation responsiveness. Cost and new product introduction which directly related towards the innovation and customisation responsiveness was critical in creating synergy in the manufacturing growth as this could eventually determine the sales of product produced (ThruLogachantar & Zailani, 2011).

1.1.2 Supply chain management concept

According to Christopher (2005), logistics management emphasises the efficiently managing the procurement, movement and storage of materials, services, and related information flows to maximise the enterprise's profitability. SCM builds upon this platform and seeks to achieve linkage and the coordination between the processes of entities in this network (Christopher, 2005).

The Council of Supply Chain Management Professionals defined SCM as encompassing the planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities as well as

coordination and collaboration with channel partners (Koh, Demirbag, Bayraktar, Tatoglu, and Zaim, 2007). Another definition by Chopra and Maindl (2001), SCM includes a set of approaches and practices to efficiently integrate suppliers, manufacturers, distributors and customers for improving the long-term performance of the individual enterprises and the supply chain as a whole in a cohesive and high-performing business model. This research focuses on SCM strategies and their effects on SMEs' performance; this definition emphasises on SCM and business performance will be chosen.

Thus the focus of supply chain management is upon the management of relationships to achieve a more profitable outcome for all parties in the supply chain. The integrated supply chain created with the sharing of information flows between parties to serve better the supply chain's end-customers. The aim of supply chain management is not to ensure the benefit for only a single party but the supply chain as a whole. Therefore, the successful implementation of supply chain management brings a clear advantage on the competitiveness of the individual companies in the long term perspective.

1.1.3 Supply Chain Integration and Supply Chain Performance

The need for supply chains in collaborative relationships, uniting to form a single virtual organisation in terms of the global approach to maximise profit and reduce total operating costs (Ding, Guo and Liu, 2010). It echoes in various industries reminding firms to direct all parties to combine their resources and collaborate (Yeung, Selen, Zhang, and Huo, 2009.). Previous studies have come to a consensus that SCI improves firm performance (Kim, 2009). It aids companies seeking a competitive advantage and helps to lower transaction costs (Zhao, Flynn, Yeung, 2008 and Li, Yang, Sun, Sohal, 2009). It enhances flexibility (Clark, Lee, 2002), reduce inventories, eliminates bullwhip effect (Lee, Padmanabhan and Whang, 1997) improves the delivery quality and shortens cycle times (Cousins and Menguc, 2006).

However, there is minimal effort to identify the relationship between SCI and SCP. Yet, empirical studies present that firms need to have correct supply chain relationships to deliver the benefits associated with SCI into SCP (Panayides and Lun, 2009). For this reason, this study explicitly investigates the influence of collaborative and cooperative, trust-based relationships enabled through the SCI, to achieve higher SCP.

Particularly, SCI in three levels including integration with suppliers, integration with

customers and intra-organizational integration, allows firms to achieve increased SCP, through enabling a centralised approach of management across the extended value network consisting of various parties (Li, Yang, Sun, and Sohal, 2009).

Through centralisation of operations, management and strategic decisions, the unified control of processes and actors undertakes the role of maximising utilisation of assets both internally and externally (Ambulkar, Blackhurst, and Grawe, 2015). Therefore, SCI leverages SCP through the transparency captured in the flow of goods and information from the origin of sourcing of raw materials till the end-user, conveying increased flexibility, reduced lead time, improved inventory, and reliable delivery (Panayides and Lun, 2009). Moreover, higher levels of information technologies (IT) involved in the communication, and transaction of supply chain members geographically

distributed, strengthens certain and reliable supply chain activities, facilitating coordination among supply chain partners (Mackelprang, Robinson, Bernardes, and Webb, 2014). Robust IT infrastructure enabled through SCI, provides timely, accurate and reliable information allowing convenient and low-cost communication with lower information uncertainty (Li, Yang, Sun, and Sohal, 2009). Hence, SCI improves SCP through the transfer of real-time, reliable, accurate information both across

1.2 Conceptual Framework

Supply chain integration (SCI) helps firms to reconfigure their resources and capabilities internally and externally to consolidate their supply chain as a whole to improve long-term performance (Horvath, 2001) SCI has both operational and financial performance benefits.

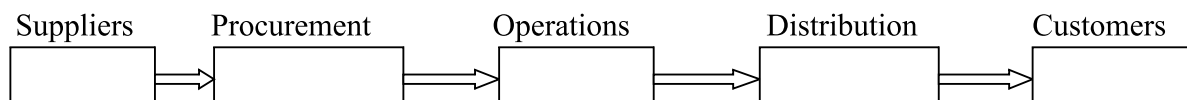


Fig1: Supply chain integration

Source: Adopted from the European Centre for Research Training and Development UK (www.eajournals.org)

1.3 Research Methodology

Lagos is Nigeria's financial hub with all major banks having their headquarters in the City. It is also home to the Nigerian Stock Exchange [NSE]. It accounts for over 80% of the country's foreign trade flows and generates over 50% of Nigeria's port revenues. Lagos is home to 70% of the country's total industrial investment and 65% of its commercial activities. In 2013 manufacturing is estimated to have contributed \$35 billion to the national economy. Manufacturing industries in Lagos State include consumer goods, beverages and tobacco, chemicals and pharmaceuticals, rubber and foam, cement, plastic products, essential metals and foam, steel and fabricated metal products, pulp and paper. Lagos economy, with an estimated population of 24million, is larger than any other economy in the ECOWAS sub-region.

For this study, the target population constituted the staffs in quoted manufacturing firms in the list of the liability companies of Nigerian stock exchange dealing with consumer goods in Lagos Metropolis, Nigeria. The primary source includes information obtained from fieldwork through the use of a questionnaire. Specifically, this study tends to examine the extent to which companies use supply

chain integration to improve on performance, profitability and quality of service.

In this regard; this study used structured questionnaires to collect data related to supply chain integration performance, profitability and quality of service.

The data obtained through the questionnaires were coded and analysed. The analytical tool used is descriptive statistics to examine the extent of supply chain integration among the manufacturing firms—the use of statistical tools such as means and standard deviation on the level of integration.

1.4 Results and discussion

The table 1 below shows the specific variable use to examine the extent to which sampled manufacturing firm in the metropolis employs the supply chain integration among the selected consumer goods manufacturing firm in the Lagos metropolis.

The descriptive statistic provides an answer to the extent of supply chain integration on manufacturing firm in Lagos metropolis, Nigeria. The variable ranges from how it manages its supply chain, building trust among suppliers, relationship building and management, and the information sharing.

Table 1: Supply Chain Integration

Statements	Mean	Standard Deviation
The company manages its supply chain.	4.14	1.056
The company ensure that there is trust amongst the supply chain partners.	4.24	0.954
There are relationship management and trust building.	4.04	1.146
It deploys integrated information sharing attitude as a critical component.	4.10	1.119
It engages in collective commitment.	4.12	1.087

Dependent Variable: *Supply chain integration*

Source: Author's Field Survey (2018)

The result above shows an average of 4.14 agrees that the company manages its supply chain well, while about average of 4.24 signifies that there is trust in the company. The deployment of integrated information sharing has about a mean of 4.10, while collective commitment has about 4.12, as well as relationship management and trust building having an average of about 4.04. These results indicate there exists a strong and firm relationship between manufacturing firms and their supply chain partners and that they consult their supply chain partners when there is new development concerning the supply chain.

And the result above, it deducted that many of the manufacturing firms in Lagos metropolis have adopted the method of integrating supply chain activities to a great extent and this practice has helped them to a great time in improving their performance.

1.5 Conclusion

This work looked into the extent of supply chain integration among the manufacturing firms by some selected firms among the manufacturing firms in Lagos, Nigeria. The outcome of this study also signifies the contribution it has given towards a new shift in upgrading the manufacturing best practices in developing countries through effective supply chain integration. Specifically, this study has addressed the research questions outlined in this study.

To some extent, the findings represent a universal phenomenon as suggested by prior literature. Understanding these relationships, it provides insights to the supply chain managers and

logistics managers. Not only in the consumer goods manufacturing industry but also in other sectors in terms of identifying strategies that would enhance the utilisation of supply chain integration practices within their firms and across the supply chain. This study enhances manufacturing firms in implementing such initiatives presently. This study sheds some light on the necessary measures to be undertaken to ensure successful supply chain management practices such corrective actions deemed essential as they help to recuperate the supply chain integration on the performance.

Result of the current study shows that there is a significant influence of supply chain integration on the performance of manufacturing firms in Lagos, Nigeria. The awareness came through the employees who work in a different section of manufacturing firms selected at random. The project work seeks to understand the importance of supply chain integration and its effect on overall operational performance.

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