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Supply Chain Management and Organizational Performance of Manufacturing Firms in Port Harcourt

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Abstract: *This study's overarching goal was to determine the correlation between supply chain management and organizational performance of Port Harcourt's manufacturing firms. The study's objectives looked at the supply chain management strategies used by manufacturing firms and how they affected organizational performance as well as supply chain strategies that have been disrupted by a number of reasons. The study gave a brief background and rationale of supply chain management, reviews were done on all variables of the study. To carry out this study, cross-sectional research design was adopted, hypothesis were tested while analyses were done using descriptive as well as inferential statistics and analyzed with the aid of SPSS. Data collection was administered by in-person meeting, email/ online social platforms to the staff of the manufacturing firms in Port Harcourt, Nigeria. The populace used in the study was 120 respondents from the manufacturing firms. The nature of the study was quantitative while previous empirical review were lucidly looked at. Interview and questionnaire was adopted as data instrument. It was concluded that supply chain management with inventory efficiency and material availability has significant influence on growth and improved organizational performance.*

Keywords: *Supply chain, Management, Organizational Performance, Inventory Efficiency*

Introduction

This study like other good studies, the nexus amid supply chain management and organizational performance of manufacturing firms in Port Harcourt is critically examined in this study, as it is in other excellent studies. The economy of a country is significantly impacted by manufacturing activities. It has developed economies and makes up a major share of all economic activity. For instance, in Nigeria, the subsector accounts for almost 10% of the country's annual GDP. Manufacturing operations provide roughly 12% of the labour force in the formal sector of the country's economy and to significant indicators of a country's economic performance. The supply chain refers to the network of parties involved in getting a certain product from its starting point of raw materials to its finished state, including suppliers, manufacturers, transporters, wholesalers, retailers, and other intermediaries including customers (Felea & Albastrolu, 2013).

Manufacturing activities span a wide range, ranging from minor agro-based enterprises to large iron and steel businesses. Because the coordination with the supply chain also plays a crucial role in enhancing the performance of organizations, manufacturing firms must realize the influence of supply chain practices on organizational performance in order to remain competitive.

Due to its operational effectiveness, supply chain management has attracted significant interest from a wide range of academics and practitioners over the past 20 years (Sundram et al., 2011). Despite its success, few firms find it perplexing to grasp the banes with the supply chain (Cook et al., 2011). For the networks to perform better in terms of environmental issues, there must be strong downstream and upstream inclusion. There are appropriate dynamics that influence supply chain procedures. These dynamics include the length, kind, position, firm size, and industry of the supply chain. For the firm's services and goods to develop and maintain their competitive advantage, an efficient supply chain must be formed. Furthermore, supply chain management can be a useful instrument for a firm to improve its competitive advantage.

The majority of businesses have a core competency in supply chain management, which is crucial to both business success and customer satisfaction. Supply chain management, according to George and Madhusudanan (2019), is a network of stakeholders connected by the flow of information, resources, and money with the objective of constructing a chain that gives the maximum value to the client and to eliminate waste. To maintain the profitability, growth, and stability of industrial firms, supply chain management can be a beneficial tool. In order to manage their supply networks effectively, firms must follow a number of steps (Li et al., 2006). These steps are collectively referred to as supply chain management.

On the other hand, organizational performance is essential because every organization's performance is crucial. The manner organization attains its goals is significant. Organizational performance refers to how an organization meets its objectives in terms of its financial objectives and market-focused objectives. Due to the development of models and techniques for measuring and evaluating organizational performance, like The Performance Pyramid System (Lynch and Cross, 1991), several studies have been conducted. The effect that organizational performance has been having on organizations has been studied empirically (Dess and Robinson, 1984; Garengo et al., 2005) and has become a relevant and interesting topic. The fundamental tenet of the construct of organizational performance is that an organization is a grouping of productive, human, and capital resources used to accomplish a single goal. If these resources add value to the organization, they will be dedicated to it (Kontsevaia & Berger 2017). Additionally, these committed assets will continue to be available to the organization so long as the value received exceeds the asset's expected value (Carton, 2004). Due to the fact that various stakeholders require distinct performance indicators in order to make decisions, there might be a variety of causes for why manufacturing organizations do well. Regardless of the employees' positions, these studies implement supply chain management based on organizational performance at both the top and bottom levels of business.

This study goal is to elucidate literatures and existing empirical studies while examining the nexus between supply chain management and organizational performance from the viewpoint of manufacturing firms.

Purpose of the Study

The goal of this study is to contribute to the comprehending of managing supply chain and organizational performance by postulating a framework that defines the concept and identifying factors that influence its extension while improving organizational performance. Accomplishing these objective involve categorizing and explaining the dimensions of supply chain management and organizational performance whilst distinguishing other relating factors that support the concept. Meanwhile, there are many supply chain management characteristics, but this review paper focuses on inventory efficiency, material availability and growth. Also glance on previous studies existing empirical research as a cap stone research.

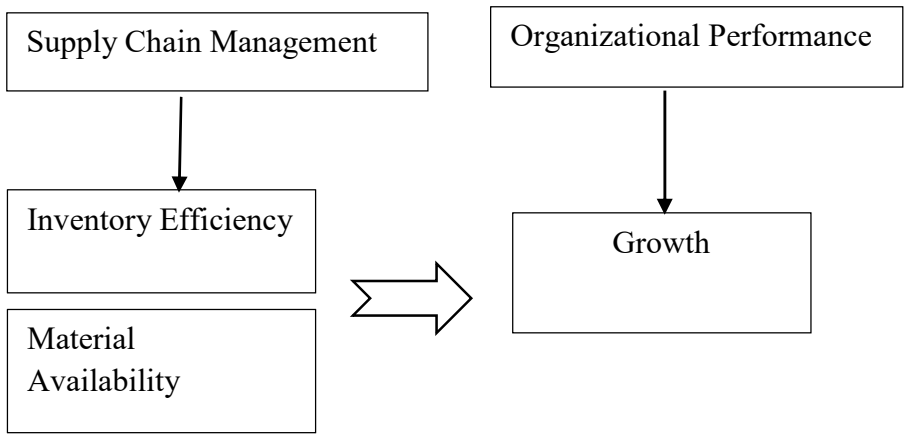

Figure: Study Model
Source: Gowen (2005), Robert (2007).

Literature Review

Conceptual Review

The conjectural and conceptual review explain the framework and scope of the study and investigate what needs to be study in the context. The makeshift objective of supply chain management is to condense the cycle time, lessen inventory, boost productivity, and boost company performance. In contrast, the company's long-standing objective is to increase profit, growth, and market share. Companies have used financial measures to assess the effectiveness of the company (Holmberg, 2000). Prior research has been used to gauge an organization's performance based on its overall competitive position, market shares, sales, ROI, profit margin

sales, and growth in both market share and sales. Any innovation used by the company, especially in the supply chain, should have as its ultimate goal improving company performance (Stock et al., 2000).

Meanwhile the source of supply chain management development was traditional logistic management, supply chain management, according to Mangan and Christopher (2005), is emphasizing both internal and external flow and procedures. The activities organizations adopt to promote supply chain management are collectively referred to as supply chain management practices. According to scholars' proposals, supply chain management methods are multi-dimensional constructions with both upstream and downstream components (Li et al., 2006).

This literature review is underpin with Resource based view theory which covers the theoretic framework of the study, the concept of improved organizational performance, it influence and solution. The concepts of supply chain management, inventory efficiency, material availability, while growth for organizational performance. Lastly empirical review.

Resource Based View Theory (RBV)

Resource based view theory connote using available input to getting the optimal best akin to competitive advantage. In the stance of Resource Based View (RBV) Theory, a firm's capability to establish and maintain a competitive advantage and enhance SC performance is influenced by the identification and ownership of internal strategic resources (Shalakha, 2015). A resource is deemed strategic if it satisfies assured requirements, including being valuable, non-replaceable, unique or rare, and imitable to improve the SC performance of the company (Barney, 2012). Given the shifting external events that an organization encounters in the cutthroat economic climate, resources must be effectively managed and utilized (Lippman & Rumelt, 2003). According to a resource-based perspective on a firm's ability to provide sustained competitive advantage, a competitive barrier eventually arises when resources are managed so that their outputs cannot be imitated by competitors (Mahoney & Pandian, 1992). A corporation develops a lasting competitive advantage, in accordance with the resource-centered paradigm, because of its special resources, which are valued, unusual, non-tradable, inimitable, and non-substitutable. According to the resource-based perspective, certain specific, predominant resources will result in superior supply chain performance and ultimately help create a competitive advantage. The duration of this advantage will depend on how easily competitors can imitate these resources. However, a company's current resources might not be adequate to fulfill future market demands due to the volatility of today's marketplaces.

To contend in the upcoming market, there is a lucid need to grow and adapt resources like human capital. By expressly defining capabilities as a distinctive kind of resource, explicitly an organizationally embedded non-transferable firm-specific resource whose primary function is to improve the efficiency of the other resources owned by the firm, Barney (2012) underlines the distinction between capabilities and resources. Researchers in management have a shared

interest in the resource-centered paradigm, and there are several papers on the topic (Mahoney & Pandian 1992). Instead than attempting to explain why companies exist, the resource base of the firm is a theoretical phenomenon and nature of firms. It is predicated on the premise that resources are unevenly disseminated among enterprises and that this distribution is stable. The most well-known RBV proponent, building on earlier work, suggested that a firm's use of idiosyncratic, immovable resources is the source of long-term competitive advantage. In contrast, industrial organization economics looks at how a company responds to rivals from the outside while ignoring the "black box" of internal conflicting interests in the firm's resource project management. The RBV theory incorporates a number of management techniques and strategies that were primarily developed to assist managers in demanding work conditions. The basic tenets of the theory acknowledge that resources like human capital are unevenly dispersed among businesses, that this distribution is persistent, and that these resources are not entirely transferable.

Thus, it is crucial to comprehend how a company uses "idiosyncratic, immobile resources" to manage its supply chain with the least amount of conflict. As a result, this theory highlights human capital efficacy as an essential resource in the adoption of supply chain management procedures by firms.

Concept of Supply Chain Management

A product's entire delivery process, everything from acquiring components and raw materials to manufacturing and assembly, as well as warehousing, inventory monitoring, distribution through a variety of channels, customer delivery, order entry, order management, and the information systems needed to observing these processes (Lummus & Vokurka, 2008). Karabiyik (2009) defines supply chain management as the coordination of operations that start with the purchase of raw materials, continue through their transformation into semi-finished or finished commodities, and culminate with the delivery of those goods to their final users.

The goal is to build a chain that provides the customer with the highest value while also substantially decreasing waste. The goal of supply chain management is, of course, to represent the network of companies that make up the supply chain through upstream and downstream connections to the numerous processes and activities that result in value in the form of goods and services in the hands of the final consumer. A supply chain is a grouping of three or more entities (organizations or people) actively engaged in the upstream and downstream flows of goods, services, money, and/or information from a source to a client, according to Mentzer et al. (2001). To boost consumer value and secure a long-term competitive advantage, supply chain management vigorously regulates these behaviors. By maximizing supply chains using the best and most efficient techniques, this is accomplished. To be successful, businesses must carefully manage their operations by organizing, scheduling, and controlling supply chain activities (Bozarth & Handfield, 2016). The literature on supply chain management focuses on three strategies that are essential for the success and future of supply chains in order to prevent supply

chain interruptions and provide risk mitigation. In the parts that follow, supply chain management theories and methods will be covered in relation to those three practices.

According to Seuring and Müller (2008), the coordination of corporate collaboration along the supply chain, the control of material, information, and capital flows, and the acceptance of goals from each of the three aspects of sustainable development are all components of sustainable supply chain management. Financial and environmental goals are frequently congruent in companies that place a high priority on sustainable supply chain management. As a result, every aspect of the company, the supply chain, and the partnerships embrace sustainability. By doing this, the entire supply chain is protected from commodity traps and both the focal company's and its suppliers' financial worth is increased. The majority of firms have outsourced and extended many production and supply chain activities as a result of their increased complexity and heavy reliance on overseas suppliers, making them particularly vulnerable to supply chain disruptions (Bozarth & Handfield, 2016).

Determinants of Supply Chain

The supply chain's components varies, the forecasting approach is one of the key contributors to the bullwhip effect in the supply chain, according to Lee et al. (1997). Because it is challenging to accurately estimate demand, participants in a supply chain must forecast the demand's future state. Order variance will rise as a result of this uncertainty, and the order quantity may alter. The supply chain performance KPIs for inventory cost, backorder cost, missed sales cost, and customer goodwill are significantly impacted by forecast accuracy. An incorrect forecast indications to a factory's capability being underutilized. One of the most popular forecasting techniques is moving average, while another is simple exponential smoothing. The plain exponential smoothing method has the benefit of being easy to employ in computer systems because it needs less data storage (Disney & Towill, 2003). But when utilizing the fundamental exponential method, order variance increases more than when using the moving average forecast method.

Two factors for replenishment, the lead time and review period, can also affect how well the supply chain functions. The time between receiving an order and having the items delivered is referred to as lead time. It is made up of the lead times for both orders and deliveries. One of the elements causing the bullwhip effect is the protracted lead time (George & Madhusudanan, 2019). In a serial four-stage SC with participants that followed a lead-time-sensitive buying strategy without safety stock and which was conducted in a lost sales environment, Heydari et al. (2009) investigated the impact of lead time variability in BWE. Inventory control, which also governs the supply chain, is a way to make sure that a firm has the precise products on hand in order to prevent stock outs, shrinkage, and to offer accurate accounting. Economic balance must be struck amid the costs incurred and the money saved by keeping the material on hand. There are two rudimentary decisions that must be made for each item that is stored in inventory. These

options have to do with when and how much of an item are ordered. Thus, the choices of "when" and "how much" to order are a component of the inventory control system. The two distinct demand inventory systems are the periodic assessment system and the continuous evaluation method. In the periodic review system, a suitable quantity is ordered after routinely (during review periods) examining the inventory situation. As a result, frequent inventory reviews involve counting and recording goods at predetermined intervals.

Inventory Efficiency

Superior supply chain performance requires efficient and effective inventory management throughout the whole supply chain. Reduced general supply chain costs, a lesser risk of obsolescence, and improved responsiveness and flexibility are advantages of lower inventories. Dell, which is well-known for its incredibly effective supply chain, successfully leverages the build-to-order and through sales business models to keep its inventory to a four-day supply and send 95% of client orders within eight hours (Gowen & Tallon, 2005). HewlettPackard relies on the delay strategy to control production, inventories, and to reduce forecasting errors.

Utilizing information technology to assist with inventory control decisions is another fantastic method. Inventory flow management calls for logistics that deal with the tangible supply chain components or planning and construction design for the conveyance of goods (Christopher, 2012). It mostly deals with ordering and buying quality control, shipping standards, and warehousing when it comes to getting spare parts and replacements. The material needs planning system makes use of information from the master schedule and the inventory system. The master schedule items are then divided into subassembly and raw material requirements, it compares them to what is already in stock and determines the precise requirements (item by item) for everything needed.

Material Availability

At the appointed time, all resources needed to complete an order must be available. Downtime, order rescheduling, and job interruptions are caused by a lack of resources. Inaccurate inventory data, a lack of understanding, subpar supplier performance, bringing goods to enterprises, quality or personnel concerns, and equipment breakdowns are common causes of problems with material availability. Due to a rise in the amount of work-in-process, an increase in the price of inventory, and a drop in the supply of materials. Nevertheless, the pertinent of material availability cannot be over looked as raw material significance is sacrosanct to supply chain management practice.

Organizational Performance

The impact that organizational performance has been having on organizations (Dess and Robinson, 1984; Garengo et al., 2005), according to the empirical research, has emerged as an important and fascinating factor. Organizational performance refers to how well a company performs in regard to its financial and market-based objectives. The short-term goals of supply

chain management are to increase organizational productivity, decrease inventory, and shorten cycle times. While increasing revenue and market share is the organization's long-term goal. Financial measures have been used by businesses to gauge their performance (Holmberg, 2000).

One of the most crucial factors for evaluating an organization's market share, growth (OECD, 2001), actions, and environment is its measurement and assessment system for organizational performance (Richard et al., 2009). However, according to Lynch and Cross (1991; Kennerley and Neely (2003)), few businesses seem to have regular procedures domicile to guarantee that their performance dimension systems accurately represent their milieu and their strategies. Organizational performance, as defined by Zep-obipi (2015), is the list of accomplishments produced by an organization at a certain time or over a period of time that are quantifiable using a variety of indices. Individual performance is defined as a person's record of accomplishments over a period of time that may be measured using a variety of indices. Analyzing a company's performance in relation to its objectives and goals, which promotes organizational growth, is known as organizational performance.

Supply Chain Management Practice and Organization Performance

Previous research has shown that different supply chain management practices may impair an organization's capacity for competitiveness. The competitiveness and overall success of a firm are impacted by supply chain management practices. Manufacturing companies with strong supply chain management will undoubtedly affect their competitive advantage in the market. Less delivery time, more dependability, higher-quality products, and/or lower pricing are all attributes that enterprises with a competitive advantage have over their rivals (Lechner et al. 2018). These competencies will lead to an improvement in organizational performance. According to Li et al. (2006), an organization's competitive advantage may also influence relationship efficacy, loyalty, customer happiness, and economic performance.

Through product innovation, quick time to market, dependable delivery, high product quality, and affordable pricing, it is anticipated that they will increase their competitive edge. The strategic supplier alliance can, for instance, improve customer satisfaction, increase supplier performance, and shorten time to market. When materials are readily available, the supply chain is integrated, enabling a company to produce its product and distribute it rapidly to its target market.

Empirical Review

In a study by Ikegwuru and Harcourt Horsfall (2020), which used a cross-sectional survey design to explore coronavirus containment strategies and rapid-fire changes in purchasing behavior in Nigeria. A practical sample of 320 consumers was chosen from the senatorial districts of Rivers State, and 296 copies of the survey were returned by respondents, yielding a reply rate of 92.5%. Descriptive statistics and regression analysis were used for the analysis. The findings showed that the government's instructions to stay at home, shut up businesses and markets, and impose curfews and movement restrictions have a beneficial and significant impact on Nigeria's rapid

shifts in purchasing behavior. The study comes to the conclusion that consumer purchase behavior can alter quickly and favorably as a result of coronavirus containment measures. A thorough study on the effects of epidemic outbreaks on supply chains was undertaken by Queiroz et al. in 2020. Based on their findings, they suggested a framework for supply chain management during the coronavirus pandemic. He advised that one of the key study topics for supply chain management during epidemic outbreaks be sustainability. The importance of utilizing technical and digital methods, such as data analytics or digital manufacturing, to improve operations and supply chain management during epidemic outbreaks and pandemics seems to go hand in hand with a focus on sustainability.

With reference to the aforementioned empirical review, it's conceivable that little attention has been paid to the connection between supply chain management and organizational performance. By rigorously analyzing the impact of supply chain management on organizational performance, notably its implications on inventory effectiveness, material availability, and growth, this study tries to close this research gap.

Methodology

This cross-sectional study analyzes primary data collected from manufacturing companies in Port Harcourt, Rivers State. The study's sample included ten (10) manufacturing companies. The scope of these research is to scrutinize the relationship between supply chain management and organization performance, using inventory efficiency and material availability as components or variables of supply chain management and growth as the primary variable for organizational performance. This is because the study to be examined is at the micro level of the individual and is fundamental to supply chain management and organizational performance. Also present how organizational performance is improved significantly through enhanced inventory efficiency and material availability, indicating that managers and middle level employees only up the population from all sphere of the organizations. In this instance, the population was drawn from ten (13) staff of each of the eleven (10) manufacturing firms totaling one hundred and thirty (130) respondents. Nevertheless, 120 respondents were conveniently selected. The study was quantitative in nature. The main data collection tool, a closed-ended questionnaire, was swiftly provided to the respondents via electronic channels including WhatsApp and Telegram as well as other forms. The human resource departments of the manufacturing companies issued an introductory letter outlining the purpose and goals of the study and asking for contact information from the potential responders. Thus, it encourages them of strictly confidentiality of any information given out. After recurring visits and feedback, the contact evidence of these proposed respondents was given. Nonetheless, proper responses were acquired after ensuring them of confidentiality. The value of Cronbach's alpha was used for reliability of instrument. The primary data obtained via the use of a questionnaire was analyzed using descriptive as well as inferential statistics, while bivariate model for the hypotheses.

Results

There were 130 questionnaires distributed to the respondents in all. There were only 120 properly completed and returned forms, or a 98% response rate. Each response was scored on a measure of strongly disagree to strongly agree across five levels. The graph above displays the respondents' demographic profile. 52 of the respondents, or 48.6% of the total, fell into the highest age range of 41–45, according to the examination of the respondents' ages. Likewise, 10 respondents, or 9.3% of the total, fell into the lowest age range of 35 to 40 years. Longevity denotes experience, and it is a popular assumption that individuals with greater experience have better cognitive abilities. Whereas 31–35 year olds make up 42.1% of the respondents. The demographics of the respondents are further explained in the table below.

Table 1 Demographic Outline of the Respondents

Variables	Classification	Frequency	Percentage %
Age	20-30	52	48.6
	31-40	38	42.1
	41-50	10	9.3
	60 and above	0	0
Respondents Experience	Below 5 years	5	11.2
	6-10 years	43	40.2
	11 and above	52	48.6
Status of Respondents	Managers	9	8.4
	Supervisors	31	29.0
	Senior staff	42	39.0
	Junior staff	18	16.8

Source: SPSS output (2023)

Bivariate Data Analyses (Inferential Statistics)

This section presents the findings of the tested hypotheses using the Spearman's Rank Correlation Coefficient at 99% confidence level, which was accepted as a benchmark for the likelihood of accepting or rejecting the null hypotheses. Irving (2005) states that an r value less

than 0.20 (r 0.20) is the criterion for accepting the null hypotheses and an r value greater than or equal to 0.20 (r 0.20) is the criterion for rejecting the null hypotheses.

Effect of Inventory Efficiency on Growth

		Inventory Efficiency	**Growth**
Inventory Efficiency	Spearman's rho Correlation Coefficient	1	.812**
	Sig. (2-tailed)		.000
	N	120	120
Growth	Spearman's rho Correlation Coefficient	.812**	1
	Sig. (2-tailed)	.000	
	N	120	120

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS output (2023)

Table 1 shows the "Spearman's rank" association coefficients which measured the strength and nexus of Inventory efficiency and growth as follows: strongly positive correlation and Inventory efficiency influence on growth (rho = .812, n = 120, p = .000); strong positive correlation between Inventory efficiency and growth (rho = .1.00, n = 120, p = .000). Thus, the null hypotheses which states that there is no positive influence of Inventory efficiency on growth measures were not retained as pv<0.05. Hence, the H0s were restated thus: significantly influences of supply chain management measures (Inventory efficiency on growth).

Effect of Material Availability on Growth

		Material Availability	Growth
Transformation of Strategic Intent	Spearman's rho Correlation Coefficient	1	.816**
	Sig. (2-tailed)		.000
	N	120	120
Improved Customers Care	Spearman's rho Correlation Coefficient	.120**	1
	Sig. (2-tailed)	.000	
	N	120	120

Source: SPSS output (2023)

Table 2 exhibit the Spearman's rank correlation coefficients which measured the nexus of material availability and growth as follows: strongly significant correlation and material availability influence on growth (rho = .816, n = 120, p = .000); strong positive correlation between material availability and growth (rho = .1.00, n = 120, p = .000). Thus, the null hypotheses which states that there is no significant influence of material availability on growth measures were not retained as pv<0.05. Hence, the H0s were restated thus: significantly influences of supply chain management measures (material availability on growth).

Managerial Implication

This research will enable management of manufacturing firms and other related field, highlight the importance of supply chain management. This will enable the attainment of growth, sustainable strategy, profitability, market share, thereby achieving sets objectives. This will equally incorporate better innovation and creativity to foster growth and development in manufacturing firms. This study will also allow managers build strong and sustainable supply chain process that can lead to organizational performance, such that they are competitive in the business environment. This is in support of the opinion that supply chain management will prime akin productive performance and fashion a competitive advantage for the firms.

Conclusion

The relationship between supply chain management and organizational performance of manufacturing firms in Port Harcourt was discussed in this study. Particularly the impact of domestic and worldwide slowdowns on inventory accuracy and material accessibility for

manufacturing companies, as well as potential solutions. As a result, numerous supply chain management approaches were evaluated critically using pertinent academic resources. Material accessibility and inventory effectiveness contribute favorably to the development of the business and increased customer satisfaction. The focal goal of the current empirical research is to examine how manufacturers and supply chain management companies affect organizational performance. Detailed descriptions of how supply chain management affects organizational performance found in the literature, along with its components. The ideas behind supply chain management and its factors were clearly stated. When an organization grows, the ideas of inventory efficiency and material flow are no longer used. Hence, the pertinent of supply chain cannot be overlooked as its impact is sacrosanct in inventory, material accessibility, technology, location and operations etc. The goal of this was to ensure that the study objectives were thoroughly investigated and that any loopholes in the research could be filled.

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