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Material Requirement Planning and Supply Chain Performance of Oil and Gas Firms in Rivers State, Nigeria.

Dr. Akintokunbo Oluwarotimi Odunayo and Obom Otonye

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Dr. Akintokunbo, Oluwarotimi Odunayo

Department of Management, Faculty of Management Sciences, Rivers State University, Nkpolu-Oroworukwo, Port Harcourt, Nigeria

Obom, Otonye

Department of Marketing (Supply Chain and Logistics Option), Faculty of Management Sciences, Rivers State University, Nkpolu-Oroworukwo, Port Harcourt, Nigeria

Abstract

Purpose: This study examined the relationship between material requirement planning and supply chain performance of Oil and Gas firms in Rivers State, Nigeria.

Methodology: The study adopted an explanatory research design with a causal type of investigation. Both primary and secondary methods of data collection were used to obtain relevant data for analysis. The instrument of data collection employed was the questionnaire. The study population comprised of two hundred and ninety-three (293) oil and gas servicing firms operating in Rivers State as enlisted in the Nigerian oil and gas industry annual report (2020). The sample size for the study comprised 149 oil and gas firms in Port Harcourt, Rivers state. The sample size was determined using the Taro Yamene formula. Furthermore, the researcher selected one management staff from each of the oil and gas firms operating in Rivers State as respondents for the study hence a total of one hundred and forty nine (149) respondents were used for the study. The data was analyzed using the Pearson's Product Moment Correlation statistic through the aid of statistical packages for social science version 23.0.

Findings: The result of the study revealed the existence of significant and positive relationship between material requirement planning and supply chain performance of oil and gas firms in Rivers State.

Recommendation: The researcher concluded that material requirement planning affect supply chain performance of oil and gas firms in Rivers state and therefore recommended that managers of oil and gas firms should strategically manage their material and inventory processes in other to improve their supply chain performance.

Keywords: *Material requirement planning, product quality, customer satisfaction, cost reduction, oil and gas firms and supply chain performance*

INTRODUCTION

Material Requirement Planning (MRP) is an inventory management practice that involves the sequencing and adoption of coherent techniques in creating and identifying special inventory and material needs of each company production component for efficient and appropriate product delivery. Material requirements planning has been a very popular and widely used multilevel inventory control method since 1970s. The application of this popular tool in materials management has greatly reduced inventory levels and improved productivity (Singh & Garg, 2011).

Inventory plays a vital role in the operation of organizations. On the average, inventory constitutes about sixty percent of the current assets in most manufacturing organizations (Hills, 2000). Since manufacturing firms maintain a large size of inventory, a considerable amount of funds is committed to them. The high risk of investing such large percentage of funds justifies the need for firms to implement effective and efficient inventory management strategies so as to expect high return on investment and productivity improvement. Inventory management is concerned with the efficient management of stock to achieve an optimum level of inventory in the firm's working capital.

Material Requirements Planning (MRP) is a production planning and inventory control system which have three main functions: (i) the system helps ensure that the appropriate materials are available for production and necessary products are available for customers to avoid shortage, (ii) reduces waste by maintaining only the lowest possible materials and product levels in stock, (iii) helps plan manufacturing functions, delivery schedules and purchasing (Rouse, 2014). MRP implies that for each end item a master production schedule is created, specifying delivery times and order quantities from a forecasted demand and when the inventory position of the item is less than the defined level, a new replenishment starts for the item through a purchase or manufacturing process (Segerstedt, 2006). The aim of inventory management is to establish a link between the entire production and distribution channels of product or service in order to confirm or satisfy customer requirements (Chu, Madu, & Chinco, 2001). With the help of MRP system, the company is able to estimate better in delivering products to customers, which will enhance company performance on the long-term.

The material requirements planning system output provides suitable information for inventory and production managers. It supports the process of inventory planning and controlling through answering the questions related to what, how much, and when to order and when the production should be scheduled and products delivered. It determines the detailed planning of power and required material to meet the requirements of the main production table. It has an effective role in planning the production priority or purchasing according to the planned orders to be launched for the product components and parts. It helps the statistical prediction with product components and preserves inventory to ensure receiving materials within the scheduled time. It focuses on long-term material planning, and handles production fluctuations using safety inventory. In the COVID 19 pandemic era, the need for material requirement planning to enhance supply chain performance becomes more obvious as the spread of COVID 19 and the significant restrictions on travels has caused a lot of damage to the economy globally (Akintokunbo & Adim, 2020).

Notably, The oil and gas industry is not left out in the adoption of material requirement planning so as to maximize its production; as such it is important for an organization to have a sound, effective and well-coordinated material planning system and strategy in place because, the business environment is rapidly evolving, dynamic and unpredictable, highly competitive and it is drastically affecting the performance of many organizations. The major decisions in inventory management of any organization, concerns material requirement planning, time to replenish an order and the quantity of such an order. The failure to manage these two concerns has significantly increased the total cost of the organizational performance especially the Oil and Gas Industry. The increase in demand for the company products coupled with modern production technology, resulted in vast number of different types of inventory and material requirement planning control has become a complex functions or process. Most of the challenges associated with material requirement planning and how they impact on supply chain performance of the oil and gas industry, has not been fully investigated. Therefore the researchers' point of departure is to investigate the nexus between material requirement planning and supply chain performance of oil and gas firms in Port Harcourt.

A conceptual framework of the relationship between the variables is depicted below.
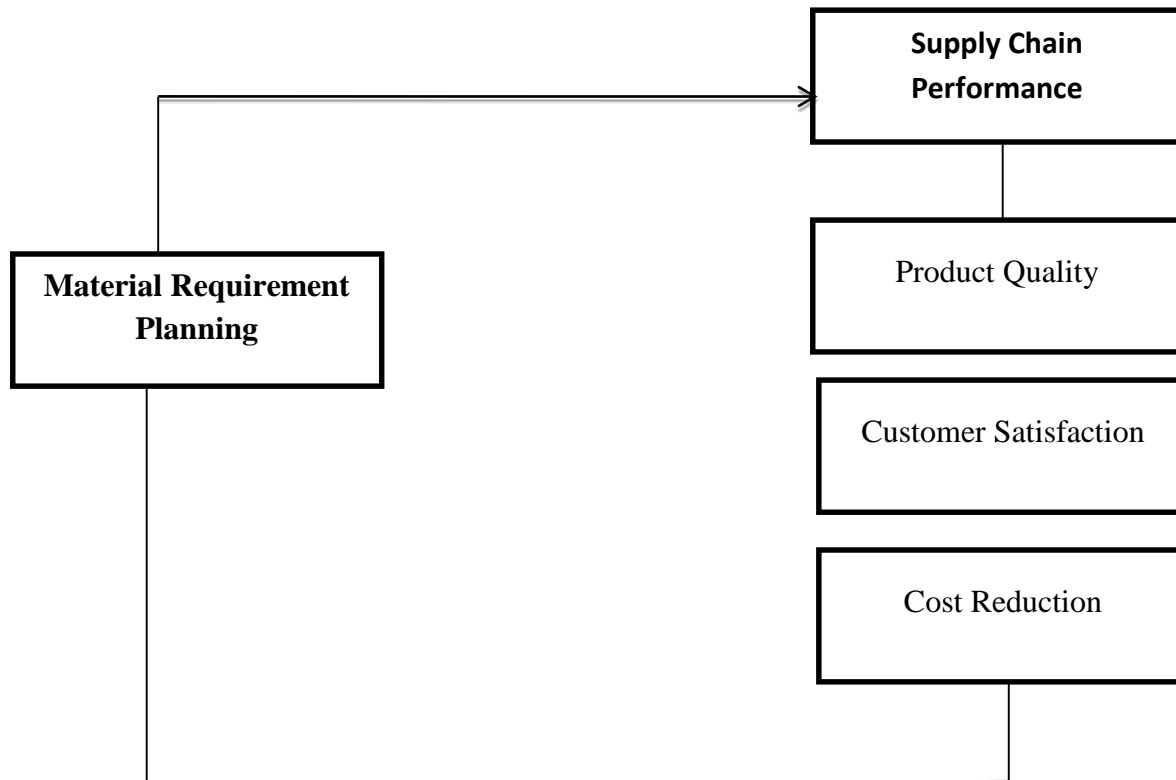
Figure 1: Conceptual Framework of the relationship between material requirements planning and supply chain performance of shipping firms in Rivers State, Nigeria

Source: Authors' conceptualization from the review of related literature, 2021.

LITERATURE REVIEW

Theoretical Foundation

Theory of Constraints

The principle of constraints is a management thinking that strive for an increase in the manufacturing output efficiency or system performance calculated by sales through the recognition of those practices that are compelling the manufacturing system (Goldratt, 2006). The theory of constraints is founded on the belief that a sequence is only as strong as the fragile connection or constraint and to uplift as well as manage the constraint is considered essential. The challenges associated with the theory of constraints are: very stretched lead times, huge quantity of unsatisfied orders, high level of preventable inventories or poor inventories, inadequate customer's commitment and recurrent changes or nonexistent control interrelated important orders, which indicates that there might exist schedule conflict of resources. The theory of constraints thus emphasizes on focusing effectively through managing the capacity and capability of these constraints if they are to improve the operational performance of their organization (Umble, 2006).

Available literature in strategic inventory management indicates that, the theory of constraints is important in the decrease of waste by recognizing all various stages within the value stream through reducing non-value adding actions and procedures, thereby leaving just a torrent of value adding activities that in turn increases performance (Mukherjee, 2010). Additionally, the theory of constraints is also important as it helps in recognizing order satisfaction strategies accessible to manufacturing firms in a bid to react excellently to snowballing product variability and expectations from customers. Likewise, theory of constraints reduces investment in stock and apportions possessions optimally through use of numerous inventory control procedures and systems to accomplish ideal inventory levels. Furthermore, the theory of constraint is of great importance in guaranteeing the enhancement of value for each process and stages that is measurable, while measurements should be carried out regularly by analysing the value of the product before and after the process in terms of increased sales and market share in a bid to upsurge the manufacturing output efficiency or system performance (Mukherjee, 2010)

Nature of Material Requirement Planning

There are several definitions and conceptualizations of material requirement planning. O'Grady (2012), one of the first system designers, defines material requirements planning as a group of sequencing, fundamental and coherent techniques through scheming special boundaries to decipher the main production arrangement to the desired needs of each component of the inventory and categorize appropriate approaches for them. This system is described as a group of sequencing, essential and logical techniques to transform the main creation planning to the constituent parts of the final product, so that it comprises the issuance of purchase or manufacture orders in a bid to implement main scheduling according to the regulated cost and requisite time.

Material Resource Planning (MRP) as an inventory management practice relies on computer software applications to manage inventories. It specifically breaks down inventory requirements into precise periods to maintain optimum inventory levels to attain continuous production (Oztemel & Gursev, 2020). It is designed to answer what is needed, when it is needed and how much is needed. MRP assists in planning capacity needs and allocating production times to achieve customer satisfaction. This practice has also been found to assist in managing inventories to meet

production requirements such as production speed, dependability and flexibility (Kallunki, Laitinen & Silvola, 2011; Banerjee 2018). Thus, MRP has been associated with operational performance by playing key roles in preventing inventory obsolescence, stock outs, excess stock levels while improving material flow, customer satisfaction and product quality (Oztemel & Gursev, 2020; Musi, Mukulu & Oloko, 2018; Katuu 2020).

The success of a supply chain business often relies on the effectiveness of its inventory strategy. Without a strong plan in place, companies may run short of or end up with surplus inventory on hand. To increase efficiencies and meet customer demand, Oil and Gas businesses should educate themselves on which of the different models of inventory strategies available best meets their need (Dubois 2016). This is an indication that inventory management strategies could correlate to increase efficiencies and productivity improvement. There are classical and non-classical inventory management strategies. The classical inventory management strategies are; Conventional Manufacturing Strategy (CMS), Economic Order Quantity (EOQ) and Economic Production Quantity (EPQ). The non-classical inventory management strategies are Material Requirements Planning (MRP), Just-in-Time (JIT) and Hybrid Push-Pull (HPP) or Lean Inventory Strategies. However, it could be said that classical inventory management strategies are gradually being phased out by some manufacturing firms due to some limitations such as downtimes and idle capacity while waiting for replenishment of inventories or due to congestion as a result of inventory surpluses.

Supply Chain Performance

Today, organizations are striving to improve their performance in response to turbulent business markets and the need to efficiently control their business activities. The understanding and practicing of supply chain management has become an essential prerequisite for staying competitive in the global race and enhancing performance (Shin, Benton & Jun, 2009). Most organizations have begun to realize that it is not only enough to improve efficiencies within an organization but rather making the supply chain management competitive among others will greatly improve their chances of survival.

The progress and enduring survival of any business organization in today's aggressive market environment depends largely on its ability to offer value in terms of quality products and services that meet the customer's satisfaction at a relatively reduced cost (Hammami, Temponi & Frein, 2014). Customers define and patronize what they perceive as value and this patronage metamorphoses into benefits of many kinds which can be viewed as the firm's supply chain performance (Inemek & Matthyssens, 2013). Supply chain performance is viewed as the effectiveness of firms in achieving their purpose. Inemek and Matthyssens (2013) hold that performance is a business jargon or construct that is applied in ascertaining the wellness status of an organization.

Competition is no longer between organizations, but among supply chains. According to Modi and Mabert (2007), supply chain performance is concerned with the actual output or results of an organization as measured against its intended outputs (or goals and objectives) aimed at surviving and remaining in business in spite of the competition. Different researchers have proposed different variables as being the fundamental that ensure good supply chain performance. Overall supply chain performance can be divided into three parts: financial performance, product

performance and operational performance (Inayatullah, Rakesh & Amar, 2012; Inemek & Matthyssens, 2013) thus this study anchors on operational supply chain performance measures.

Supply chain performance refers to how well an organization achieves its market-oriented goals as well as its financial goals (Askoy & Ozturk, 2011). The short-term objectives of supplier relationship management are primarily to increase productivity and reduce inventory cycle time, while long-term objectives are to increase market share and profit for all members of the supply chain through qualitative product delivery and customer satisfaction in cost effective way (Askoy & Ozturk, 2011). According to Inemek and Matthyssens (2013), supply chain performance refers to the outcome of purchasing effectiveness and purchasing efficiency.

Supply chain performance means the extent to which, by choosing a certain course of action, a previously established goal is being met. Both financial and non-financial metrics have served tools for comparing organizations and evaluating an organization's behaviour over time (Gong, 2008). Performance in supply chain is considered as the extent to which the supplier relationship management function is able to realize its predetermined goals at the minimum of the organization's resources and to the delight of customers (Shin *et al.*, 2009).

Supply Chain Performance Parameters

Waters (2007) assert that performance measurement of an entire supply chain is essential when managing and developing the supply chain itself, and becomes particularly important in those contexts where supply chains are considered as key factor of corporate success (Inemek & Matthyssens, 2013). Performance measurement is crucial for supplier relationship management; this is the act of managing the processes of evaluation, segmentation and selecting between suppliers (Pohl & Forstl, 2011).

Successful supply chain performance measurement relies on the adoption of appropriate metrics, able to capture the entire essence of the supply chain process. In this respect, performance measurement metrics should provide information for internal needs and external stakeholders' purposes as well as enable continuous organizational improvement. Among those metrics, product quality, customer satisfaction and cost reduction have long been recognized as important metrics for assessing the efficiency of the supply chain. Thus, the measures of supply chain performance as posited by Pohl & Forstl, (2011) and Panayides & Venus, (2009) and used for the study are product quality, customer satisfaction and cost reduction. The preceding section provides an elaborate discourse on the measures of supply chain performance.

Product Quality

Due to fierce competition across many markets today, quality has been considered as an entry level characteristic of the market place since organizations place premium on it in their purchasing decisions (Lee, Rhee & Cheng, 2013; Hammami *et al.*, 2014). On this note, we view quality as an essential component of market mix that can be adopted by organizations to differentiate effectively, their products and services from those of their competitors. For instance, many major procurement companies have during the last decades encouraged their suppliers to develop their quality management system and adopt a continuous improvement philosophy that helps eliminate non qualitative or value adding products within the organization (Shin *et al.,* 2009).

Quality is a factor that makes a product worthwhile. Shin *et al.,* (2009) defines quality as a mix of properties and characteristics that determines the extent to which a product can meet the needs of the consumer. In the views of Araz and Ozkarahan (2007), quality is the totality of the features and characteristics of product or service especially in meeting certain implied or stated needs. For Panayides and Venus (2009), quality means not goodness but conformity to certain laid down requirements or expectation. Panayides and Venus (2009) further stressed that the definition of quality can never make any sense unless it is based on what the customer wants, that is, a product is qualitative only when it conforms to the customer requirements.

Product quality is regarded as an effort to meet or exceed customer expectations through value creation. Araz and Ozkarahan (2007) posit that products with qualities that meet the standards of consumer's taste have the potential to assume a market leader position among its product class. To improve product quality, many companies opt for approach-based prevention. It is important that suppliers guarantee the level of product quality for their offerings (Panayides &Venus, 2009). Product quality is therefore, a key factor of supply chain performance. Providing quality products and services in the 21st century is not only to satisfy the customers, but also, to have a safe position in the market place. Quality product delivery and availability of product are critical to supply chain performance improvement.

Customer Satisfaction

No business can exist in the absence of the customer. Implicit in this truism is that every business organization`s success depends on the customer. Whenever a business is about to start, customers always come "first" and then the profit. If a customer's satisfaction is earned, then it is sure that the organization will record high performance. Those companies that are succeeding to satisfy the customers fully will remain in the top position in a market (Shin *et al.,* 2009). Today's organizations are beginning to realize that customer satisfaction is the key component for the success of the business and at the same time, plays a vital role in expanding the market value. In general, customers are those people who buy goods and services from the market or business that meet their needs and wants. Customers purchase products to meet their expectations (Lee *et al.,* 2013).

Customer satisfaction has been one of the top tools for successful business. Tao (2014); Hammami *et al.,* (2014) view customer satisfaction as an overall evaluation based on the total purchase and consumption experience with the good or service overtime. In marketing, customer satisfaction implies performance over expectation; that is, it ascertains the expectation of the customer on how the goods and services are being facilitated by the companies (Vouzas & Psychogios, 2012). Satisfaction implies feeling content after getting what the person desired or wanted. It is difficult to know if customers are satisfied with a company's product or service offering hence delivering satisfaction must be a conscious task on the part of the organization.

Panayides and Venus (2009) posit that satisfying the customer is dynamic and relative given the complex nature of the customer. Only the idea, "customer-centric" can help companies improve satisfaction and keep customer truly. While improving customer satisfaction, customer expectations should be noted. Customer satisfaction is influenced by specific product or service features and perceptions of quality thus increased customer satisfaction can provide company benefits like good supplier relationship, customer repurchase and increased customer positive

word of mouth communication (Tao, 2014). When a customer is satisfied with the product or service of a company, such customer tends to purchase frequently and recommend such products or services to potential customers.

At a glance, customer satisfaction is a crucial component of a business strategy as well as customer retention and product repurchase; it is a barometer that predicts the future customer behavior (Caridi, Pero & Sianesi, 2012). Yet, it is impossible for a business organization to grow and improve on its supply chain performance when it ignores or disregards the needs of customers (Tao, 2014). Hence, organizations must ensure that their product or service offerings are commensurate with their customers' expectation. This will increase the satisfaction of their customers and the long-term relationship between the customer and the organization as well as attract new customers through positive word of mouth (Vouzas & Psychogios, 2012). Satisfied customers usually rebound and buy more. Besides buying more, they also work as a network to reach other potential customers by sharing experiences thus the value of keeping a customer is only one-tenth of winning another one (Caridi *et al.*, 2012).

Cost Reduction

With heightened global competition that has reduced the profit margins of most companies, cost cutting has become the option and is being focused in logistics which has become the single largest and most important activity of most firms, both in the public and private sectors (Robert, 2016). As such, quite a significant portion of organizations' budgets is spent in these activities. Supplier relationship in particular is crucial in management of a supply chain. Cost is one of the most fundamental and important decisions made by buyers and organizations.

Resources must be sacrificed for any organization to achieve its objectives. From a literary point of view, cost is defined as a resource forgone to achieve a specific goal. This can be expressed as the monetary amount which must be paid to acquire goods and services. The term cost reduction denotes real or genuine saving in production, administration, selling and sharing costs resulting to the elimination of wasteful and inessential elements from the design of the product and from the techniques and practices carried out in connection therewith (Gong, 2008). The necessity for cost reduction arises when the profit margin has to be increased without an increase in the sales turnover (Robert, 2016).

The aim of cost reduction in any organization is to see whether there is any possibility in bringing about a saving in cost incurred- material, labour, overheads, etc. According to Groves, Collins, Gini and Ketter (2014), cost reduction is to be understood as the success of real and unchanging reduction in the unit costs of goods manufactured without impairing their suitability for the use intended. Low production cost has become one of the primary ways that organizations compete in a global economy; hence, cost reduction must continually be in the minds of managers of organization (McWatters, Morse & Zimmerman, 2001; Groves, Collins, Gini & Ketter, 2014).

Gong (2008) remark that cost reduction is a planned approach to reduce expenditure. It is a continuous process of examining critically all elements of cost and each aspect of the business with a view to improve business efficiency, cost reduction is a corrective function. Cost reduction is the process of cutting down costs incurred by an organization for the purpose of making profit. It starts when cost control ends and considers that no cost is at its optimum level. According to Adeniyi (2008) and Gong (2008), cost reduction starts with an assumption that current cost levels

or planned cost levels are too high despite the fact that cost control may be good and organization experiencing high efficiency levels.

Adeniyi (2008) views cost reduction as a calculated action plan that is basically adopted by organizations to enable them to diminish expenditures involved in doing business (Gong, 2008). This entails an attempt at ensuring that costs per units of goods or services without in anyway affecting the benefits of the intended usage of such products. On the other hand, it is the process of achieving and sustaining long term savings without reducing the quantity or quality of products or services offered. In planning for reduction in costs, Adeniyi (2008) emphasized that organizations need to adopt crash programs.

Adeniyi (2008) viewed cost reduction as that which focuses on established products whereby costs are reduced by lowering costs through adopting a way that reduces the materials used in production or approaches employed in services that will not affect both quantity and quality. Therefore, cost reduction is accomplished in inventory management through lowering costs associated with holding stocks, transporting, warehousing, and delivery. Reduction of costs is achieved at unit levels where accumulation of costs helps to alter physical attributes that makes the unit to become more and more efficient.

Material Requirement Planning and Supply Chain Performance

Materials requirements planning employ computer software applications to manage inventory. MRP applications break down inventory requirements into specific periods to keep production running smoothly while maintaining minimum inventory levels. Designed to answer what is needed, how much is needed and when it is needed, this model works backward from the planned finished product to determine the components and raw materials needed to create it. While costly to implement, MRP systems help manages plan for capacity needs and allocate production times. MRP is what Scutter (2014) and Telsang (2010) also described as Push inventory management strategy. Most companies have a better profit and satisfy customers when inventory managers develop an effective and efficient inventory management strategy such as JIT.

A survey study of manufacturing companies in Virginia and Tennessee was conducted to evaluate the current use and performance of computer systems to support manufacturing applications by Cheng (1997). The study explores the reasons organizations chose to use these systems, the problems and benefits derived from the MRP/ERP systems, and the characteristics of the types of companies that have benefited from the use of MRP-type systems. The survey participants evaluated the performance of their manufacturing or enterprise planning systems on the basis of data accuracy, customer satisfaction, user satisfaction, systems effectiveness, convenience, information relevance, and software reliability. Furthermore, success factors associated with organizational performance were tested and evaluated. The correlation between perceived performances was tested against the influence of upper management support, the level of emphasis on training, sources of technical expertise, and organizational experience with MRP-type systems.

Dean (2015) argues that regardless of the industry, it is advantageous for every manufacturer or supplier to increase sales performance, reduce the cost of selling, and ensure their survival. By evaluating sales performance, managers can make amendments so as to boost sales going forward (Farris, Neil, Phillip & David, 2010). Evidence in literature indicates that, sales performance is a combination of sales effectiveness and the aptitude of a company's sales professionals to become

effective at each stage of the customer's buying process, and eventually earn the business on the right terms and in the right time period and sales efficiency, the speed at which each task in the sales process is carried out. When this is efficiently executed, it enhances supply chain performance (Farris *et al.,* 2010).

Farris *et al.,* (2010) posits that sales performance is not just a sales function issue; it's an organization wide issue, as it necessitates profound cooperation between sales and marketing to appreciate what's working and not working, and how to ensure uninterrupted improvement of knowledge, information, skills, and strategies that sales people must utilize as they encounter sales opportunities. Notably, it is important to state that effective material requirement planning (MRP) has an influence on supply chain performance of oil and gas firms as it engenders adequate inventory planning that facilitates consistency in the production process. Based on the review of empirical literature, it appear that a relationship exist between material requirements planning and supply chain performance. On the basis of this assertion, the researcher therefore, hypothesizes that;

H01: Material requirements planning significantly relates with supply chain performance of Oil and Gas Firms in Rivers State.

METHODOLOGY

The study population comprised of two hundred and ninety-three (293) oil and gas servicing firms operating in Rivers State as enlisted in the Nigerian oil and gas industry annual report (2020). The sample size for the study comprised 149 oil and gas firms in Port Harcourt, Rivers state. The sample size was determined using the Taro Yamene formula. Furthermore, the researcher selected one management staff from each of the oil and gas firms operating in Rivers State as respondents for the study hence a total of one hundred and forty nine (149) respondents were used for the study. Categories of persons that constituted the respondents were Operations Managers and Procurement Managers. The 149 copies of questionnaire were usable for the data analysis. The validity of the scales used in this study was assessed for content, construct and face validity.

The content validity was ensured based on review of similar constructs from major variables of the study - material requirement planning and supply chain performance of oil and gas firms operating in Port Harcourt, Rivers State Nigeria. In construct validity, the questionnaire used by Telsang (2010), Owuor, Muma, Kiruri & Karanja, (2015) and especially Farris *et al.,* (2010) on the effect of Material requirement planning on the effectiveness of supply chain management in the united Kingdom manufacturing firms was adapted, modified and refined to suit our study. Similarly, the researcher used the Cronbach's Alpha analysis to ascertain the reliability and internal consistency of the measurement instrument while the Pearson Product Moment Correlation (PPMC) was used in testing the relationship between (Material Requirement planning and supply chain performance of oil and gas firms in Port Harcourt of Nigeria and the analysis was conducted with the aid of the Statistical Package for Social Sciences (SPSS) version 23.0.

Table 1 depicts the instrument reliability values for the study variables.

Table 1: Table Depicting Result of the Cronbach Alpha Reliability Test

S/No	Dimension/Measures of the study	Number of item	Cronbach's alpha
1	Material Requirement planning	5	0.850
2	Product Quality	5	0.700
3	Customer Satisfaction	5	0.863
4	Cost Reduction	5	0.780

Statistical Packages for Social Sciences (SPSS) version 23.

Table 1 above shows the reliability values for 4 constructs of the study. Based on the results obtained, all the reliability values were above 0.70 bench mark as posited by Nunally (1974). The result further depicts that the instruments used for the study had sufficient constructs reliability

DATA ANALYSIS AND RESULTS

Ho_1:   There is no significant relationship between material requirement planning and supply chain performance oil and gas firms in Rivers State.

Table 2: Relationship between material requirement planning and supply chain performance

		Material requirement planning	Product quality
Material Requirement Planning	Pearson Correlation	1	.761[**]
	Sig. (2-tailed)		.000
	N	149	149
Product Quality	Pearson Correlation	.761[**]	1
	Sig. (2-tailed)	.000	
	N	149	149

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

From the result in Table 2 it is observed that there is a correlation coefficient of 0.761[**] between supplier evaluation and product quality, indicating a very strong and positive relationship between Material Requirement Planning and Supply Chain Performance More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between Material Requirement Planning and Supply Chain Performance. This further implies that Material Requirement Planning can be used to achieve Supply Chain Performance among oil and gas firms in Rivers State. Based on this, we reject the null hypothesis and accept that a significant relationship exists between Material Requirement Planning and supply chain performance of oil and gas firms Rivers State.

DISCUSSION OF FINDINGS

The analysis of the study revealed a correlation coefficient of 0.761[**] between Material Requirement Planning and supply chain performance of oil and gas firms Rivers State, indicating a very strong and positive relationship between the study constructs. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between Material Requirement Planning and supply chain performance.

This finding agree with the views of Dean (2015), who posited that no matter what industry, it is advantageous for every manufacturer or supplier to increase sales performance, reduce the cost of selling, and ensure their survival. By evaluating sales performance, managers can make amendments so as to boost sales going forward (Farris *et al.,* 2010). Evidence in literature indicates that, sales performance is a combination of sales effectiveness and the aptitude of a company's sales professionals to become effective at each stage of the customer's buying process, and eventually earn the business on the right terms and in the right time period and sales efficiency, the speed at which each task in the sales process is carried out. When this is efficiently executed, it enhances supply chain performance (Farris *et al.,* 2010).

Farris *et al.,* (2010) posits that sales performance is not just a sales function issue; it's an organization wide issue, as it necessitates profound cooperation between sales and marketing to appreciate what's working and not working, and how to ensure uninterrupted improvement of knowledge, information, skills, and strategies that sales people must utilize as they encounter sales opportunities. Notably, it is important to state that effective material requirement planning (MRP) has an influence on supply chain performance of oil and Gas firms as it engenders adequate inventory planning that facilitates consistency in the production process. Based on the review of literature and empirical findings the researcher conclude that material requirements planning affect supply chain performance of oil and gas firms in Port Harcourt.

CONCLUSION AND RECOMMENDATION

In line with the findings of this study, the researcher conclude that material requirements planning affect supply chain performance of oil and gas firms in Port Harcourt, Rivers state Nigeria. Based on the theoretical and empirical findings, the researcher therefore, recommends that managers of oil and gas firms in Port Harcourt, Rivers state should strategically plan and implement efficient material requirement strategies in other to improve their level of supply chain performance.

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