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Leveraging Logistics Capabilities for Effective Supply Chain Planning of Oil and Gas Firms in South-South Nigeria

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Abstract
Oil and gas firms in south-south Nigeria that are able to leverage logistics capabilities efficiently will respond promptly to fluctuating market conditions and satisfy customers' needs and wants proficiently. This paper examines the impact of leveraging logistics capabilities for effective supply chain planning of oil and gas firms in south-south Nigeria. A cross-sectional survey research design was used to generate quantitative data from a population of twenty-three (23) Logistics managers of oil and gas firms in south-south Nigeria according to (Finelib 2016). The Tabachnick & Fidell's (2012) rule for sample size determination was adopted and the entire population was treated as the sample. For data collection, a survey questionnaire designed with a 5-point Likert scale with 1: strongly disagree and 5: strongly agree in Google Form and printed format were validated by academic researchers and practitioners with the subject matter expertise. The Cronbach alpha analysis determined its reliability and it was distributed via social media and email. To test the hypotheses, the multiple linear regression technique was used with the aid of the IBM, Statistical Package for Social Sciences software (SPSS) software, version 25. The results show that with a 1% increase in logistics capabilities, effective supply chain planning will increase by 0.575% (B value). Therefore, the study concludes that logistics capabilities have a positive and significant impact on effective supply chain planning of oil and gas firms in south-south Nigeria. The study thus, recommends that oil and gas firms in south-south Nigeria should invest in and adopt advanced technologies to ensure effective supply chain planning, buttressed by vital demand oriented and supply oriented logistics capabilities to achieve the holistic supply chain management goals and objectives.

INTRODUCTION

The south-south region of Nigeria is home to majority of the country's oil and gas reserves; thus, the region takes a substantial portion of the revenue generated from oil and gas activities through federal allocations (World Bank. 2020). More so, this region, especially the Niger Delta, is abundant in hydrocarbon resources and accounts for most of Nigeria's crude oil output. The Organization of Petroleum Exporting Countries (OPEC) (2023), reports that Nigeria is the top oil producer in Africa, with the South-South region responsible for about seventy-five (75%) of the nation's oil production. Hence, oil and gas firms have been a driving force behind Nigeria's economy, yielding more than ninety percent (90%) of export revenues and approximately seventy percent (70%) of government income over the past sixty (60) years (Aniefiok, Idaresit, Eventus & Joseph 2024). However, unfavorable government policies, growing customers' sophistication, dynamic customers' expectations and rapidly shifting customers' tastes are driving volatility and

uncertainty in many oil and gas firms in south-south Nigeria, putting their supply chains under severe pressure (Aka-Wolugbom, & Eketu, 2021). A supply chain is a web of firms, persons, activities, information, and resources utilized in the manufacturing and distribution of products or services to end users. It includes the whole process, from the sourcing of raw materials and components parts to the production of goods, their storage, transportation, and distribution, all the way to the point of consumption (Coyle, Langley, Novack & Gibson, 2016). The primary goal of a supply chain is to efficiently and effectively deliver products or services to customers while curtailing costs and maximizing value. Therefore, effective, data-driven supply chain planning in the oil and gas sector in south-south Nigeria is more critical than ever as it guarantees timely delivery of goods, fostering improved customer satisfaction, retension and loyalty (Fawcett, Ellram, & Ogden, 2019). Effective supply chain planning is the methodical and strategic process of optimizing end-to-end supply chain operations to ensure the timely and cost-effective delivery of products and services while abating risks and capitalizing on customer satisfaction (Chopra & Meindl, 2021). Efficient supply chain planning can optimize the allocation of resources of the oil and gas firms in south-south Nigeria, these resources encompass a range of activities and logistics capabilities. Logistics capabilities involves the combination of resources, skills, and technologies that help a firm to plan, execute, and control the flow of goods and information throughout the supply chain to meet customer requirements effectively (Mangan, Lalwani & Butcher, 2020). In line with the Resource based view theory, the utilization of valuable, rare, inimitable, and non-substitutable logistics capabilities can breed competitive advantage for oil and gas firms in south-south Nigeria.

Amahalu, (2019) reports that the oil and gas firms in south-south Nigeria are heavily regulated, which creates bureaucratic delays and compliance challenges. These regulations affect authorizations, customs processes, and logistics activities. More so, oil production has dwindled over the past few years due to large-scale theft, vandalism, and under-investment in infrastructure (Aanu, 2023). Remarkably, since May 2023, when the government removed the USD10.7 billion-a-year subsidy payments for imported petroleum products, the oil and gas industry in south-south Nigeria has been sickly due to local shortage risks. Subsidy removal has also resulted in higher fuel prices, high transportation cost, production, and inventory management costs which depletes the firms' logistics capabilities and supply chain planning objectives (Vanguard 2021). Folake, Godson and Aniekan, (2023) reports that subsidy was removed without any sustainable capacity to refine petroleum products for local consumption. Though, the revolutionary new Dangote refinery, also referred to as the "eighth wonder of the world" by Mr Femi Otedola is a six hundred and fifty thousand (650,000) barrels per day (bpd) plant and Africa's biggest oil refinery, projected to meet local consumption demand, raising confidence that local shortage risks will be mitigated, as at October, 2024, it is still only on paper! The Authority (2024) reports that rather than bring relief to suffering Nigerians, the Dangote refinery has dampened the high expectation of the people because the Nigerian oil and gas sector has been grossly mismanaged for decades. In recent times, major players in the oil and gas sector have indicated that the sixty thousand (60,000) barrel per day capacity Port-Harcourt refinery has begun the production process, while the Warri refinery is ninety percent 90% complete (Ozioma, 2024). Yet, unlocking their full potential requires overcoming security issues, inefficient infrastructure, inconsistent policies, and regulatory hurdles

that hinder the effective monetization and utilization of oil and gas resources especially in south-south Nigeria (Anaje & Oke, 2024).

Several scholars have investigated logistics capability from different perspectives, (Zhao *et al.*, 2001) examined connection capability, competitive advantage and higher firm performance (Lynch, 1998; Clinton & Closs, 1997; Eckert & Fawcett, 1996; Bowersox & Daugherty, 1995) studied logistics activities and firm performance, (Anderson & Narus, 1995), examined logistics capability and differentiation. They all discovered that logistics capability affects corporate strategy, firm performance and competitive advantage. However, the impact of logistics capabilities on effective supply chain planning in the Nigerian south-south environment has not been empirically investigated. This study is expected to bridge the knowledge gap and investigate the impact of leveraging logistics capabilities for effective supply chain planning of oil and gas firms in south-south Nigeria. Figure 1 illustrates the conceptual framework of the study.

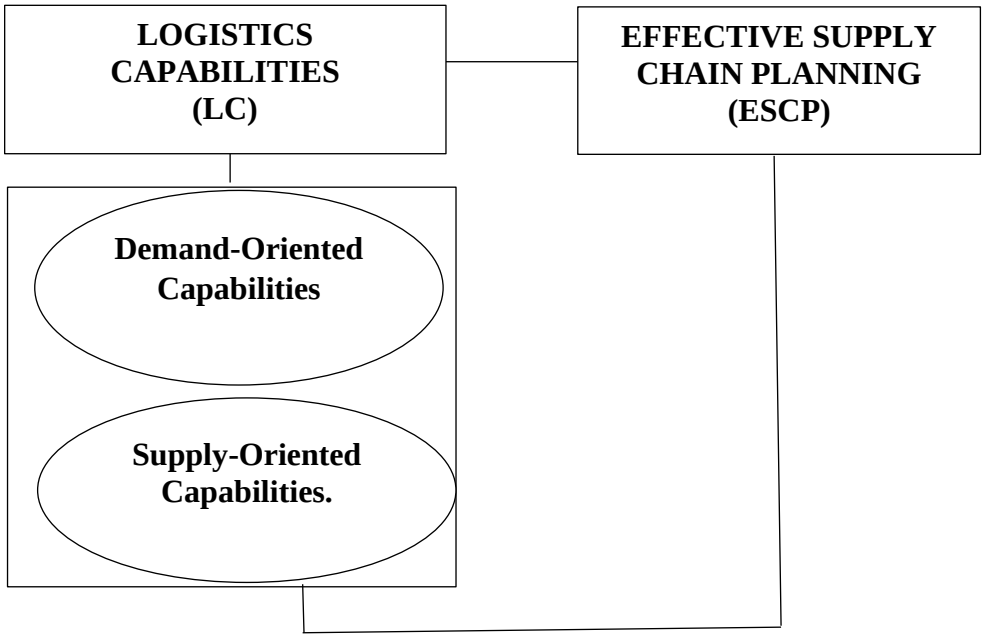

Figure 1: Conceptual Framework of the Impact of Leveraging Logistics Capabilities for Effective Supply Chain Planning of Oil and Gas Firms in South-South Nigeria
Source: Researchers' Conceptualization, (2024) as adapted from: (Rafał, 2011).

LITERATURE REVIEW

THEORETICAL FOUNDATION

Several theoretical perspectives reveal logistics capabilities and effective supply chain planning as conduits for top notch supply chain performance in accordance with Resource-Based View literature (Barney 2001). These capabilities, when harnessed as unique, valuable, and potentially

inimitable resources, can provide sustainable competitive advantage for firms. Hence, this study is anchored on the Resource Based View Theory.

RESOURCE-BASED VIEW THEORY

The Resource-Based View (RBV) theory is prevalent in the field of strategic management, it concentrates on the internal resources and capabilities of organizations as principal bases of their competitive advantage and overall growth. It was developed by Wernerfelt, (1984), in his seminal paper titled *A Resource-Based View of the Firm* as a rejoinder to the flaws of the industry-based view of competitive advantage, which mainly focused on external forces like industry dynamics and market structure. According to Wernerfelt, (1984), resources could be physical assets (e.g. machines, land) or immaterial assets (e.g. good will, technology, brand reputation) and organizations are different based on their resources and capabilities, and these differences boost competitive advantage. Coase (1937) as cited in Poi (2018) indicate that the resource-based view theory considers firms' resources as key to optimal organizational performance and the source of their competitive advantage. The (RBV) theory also states that the value of a firm's resources depends on their rarity, inimitability, non-substitutability, and appropriability (Barney 1991). According to Erik and Mats (2011), the (RBV) theory views firms as bundles of controllable resources that can be managed to enhance competitive advantages.

Over the last few years, the (RBV) theory literature has been extended towards a broader view of resources; their development, expansion and modification over time (Helfat *et al.*, 2007) as cited in (Erik & Mats 2011). More so, it has played a pivotal role in shaping research across different disciplines, offering insights into how organizations can develop and leverage their resources and capabilities to achieve competitive advantage, such as: Entrepreneurship (Helfat & Peteraf 2003), Environmental Sustainability (Hart, 1995), Human Resource Management (Wright, McMahan & McWilliams 1994), Strategic Management (Barney 1991), Supplier Relationship Management (Wagner & Bode 2008), Dynamic Capabilities in Supply Chains (Teece & Linden 2018). This perspective is relevant to logistics capabilities as they represent unique and valuable resources within a firm. Therefore, the (RBV) theory is adopted as the baseline theory for this study because it highlights the importance of resource heterogeneity in terms of capabilities.

CONCEPTUAL REVIEW

LOGISTICS CAPABILITY

The core of the logistics function is to ensure seamless movement of goods from point of origin to consumption. In business terms, logistics is the entire set of procedures involved in the movement of goods within an organization or from a supplier/vendor to a business or from a business to a customer (Jenkins 2022). Since logistics involves the set of activities related to the manufacturing and distributing of goods for consumption via materials management and physical distribution for customer satisfaction, logistics capabilities are essential for achieving firms' logistics goals (Rodrigue, 2020). Olavarrieta and Ellinger, (1997) as cited in Erik & Mats, (2011) suggest that capabilities are complex bundles of skills, assets and accumulated knowledge exercised through organizational processes, that enable firms to co-ordinate responsibilities and utilize their resources. Barney, (1991) indicates that logistics capability is an aspect of a firm's resources which includes all assets, competencies, processes, characteristics, information, knowledge, etc which

allow it to develop and implement strategies that improve efficiency and effectiveness. According to Christopher (2016), logistics capability is the firm's ability to flawlessly synchronize and manage the flow of materials, information, and services across the supply chain to meet customer demand in a timely manner. Logistics capability denotes the ability of a firm to implement day-to-day logistics related activities efficiently (Rushton, Croucher & Baker, 2010). Christopher & Peck, (2018) observed that logistics capabilities involve a set of unified tasks and processes that enhance a firm's ability to achieve its supply chain objectives. Adopting the supply chain resilience perspective, Pettit & Croxton (2010) defined logistics capability as a firm's capacity to survive and recuperate from disruptions while sustaining the continuity of its logistics operations. Hence, logistics capacity is the topmost flow of materials in the supply chain within a specific period, from which the best output of the supply chain within a limited period can be determined. Morash, Dröge & Vickery as cited in Rafał, (2011) identified two broad types of logistics capabilities namely: demand-oriented capabilities and supply-oriented capabilities.

DEMAND-ORIENTED LOGISTICS CAPABILITIES

Demand-oriented logistics capabilities help firms to offer the expected level of logistics services to customers, principally by identifying and anticipating customers' needs and wants, ensuring on-time deliveries, and subsequently, customers satisfaction. Hohenstein, Feisel and Hartmann (2015) suggest that demand-oriented logistics capability is an organization's capacity to effectively align its logistics and supply chain activities with the variations in customers' demand. Christopher & Towill (2001) emphasizes the importance of demand-driven logistics capabilities. They propose the need to harmonize supply chain processes with customer demand indicators to boost responsiveness and agility. According to Rafał, (2011), demand-oriented logistics capabilities include; pre-sales customer service, after-sales customer service, lead-time of deliveries, reliability of deliveries and response to customer needs. Additionally, demand-oriented logistics capabilities consist of; Demand Forecasting; by utilizing historical data, market trends, and advanced forecasting models to predict customer demand (Chopra & Meindl, 2019), Inventory Management; by applying inventory management techniques like: just-in-time (JIT), ABC and lean inventory practices (Simchi-Levi, Kaminsky & Simchi-Levi 2007), Distribution Network Design; designing the distribution network by establishing viable distribution centers, cross-docking facilities, and using workable transportation modes to ensure on-time delivery (Coyle, Langley, Novack & Gibson 2016), Transportation Optimization; route optimization, mode selection, and carrier management to ensure that goods are delivered efficiently and cost-effectively (Bowersox, Closs & Cooper 2019), Technology Integration; the use of advanced technology, such as Transportation Management Systems (TMS), Warehouse Management Systems (WMS), and real-time tracking to ensure quick responds to customers' demand (Mangan, Lalwani, & Butcher 2016). Therefore, we are inclined to define demand-oriented logistics capabilities as the expertise and resources within a logistics system that allow an organization to anticipate, respond to, and meet different levels of customers' requirements effectively and efficiently.

SUPPLY-ORIENTED LOGISTICS CAPABILITY

Supply-oriented logistics capability indicates an organization's aptitude to proactively source, produce, and deliver products or services in a way that reduces disruptions, make the most of

resource utilization, and enhances supply chain resilience (Simchi-Levi, Kaminsky & Simchi-Levi, 2007). Supply-oriented logistics capability is seen from the perspective of organizations, which offer products and services to the market. These capabilities are focused on the design and functioning of the distribution systems based on customers' expectations and competitors' distribution strategies, they include; intensive distribution, selective distribution and low-cost distribution (Rafał, 2011). According to Cunnane (2023), supply-oriented logistics capability is also defined by a firm's ability to improve resources and reduce costs in the managing of inbound logistics through leveraging data-driven methods to forecast demand correctly, manage inventory proficiently, and minimalize transportation and storage costs. Supply-oriented logistics capability can be understood as an organization's ability to orchestrate inbound and outbound logistics activities with a focus on reducing lead times, minimizing costs, and improving overall supply chain performance (Coyle, Bardi, & Novack 2016). This capability is essential for ensuring the timely and efficient flow of goods and services from suppliers to customers. Lambert *et al.* (2004), indicate that the effective management of relationships with suppliers is crucial for a well-functioning supply chain. SRM involves developing collaborative partnerships with suppliers to ensure a reliable supply of goods and services. Supply-oriented logistics capability refers to a business's aptitude to organize and control materials' management or inbound logistics processes, ensuring on time and efficient flow of materials from suppliers to the production line (Reiser, 2023). Supply-oriented logistics capability involves the expertise and resources that allow a company to effectively manage and oversee inbound logistics processes. This capability ensures that the supply aspect of the logistics operation aligns with production requirements, balances supply with demand, and upholds overall supply chain stability and efficiency.

EFFECTIVE SUPPLY CHAIN PLANNING

Effective supply chain planning is the process of making tactical decisions to create some equilibrium between the forces of supply and demand under uncertainty, optimize the supply chain network, and achieve precise business objectives while considering limitations, risks, and various performance metrics (Simchi-Levi, Kaminsky & Simchi-Levi, 2008). Similarly, Jabil (2023) defined effective supply chain planning as the course of determining the best manufacturing and sales volumes a firm intends to achieve and map out the steps to achieve those volume goals as well as other targets. According to Oliva & Watson, (2011), effective supply chain planning is a blueprint, process, scheme, or technique for harmonizing and coordinating supply and demand related activities in order to create value for the supply chain through inter and intra organizational collaboration and/or optimization (Pibernick & Sucky, 2007). In the same vein, effective supply chain planning encompasses integrating tactical and strategic decision making related to the entire supply chain. For Jonsson & Holmström (2016) effective supply chain planning can be leveraged in sales and financial planning to analytically maximize opportunities. PlanetTogether, (2023) reports that effective supply chain planning is the procedure of carefully anticipating demand, scheduling materials, production, marketing, distribution, and sales to achieve supply chain goals and objectives. The essence of effective supply chain planning is to ensure that all aspects of the supply chain, from marketing, procuring materials, scheduling operation, to shipping and delivery are synchronized. Roland Berger (2018) indicates that the purpose of effective supply chain planning is to accurately estimate the needs and wants of customers and ensure that they receive the right product, through the right channel, in the right quantity and at the right time. Jatta, (2016)

suggests that there are three broad stages of effective supply chain planning they include: operational planning, tactical planning, and strategic planning. These plans are further broken down into supply planning, procurement planning, capacity planning, production planning, collaborative planning, forecasting, and replenishment, sales and operations planning, forecasting and demand planning. Therefore, effective supply chain planning is a complicated process that involves different components, including demand forecasting (Fildes et al., 2019), inventory management (Simchi-Levi et al., 2020), supplier relationship management (Narasimhan & Das, 2001), production planning (Pinedo, 2012), logistics, and information technology integration planning (Chopra & Meindl, 2021). Taking a cue from Chopra & Meindl, (2021), we construe that effective supply chain planning involves the methodical and strategic procedure of enhancing end-to-end supply chain operations to guarantee the timely and cost-effective delivery of products and services while curtailing risks and maximizing customer satisfaction.

LOGISITICS CAPABILITIES AND EFFECTIVE SUPPLY CHAIN PLANNING

Planning the chains of supply entails coordinating and integrating key capabilities undertaken by different supply chain partners, ranging from the procurement of raw materials to the distribution of the final products to the end users. Different scholars have established that logistics capabilities have a substantial impact on effective supply chain planning. According to Nur *et al* (2017), logistics capabilities, in terms of IT implementation, and innovation capability have significant positive relationship with the (LSPs') performance. Identifying common logistical problems relative to the logistics capabilities of a firm is a prerequisite to effective supply chain planning. Thunberg (2016) opined that the first step in developing an effective supply chain planning framework is to review and understand the current state in operations with regard to logistics. This means that the design of an effective supply chain planning framework should focus on creating a process recounting the planning process, a firm with the capability to perform the procedure, and identifying performance metrics for gauging supply chain performance. Logistics capabilities, such as precise demand forecasting, aids effective supply chain planning; as organizations with advanced forecasting techniques and data analytics capabilities can better combat demand fluctuations (Xu, Wu & Xu 2021). Inventory optimization models and technologies which are core logistics capabilities can also enhance effective supply chain planning by minimizing excess stock, stock out situations as well as customers' defects (Wang, Xie & Tang, 2020). Finally, logistics capabilities breed strong relationships with suppliers which creates supplier collaboration and seamless information sharing in the supply chain, which can enhance better lead time management and product quality through an effective supply chain planning framework (Zhu, Feng & Cheng 2022). The foregoing explains that logistics capabilities could impact effective supply chain planning. Nevertheless, due to statistical investigation and clarification, this study proposes the hypotheses as follows:

H_{01}: Demand-oriented logistics capabilities have no significant impact on effective supply chain planning of the oil and gas industry in south-south Nigeria.

H_{02}: Supply-oriented logistics capabilities have no significant impact on effective supply chain planning of the oil and gas industry in south-south Nigeria.

METHODOLOGY

A cross-sectional survey research design was utilized to generate quantitative data from a population of twenty-three (23) Logistics managers of oil and gas firms in south-south Nigeria according to (Finelib 2016). The Tabachnick & Fidell's (2012) rule for sample size determination was adopted and the entire population was treated as the sample. For data collection, a survey questionnaire designed with a 5-point Likert scale with 1: strongly disagree and 5: strongly agree in Google Form and printed format were validated by academic researchers and practitioners with subject matter expertise. The Cronbach alpha analysis determined its reliability and it was distributed via social media and email. Nineteen (19) questionnaire out of the twenty-three (23) distributed were returned, and only seventeen (17) were considered usable, two were eliminated because most of the questions were left unanswered. To test the hypotheses, Multiple linear regression technique was used with the aid of the IBM (SPSS) software, version 25. Table 1 and Table 2 indicate the reliability test results.

RESULTS

Table 1: Logistics Capabilities Scale

Reliability Statistics

Cronbach's Alpha	N of Items
.827	3

Source: (SPSS Output of Data Analysis 2023)

Table 2: Supply Chain Planning Scale

Reliability Statistics

Cronbach's Alpha	N of Items
.901	6

Source: (SPSS Output of Data Analysis 2023)

The result of the Reliability test above shows the Cronbach's Alpha coefficient of 0.827 and 0.901 respectively**;** perfect measure of the internal consistency of the Logistics Capabilities Scale and the Supply Chain Planning Scale.

Table 3:

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.283	3	10.761	40.303	.000[b]
	Residual	4.281	16	.267		
	Total	36.563	19			

a. Dependent Variable: Our organization have a documented supply chain strategy in place

b. Predictors: (Constant), Does your organization optimize inventory levels to meet demand while minimizing carrying costs? Does your organization collaborate with suppliers to meet demand fluctuations? Our organization use different technologies or automation in our inventory management processes

Source: (SPSS Output of Data Analysis 2023)

Table 4:

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.976[a]	.892	.867	.464	.892	40.303	3	16	.000

a. Predictors: (Constant), Does your organization optimize inventory levels to meet demand while minimizing carrying costs? Does your organization collaborate with suppliers to meet demand fluctuations? Our organization use different technologies or automation in our inventory management processes

b. Dependent Variable: Our organization have a documented supply chain strategy in place

Source: (SPSS Output of Data Analysis 2023)

Table 5:
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0%Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.577	.408		4.625	.001	.879	.798
	Does your organization optimize inventory levels to meet demand while minimizing carrying costs?	.369	.512	.379	6.342	.000	.296	.991
	Does your organization collaborate with suppliers to meet demand fluctuations?	.472	.381	.492	4.251	.001	.297	2.221
	Our organization use different technologies or automation in our inventory management processes	.575	.624	.615	6.587	.000	.290	.532

a. Dependent Variable: Our organization have a documented supply chain strategy in place
Source: (SPSS Output of Data Analysis 2023)

The F-ratio in the Analysis of Variance (ANOVA) results in Table 3 shows that the entire regression model is appropriate for the data. This means that the independent variables are statistically significant to predict the dependent variable, therefore, $F(3, 16) = 40.303$, $p < .0005$; the P value is less than .0005. The R value of .976 on Table 4 expresses that the model has a very high measure of the attribute to predict the criterion variable. In reverse, the R2 value of .892 shows that our independent variables explain 0.892% of the variability of our dependent variable and the Adjusted R2 value of .892 which is not far off from .892 illustrates the suitability of the regression model with the inclusion of more independent variables. Finally, Table 5 illustrates the P values (quoted under Sig.) as .000, .001 and .000, all below the acceptable level of significance, that is below 0.05 for 95% confidence interval. With a 1% increase in logistics capabilities, Supply chain planning will increase by 0.575% (B value). Therefore, the null hypotheses proposed earlier are rejected and the alternate hypotheses accepted. Thus:

H_{A1}: Demand-oriented logistics capabilities have a significant impact on effective supply chain planning of the oil and gas industry in south-south Nigeria.

H_{A2}: Supply-oriented logistics capabilities have a significant impact on effective supply chain planning of the oil and gas industry in south-south Nigeria.

DISCUSSION OF FINDINGS

This study investigated the impact of leveraging logistics capabilities for effective supply chain planning of oil and gas firms in south-south Nigeria. The results show that logistics capabilities have a positive and significant impact on effective supply chain planning. This finding is in line with previous studies (Thunberg 2016; Ivanov & Dolgui 2020). Logistics capabilities aid effective supply chain planning; as organizations with advanced forecasting techniques and data analytics capabilities can better combat demand fluctuations (Xu, Wu & Xu 2021). Nur *et al* (2017) found that logistics capabilities have significant positive relationship with logistics service performance (LSP), this means identifying common logistical problems relative to the logistics capabilities of a firm is a prerequisite to top notch logistics service performance (lsp) which is an outcome of effective supply chain planning. More so, Wang, Xie & Tang, (2020) revealed inventory optimization models and technologies which are core logistics capabilities can enhance supply chain planning by minimizing excess stock, stock out situations and customers' defects. The results also align with the Resource-Based View (RBV) theory, as firms can leverage their unique resources, which include logistics capabilities, to formulate and implement effective strategies (Grant, 1991).

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to determine the impact of leveraging logistics capabilities for effective supply chain planning of oil and gas firms in south-south Nigeria. Data was obtained through survey questionnaire distributed among logistics managers of oil and gas firms in south-south Nigeria. The results indicate that with a 1% increase in logistics capabilities, effective supply chain planning will increase by 0.575% (B value). Therefore, we conclude that logistics capabilities have substantial and positive impact on effective supply chain planning. Therefore, the study recommends that oil and gas firms in south-south Nigeria should invest in and adopt advanced technologies to ensure effective supply chain planning, buttressed by vital demand oriented and supply oriented logistics capabilities to achieve the holistic supply chain management goals and objectives. This study has far-reaching implications for individual firms, the entire industry, the south-south Nigeria economy, and the environment. By implementing the findings and recommendations of the study, the region will have more resilient, efficient, and sustainable oil and gas supply chains.

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