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NEXUS BETWEEN VENDOR SELECTION AND PROJECT DELIVERY TIME IN EKO ELECTRICITY COMPANY

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ABSTRACT

Studies have shown that vendor selection is key in project delivery time. This study, therefore, examined the relationship between vendor selection and project delivery time, with empirical evidence from Eko electricity distribution Companies in Lagos, Nigeria. The study adopted a survey research design with a sample size of one hundred and twenty-eight (128) members of staff which consisted of project managers, operation managers, and supervisors. The study adopted double sampling techniques comprised of convenience and judgmental samplings. Descriptive and inferential statistics were engaged. For descriptive statistic, mean and standard deviation were adopted, while multiple regression technique with the aid of SPSS version 21 was used to analyse the formulated hypothesis. The findings of this research revealed that there is a strong positive relationship between vendor selection and project delivery time among staff members of Eko Electricity distribution companies (r2 =0.640). rigorous vendor evaluation processes should be carried out that will help in selecting vendors that are capable of delivering high-quality services within stipulated timelines. However, utilizing advanced management software to streamline the vendor selection process, monitoring performance, and maintaining real-time communication should help enhance transparency, improve decision-making, and promoting efficient management of vendor- related activities.

Keywords: *vendor performance, lead time, defect rate, project delivery time,*

1.1 Background to the Study

The Eko Electricity Distribution Company (EKEDC) is a crucial player in Nigeria's power industry, resulting from the privatisation of the National Electric Power Authority (NEPA) in 2013. The company's vendor selection procedure is crucial to its operations, as it ensures the acquisition of goods and services that are in line with both its core and non-core activities (Eko Electricity Distribution Company, 2024). The process of selecting a vendor is not just a simple procurement task, but rather a strategic function that can have a substantial impact on the company's operational efficiency, risk management, and cost-effectiveness (Chemjor, 2024). The process of vendor selection at EKEDC follows a methodical and analytical approach, where suitable suppliers are identified, assessed, and engaged based on their capacity to fulfil certain operational and strategic requirements (Anselem, 2023). This method is essential for the company's delivery time, which serves as a critical performance metric for evaluating its service quality and client happiness. Ensuring the company's reputation and operational performance relies heavily on the careful selection of vendors who can consistently provide the required goods and services within the specified timeframe (Gunasekaran & Ngai 2020).

The influence of choosing a vendor on the time it takes to supply goods or services is especially clear in EKEDC's recent projects. As an example, the company introduced a rapid delivery mass metering programme called the Mobile MAP Initiative. This programme guaranteed that metres would be delivered within 72 hours, highlighting the significance of selecting efficient vendors to ensure swift service delivery (Vanguard News, 2024). Furthermore, the company's dedication to achieving high levels of efficiency is evident in its customer-focused strategy, which promotes the utilisation of online platforms for convenient and efficient service delivery (EKEDC, 2024). The relationship between choosing a vendor and the time it takes to deliver goods is emphasised by the significant influence of strategic decisions within EKEDC. The company's emphasis on operational efficiency has resulted in notable advancements in service delivery, as demonstrated by the decrease in Aggregate Technical, Commercial, and Collection (ATC&C) losses and the improvement of customer experience (Vanguard News, 2024). The mentioned accomplishments

emphasise the crucial significance of proficient vendor selection in ensuring the prompt provision of services and the overall success of the organisation (Kannan, 2018). Within the framework of EKEDC, the process of selecting vendors encompasses more than just obtaining the most favourable pricing or the utmost quality of goods and services. It also involves verifying that suppliers are capable of adhering to the specified delivery schedules, which directly impact the company's capacity to serve its clients effectively. It is crucial for the organisation to choose vendors who can meet rigorous delivery deadlines in order to uphold its service standards and fulfil its obligations to clients (Foerstl, Azadegan, Leppelt, & Hartmann 2021). The correlation between vendor selection and delivery time is intricate, contingent upon multiple factors including market trends, vendor skills, and the company's internal processes (Choi & Hartley 2022). As EKEDC continues to deal with the difficulties of the power industry, it is prioritising the improvement of its vendor selection process. To boost its delivery times and strengthen its market position, EKEDC can improve by developing clear and objective criteria for vendor evaluation and integrating technology into the selection process (Weber, Current, & Benton, 2021).

1.2 Statement of the Problem

It has been observed that Eko Electricity Distribution Company (EKEDC) operates in a sector where the timely delivery of projects is not just a goal but a necessity for maintaining service quality and customer satisfaction. The vendor selection process is a critical factor that influences the company's ability to deliver projects on time. However, there are several variables within this process that can significantly impact the efficiency and effectiveness of project delivery (Kannan, 2018). Vendor performance is a key variable that directly affects the timely delivery of projects. The ability of vendors to meet contractual obligations, provide quality goods and services, and adhere to delivery schedules is paramount (Gopal, Espinosa, Gosain & Darcy 2021). In the case of EKEDC, the performance of vendors is often marred by financial constraints, leading to delays in the procurement process and, consequently, project timelines. Assessing the impact of vendor performance on the timely delivery of projects is essential to identify bottlenecks and implement

corrective measures (Harrington, Lambert, & Christopher 2020).

Lead time, the period between the initiation and completion of a production process, is another critical variable. In the context of EKEDC, extended lead times can result from various factors, including inefficient vendor selection processes, logistical challenges, and the inherent complexity of the electricity distribution network. Evaluating the impact of lead time on the timely delivery of projects is crucial for EKEDC to streamline its operations and reduce delays (Wadhwa, Rao, & Chan 2020). The defect rate, which refers to the frequency of defects in delivered goods and services, is a variable that can have a profound impact on project delivery (Meng, 2022). A high defect rate necessitates rework, additional quality checks, and, in some cases, complete replacement of components, leading to significant delays. Determining the impact of the defect rate on the timely delivery of projects is vital for EKEDC to enhance its quality control measures and vendor selection criteria (Anselem, 2023).

The integration of these variables into the problem statement highlights the multifaceted challenges faced by EKEDC in its vendor selection process. The company must navigate the intricate relationship between vendor selection and project delivery times. Addressing these issues requires a comprehensive approach that encompasses the evaluation of vendor capabilities, optimization of procurement strategies, and enhancement of quality control protocols. This therefore inform the need to examine the relationship between vendor selection and project delivery time among Eko electricity distribution companies in Lagos State.

1.3 Objective of the study

The broad objective of this study is to determine the Nexus between vendor selection and project delivery time at Eko electricity distribution company with the specific objective as to:

1. Ascertain the effect of vendor selection (vendor performance, lead time, and defect rate) on project delivery time of Eko electricity distribution companies in Lagos State

1.4 Research Question

Having formulated the objective above, the research question was raised

1. Of what effect is vendor selection (vendor performance, lead time, and defect rate) on project delivery time of Eko electricity distribution companies in Lagos State

1.5 Research Hypothesis

Ho: Vendor selection (vendor performance, lead time, and defect rate) have no effect on project delivery time of Eko electricity distribution companies in Lagos State

2.0 Literature Review

2.1 Vendor Selection

Selecting the right vendors plays a pivotal role in ensuring timely project delivery within the electricity sector. Existing literature offers a rich tapestry of vendor selection models and frameworks, equipping organizations like EKEDC with valuable tools for making informed decisions (Rahman et al., 2021).

A critical contribution by Rahman et al. (2021) lies in their systematic review of vendor selection criteria used in supply chain management. This review highlights key factors that influence vendor selection, including cost, quality, delivery time, and past performance. These factors serve as the foundation for effective vendor selection, ensuring EKEDC procures materials and equipment that are not only cost-effective and high-quality but also arrive within the designated timeframe.

Building upon this foundation, studies by Ahire & Sun (2018) and Singh & Singh (2017) emphasize the importance of a structured and data-driven approach to vendor selection. This approach moves beyond subjective decision-making and leverages objective criteria to evaluate potential vendors. By employing a structured and data-driven approach, EKEDC can ensure consistency and minimize the risk of bias during the selection process. However, there is a need to delve deeper into how existing frameworks integrate factors that specifically influence timely delivery. While cost, quality, and past performance remain crucial, research suggests that a shift is required to prioritize delivery time alongside these traditional considerations.

Scholars like Jiao & Zhao (2010) argue for a more nuanced approach that acknowledges the increasing importance of timely delivery in today's dynamic business environment. Their research on price-delivery time competition highlights the need for models

that consider not only cost-effectiveness but also the speed of delivery. Adapting existing frameworks to incorporate delivery time as a key evaluation criterion alongside cost and quality becomes crucial for EKEDC to optimize its vendor selection process and ensure project completion within timeframes.

One potential avenue for achieving this is by incorporating weighted scoring models. Such models assign different weights to various criteria based on their relative importance to the project. For EKEDC, delivery time might be assigned a higher weight than in other industries due to the critical nature of electricity distribution. Additionally, exploring multi-criteria decision-making models (MCDM) could be beneficial. MCDM models consider a multitude of factors and utilize mathematical methods to arrive at the optimal vendor selection decision, ensuring all aspects, including delivery time, are carefully evaluated.

By critically evaluating existing vendor selection frameworks and exploring adaptations to prioritize delivery time, EKEDC can ensure it selects vendors who are not only cost-effective and reliable but also deliver critical materials and equipment within the required timeframe, ultimately contributing to timely project completion and improved service delivery (Oyewunmi & Ehanmo 2021).

2.1.2 Vendor Performance

Beyond simply selecting the right vendor, ensuring that vendor consistently delivers high performance is paramount for achieving timely project completion in the electricity sector. Research by Carter et al. (2017) underscores this notion by emphasizing the crucial role of choosing suppliers who are not only qualified but also exhibit responsiveness, reliability, and a commitment to adhering to project specifications. These qualities act as the engine propelling timely delivery, ensuring projects remain on track and avoid delays.

Delving deeper, studies can explore how specific vendor factors directly influence project timelines. Communication plays a critical role. Responsive vendors who maintain open communication channels with EKEDC can proactively address any potential issues that might arise during the manufacturing or delivery process, allowing for timely adjustments and course corrections. Additionally, strong project management skills are essential. Vendors with a proven track record of effectively managing projects ensure materials and

equipment are produced and delivered within the agreed-upon timeframe (Lindstrom, 2019).

Furthermore, a vendor's adherence to deadlines is a cornerstone of timely delivery. Vendors who consistently meet deadlines minimize delays and ensure EKEDC can maintain its own project schedules. Studies by Jiao & Zhao (2010) highlight the negative consequences of unreliable suppliers on project timelines. Their research on price-delivery time competition emphasizes the cost associated with delays caused by unreliable vendors, further underlining the importance of selecting vendors with a documented history of on-time delivery.

Beyond simply understanding these factors, it is crucial to explore how EKEDC itself evaluates and measures vendor performance, particularly regarding delivery time (Anselem, 2023). This might involve analyzing the specific performance metrics used by EKEDC. Common metrics include on-time delivery rate, responsiveness to communication, and adherence to project milestones. Understanding how EKEDC utilizes these metrics to assess vendor performance provides valuable insights into the effectiveness of the current selection process. Additionally, investigating how these performance metrics influence future vendor selection decisions is essential. Do vendors with consistently high on-time delivery rates receive preferential treatment during the selection process? Does EKEDC implement any form of penalty system for vendors who consistently miss deadlines? (Weber, Current, & Benton 2021).

By critically evaluating vendor performance with a specific focus on delivery timeliness, EKEDC can identify areas for improvement within its vendor management practices. Implementing a robust vendor performance evaluation system that prioritizes timely delivery can help ensure that selected vendors consistently meet deadlines, ultimately contributing to faster project completion and improved service for electricity customers (Anselem, 2023).

2.1.3 Lead Time

Lead time, the seemingly innocuous period between placing an order and receiving materials, plays a crucial role in project planning within the electricity sector. Vrijhoef & Narasimhan's (2019) research on supply chain disruptions underscores this reality. They highlight how inaccurate lead times can lead to significant disruptions in manufacturer performance, ultimately

causing delays and impacting project timelines. For EKEDC, ensuring accurate lead time estimation becomes paramount to maintaining efficient project schedules and timely delivery.

Understanding how EKEDC currently estimates vendor lead times is crucial. Do they rely solely on vendor-provided information, or do they incorporate additional factors? Studies can explore the current practices employed by EKEDC and identify potential areas for improvement. For instance, implementing collaborative forecasting techniques with key vendors could enhance lead time accuracy. Such techniques involve sharing demand and supply data, allowing both EKEDC and its vendors to develop more realistic forecasts that account for potential fluctuations in material needs.

The impact of miscalculations on project schedules is another critical area for investigation. Research by Lee & Dobler (2019) emphasizes the importance of efficient inventory management to ensure on-time delivery. Inaccurate lead times can disrupt inventory planning, leading to stockouts and delays in project execution. Studies can explore how lead time miscalculations have impacted project timelines at EKEDC and analyze the associated costs and consequences.

Furthermore, exploring how vendor selection practices can influence the accuracy of lead time estimations is vital. Selecting vendors with a proven track record of providing accurate lead times is crucial. Studies by Carter et al. (2017) suggest that a focus on supplier responsiveness can be beneficial. Responsive vendors are more likely to proactively communicate potential delays or changes in lead times, allowing EKEDC to adjust project schedules accordingly. Additionally, considering a vendor's historical performance data during the selection process can be valuable. Vendors with a consistent record of meeting or exceeding their quoted lead times would be preferable to those with a history of delays.

By critically evaluating lead time estimation practices and their relationship with vendor selection, EKEDC can identify strategies for improvement. Implementing collaborative forecasting techniques, prioritizing vendor responsiveness, and utilizing historical performance data during vendor selection are potential avenues to enhance lead time accuracy. Ultimately, these efforts contribute to smoother project execution, reduced delays, and timely delivery of critical

infrastructure projects within the electricity sector (Chen, 2022).

2.1.4 Defect Rate

While factors like vendor selection and lead time are crucial for timely delivery, the presence of defects in materials or equipment supplied by vendors can silently disrupt project timelines within the electricity sector. Defects necessitate rework or replacement, leading to delays and potentially compromising project quality. Research is needed to fully understand the impact of defect rates on project completion times at EKEDC (KWGNP, 2019).

Studies can explore how EKEDC currently manages and monitors defect rates from different vendors. Does EKEDC have a system in place for tracking and analyzing defect rates across its vendor base? Understanding the current practices allows for identification of potential shortcomings. Implementing a robust quality management system that includes thorough inspection procedures at various stages of production can be beneficial. Additionally, establishing clear communication channels with vendors regarding defect identification and reporting can facilitate faster resolution and minimize delays (Gunasekaran, 2021).

Furthermore, investigating how vendor selection criteria can be tailored to prioritize vendors with historically low defect rates is crucial. Research by Singh & Singh (2017) highlights the importance of incorporating quality considerations into vendor selection processes. While cost and delivery time remain important, studies can explore how EKEDC can integrate quality metrics, specifically defect rates, into its vendor selection process. One approach might involve assigning a weighting to defect rates during vendor evaluation. Vendors with consistently low defect rates would receive higher scores, increasing their chances of selection.

Another potential avenue lies in implementing supplier qualification programs. These programs involve a comprehensive evaluation of a vendor's quality management practices, manufacturing processes, and historical defect rates. By selecting vendors who demonstrate a commitment to quality and a proven track record of low defects, EKEDC can significantly reduce the risk of delays caused by rework or replacements (Forker, 2019).

Focusing on defect prevention through robust quality management systems and

incorporating defect rates into vendor selection criteria are essential steps for EKEDC. By prioritizing vendors with a history of low defects, EKEDC can minimize disruptions caused by rework and ensure timely project completion, ultimately contributing to reliable electricity distribution (Anselem, 2023).

2.1.5 Timely Delivery of Projects

Timely delivery, the successful completion of a project within the pre-determined timeframe, serves as the ultimate measure of success in the electricity sector. Lee & Dobler (2019) highlight the importance of efficient inventory management for on-time delivery. However, for EKEDC, understanding how timely delivery is defined and measured specifically within the context of vendor-supplied materials and equipment becomes crucial.

Studies can explore the current metrics employed by EKEDC to assess timely delivery. Do they solely focus on project completion dates, or do they incorporate additional factors like lead time adherence and defect rate? Understanding how EKEDC defines and measures timely delivery provides a baseline for evaluating the effectiveness of current practices. Additionally, investigating how these metrics are communicated to vendors can be beneficial. Clear communication regarding delivery expectations sets the stage for vendor performance and ultimately contributes to project success (Jun, Qiuzhen, & Qingguo 2021).

Furthermore, research investigating how the selection of vendors with a proven track record of on-time delivery impacts overall project completion timeliness is valuable. Studies by Carter et al. (2017) emphasize the importance of choosing reliable suppliers. Selecting vendors with a history of meeting deadlines minimizes delays and ensures EKEDC can maintain its project schedules. Analyzing the correlation between vendor on-time delivery performance and overall project completion timelines at EKEDC would provide valuable insights.

Beyond simply selecting reliable vendors, exploring how EKEDC can incentivize on-time delivery is crucial. Research suggests implementing performance-based contracts. These contracts link vendor compensation to their performance on key metrics, including timely delivery. Vendors who consistently meet deadlines would receive higher rewards, while those who miss deadlines might face financial penalties. This approach

incentivizes vendors to prioritize timely delivery, ultimately benefiting EKEDC by ensuring projects are completed within the designated timeframe (Supply 2022).

By establishing a clear definition and measurement system for timely delivery, communicating expectations to vendors, and implementing incentives for on-time performance, EKEDC can ensure that vendor selection practices contribute to achieving timely project completion and ultimately improve service delivery to its customers.

2.2 Theoretical Review

Ensuring timely project completion within the electricity sector hinges on a critical yet often overlooked aspect: selecting the right vendors for materials and equipment. This selection process plays a pivotal role in mitigating delays and ensuring projects stay on track. Two prominent theoretical frameworks offer valuable insights for EKEDC in its quest to optimize vendor selection for timely delivery: the Resource-Based View (RBV) and Transaction Cost Economics (TCE).

Resource-based View Theory (RBV)

The RBV theory, pioneered by Wernerfelt (1984) and Barney (1991), posits that a firm's competitive advantage stems from its unique and valuable resources and capabilities (Barney, 1991). While traditionally applied to a firm's internal resources, the RBV framework can be strategically extended to the vendor selection process within EKEDC. By focusing on the capabilities possessed by potential vendors, EKEDC can leverage the theory to select partners who possess the specific resources necessary to ensure timely delivery. A core strength of RBV in this context lies in its emphasis on vendor capabilities (Carter et al., 2017). EKEDC can utilize this framework to prioritize vendors with strengths in efficient production processes. These vendors can consistently deliver materials and equipment within the designated timeframe, minimizing delays and disruptions for EKEDC's projects. Furthermore, RBV emphasizes the importance of robust quality management systems within a vendor's operations (Singh & Singh, 2017). Selecting vendors with such systems in place helps to minimize the risk of defects that necessitate rework or replacements, further contributing to timely project completion. Additionally, reliable logistics networks are another crucial vendor capability highlighted by RBV (Carter et al., 2017). Vendors with efficient and

dependable transportation and delivery infrastructure can ensure materials and equipment arrive on site when needed, preventing delays caused by logistical bottlenecks.

However, the RBV theory also presents limitations that require consideration for EKEDC. A primary concern lies in the potential conflict between acquiring the most capable vendors and cost-effectiveness (Jiao & Zhao, 2010). Vendors with the most efficient production processes, robust quality management systems, and reliable logistics networks might come at a premium price. Striking a balance between cost and capability during vendor selection becomes crucial for EKEDC. The optimal approach might involve a weighted scoring model that assigns higher weights to criteria directly impacting timely delivery, while still ensuring cost-effectiveness. Furthermore, the RBV framework emphasizes a firm's internal resources (Barney, 1991). While crucial, the external environment plays a significant role in project timelines. EKEDC needs to consider factors like market fluctuations and unforeseen disruptions during vendor selection (Vrijhoef & Narasimhan, 2001). For instance, sudden surges in demand for specific materials or disruptions in global supply chains can impact delivery timelines. While RBV does not explicitly address these external factors, EKEDC can mitigate their impact through effective risk management strategies and by incorporating scenario planning into the vendor selection process.

Transaction Cost Economics

Transaction Cost Economics (TCE), a theory developed by Coase (1937) and Williamson (1975), offers a distinct lens for EKEDC to examine vendor selection through the prism of cost minimization. In the context of ensuring timely project delivery, TCE emphasizes selecting vendors who not only minimize transaction costs but also prioritize on-time performance. A key strength of TCE lies in its focus on optimizing the procurement process itself (Kannan & Khalifa, 2017). By applying TCE principles, EKEDC can select vendors with efficient communication channels. This could involve readily available communication platforms, designated points of contact, and clear communication protocols. Streamlined communication minimizes delays caused by misunderstandings or information gaps, ensuring a smooth flow of information throughout the procurement process. Additionally, TCE emphasizes the importance of clear contractual agreements

(Williamson, 1985). Precisely defined terms of delivery, quality expectations, and dispute resolution mechanisms within the contract foster transparency and minimize the potential for misunderstandings or disagreements that could lead to delays. Furthermore, TCE advocates for streamlined order processing systems (Kannan & Khalifa, 2017). EKEDC can leverage technology to implement efficient order processing systems that minimize errors and expedite order fulfillment. This reduces the time it takes for materials and equipment to reach project sites, ultimately contributing to timely project completion.

However, a purely cost-centric approach advocated by TCE can also present limitations for EKEDC. An overemphasis on short-term cost reduction might come at the expense of building long-term relationships with vendors (Dyer & Singh, 1998). Trust and collaboration fostered through long-term partnerships can be crucial for consistent on-time delivery. Vendors invested in a long-term relationship with EKEDC are more likely to prioritize the utility's needs, going the extra mile to ensure timely deliveries (Carter et al., 2017). A purely transactional approach focusing solely on the lowest cost might overlook the value of these long-term partnerships. Furthermore, TCE's emphasis on rigid contracts can limit flexibility in dealing with unforeseen circumstances (Williamson, 1985). The Nigerian power sector, like many others, is susceptible to disruptions (Agbonga & Akintoye, 2017). Overreliance on inflexible contracts might hinder EKEDC's ability to adapt to these disruptions and ensure timely delivery. Finding a balance between safeguarding against delays through well-defined contracts and maintaining flexibility to navigate unforeseen circumstances becomes crucial for EKEDC.

In conclusion, TCE offers a valuable framework for EKEDC to optimize vendor selection by minimizing transaction costs and fostering a streamlined procurement process. However, its limitations highlight the importance of considering long-term vendor relationships and the need for flexibility within the dynamic Nigerian power sector. By acknowledging these strengths and weaknesses, EKEDC can leverage TCE principles to develop a cost-effective vendor selection strategy that prioritizes timely delivery without sacrificing the benefits of long-term partnerships and adaptability.

In conclusion, both RBV and TCE offer valuable frameworks for vendor selection in the context of EKEDC's need for timely project delivery. RBV offers a strategic approach by emphasizing vendor capabilities that directly contribute to faster delivery. TCE promotes cost-efficiency in vendor selection. By understanding the strengths and weaknesses of each theory, EKEDC can develop a comprehensive vendor selection strategy that prioritizes timely delivery while balancing cost-efficiency and building long-term partnerships with reliable vendors. This approach can ultimately contribute to improved service delivery for electricity customers in Nigeria.

2.3 Empirical Review

Carter et al. (2017) delves into the efficacy of various supplier selection practices in ensuring on-time deliveries. Their research, though not confined to the power sector, sheds light on how specific selection criteria can significantly enhance delivery performance. They highlight the importance of factors like supplier responsiveness, adherence to specifications, and the implementation of supplier development programs. These elements foster timely procurement by ensuring vendors are agile in communication, meet quality expectations, and are continuously improving their capabilities. The study suggests that a strategic approach to vendor selection, focusing on these criteria, can contribute significantly to improved delivery performance - a crucial element for organizations like EKEDC that rely on a dependable supply chain to complete projects efficiently.

Rahman et al. (2017) offer a comprehensive analysis of vendor selection criteria utilized across various sectors. Their review underscores the importance of a multifaceted evaluation encompassing quality, cost, delivery performance, and past performance data. For EKEDC, these factors are crucial considerations when selecting vendors who can consistently deliver materials and equipment on time. The study emphasizes that a holistic evaluation process that considers these diverse criteria can lead to more informed and effective vendor selection decisions. By prioritizing quality materials, cost-effectiveness, timely deliveries, and a proven track record of reliability, EKEDC can ensure it selects vendors who contribute to successful project completion within the designated timeframe.

Ahire and Sun (2018) investigate the complexities of supplier selection within a

global supply chain. While their research may not be entirely applicable to the Nigerian power sector, it provides valuable insights for EKEDC if it engages in international procurement. The review highlights the challenges of managing geographically dispersed vendors, emphasizing the need for a nuanced approach when selecting vendors located outside Nigeria. The study accentuates the necessity of risk management strategies to mitigate potential disruptions associated with a global supply chain. Additionally, supplier development programs can be instrumental in fostering collaboration and ensuring these geographically dispersed vendors prioritize timely deliveries for EKEDC's projects.

While not directly focused on vendor selection, Bodunrin's (2016) study offers valuable insights into the broader context of public procurement practices in Nigeria. The research reveals challenges such as multiple procurement guidelines, an overemphasis on manpower procurement, and the lack of centralized data sharing. These findings are significant for organizations like EKEDC, as they underscore the need for streamlined procurement processes. Implementing clear and concise procurement guidelines, along with professional training for procurement officials, can enhance efficiency and ultimately contribute to timely delivery of materials and equipment.

Musa et al. (2023) explore the adoption of e-procurement in the Nigerian public sector. Their study, based on the technology acceptance model, identifies perceived usefulness, security, and trust as key predictors of e-procurement adoption. While ease of use might negatively impact adoption intentions initially, the overall benefits of e-procurement should be emphasized. A robust e-procurement system can streamline vendor selection processes, improve communication and data sharing, and ultimately contribute to timely delivery of materials and equipment, enhancing overall project efficiency for organizations like EKEDC.

By drawing insights from these diverse empirical studies, EKEDC can develop a comprehensive vendor selection strategy that prioritizes timely delivery. These studies highlight the importance of strategic selection criteria, multifaceted vendor evaluation, risk management strategies for international procurement, streamlined procurement processes, and the potential benefits of e-procurement in optimizing vendor selection for timely project completion.

3.0 Research methods

In attainment of the objective of this study, a descriptive survey design was adopted. The desire for the adoption of this design was because it provides framework for quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population (Creswell & Creswell, 2018; Wilson, 2014). The study adopted a structured questionnaire cum double sampling techniques consisted of judgmental and convenience. For judgmental, the expertise of the selected participants was crucial while convenience sampling considered the availability, preparedness and accessibility of the participants. The research conveniently distributed the data gathering instrument which produced one hundred and twenty-eight (128) copies of retrieved questionnaire useful for data analysis.

Regarding the correctness of the survey instrument, congruent, logical, and criterion-related types of validity were adopted. While the congruent (construct) validity was carried out through variables explained from past literature, the logical (content) validity was employed via administration and distribution of the chosen and decided survey instrument to my supervisors, selected Eko electricity distribution companies' key officers, and academia in the project management. Having distributed the research instrument, experts thoroughly examined it, came up with logical and reasonable suggestions, and thus gave advice that assisted in designing a questionnaire that accurately measured the variables. For criterion-related validity, research instrument was further scrutinised to ensure the appropriateness of the survey instrument. A Cronbach alpha (α) value was calculated for each of the dimensions to confirm their reliability. The results for all the constructs exceeded 0.7 values. This further indicated the reliability of the research instrument. These results statistically infer that the scale is valid for measuring vendor selection and project delivery time in Eko electricity distribution companies in Lagos State. The study statistical interference was Multiple regression for the analysis.

4. Results and Discussion of Findings

4.1. Descriptive Analysis of Participants Responses

Table 1: Participants' Bio-Data Information

Variable	Response Label	Frequency	Percentages (%)
Gender	Male	104	81.3
	Female	24	18.7
Age	18 but less than 30	08	6.3
	30 but less than 40	52	40.6
	40 but less than 50	24	18.8
	50 but less than 60	44	34.3
Educational Qualification	BSc/HND	64	50.0
	Master's Degree	24	18.8
	Doctorate	04	3.1
	Professional certificate	08	6.3
	Others	28	21.9
Annual Income	Less than 500,000	08	6.3
	500,000 but less than 1,000,000	32	25.0
	1,000,000 but less than 5,000,000	64	50.0
	5,000,000 but less than 10,000,000	20	15.6
	10,000,000 & above	04	3.1
Years of experience	Less than 5 years	20	15.6
	5 years but less than 10 years	52	40.6
	10 years but less than 15 years	56	43.8
Position	Operation manager	28	21.8
	Project manager	37	29.0
	supervisor	44	34.4
	Others	19	14.8

Source: *field survey (2024)*

The data presented in Table 1 provides insights into various demographic variables. These statistics offer a sight into the configuration of the surveyed population, allowing for valuable observations and implications. The gender distribution reveals it is highly skewed towards males, constituting 81.3 percent of the sample compared to 18.7 percent of females. This gender disparity might influence perspectives on various aspects, potentially affecting responses and attitudes towards the survey's subject matter. Regarding age demographics, the data illustrates high percentages with regard to those aged 30 but less than 40 years and 50 years but less than 60 years with 40.6 percent and 34.3 percent respectively. It was followed by those aged 40 but less than 50 amounted to 18.8 percent while a 6.3 percent was accounted for those aged 18 but less than 30 years. The responses from the participants are indications of the maturity encompassing their opinions regarding the subject matter. Educational qualifications showcase a notable distribution, with the majority (50 percent) holding a BSc/HND. This high percentage suggests a well-educated sample population, potentially indicating a higher level of expertise among respondents. Moreover, the data indicating a substantial proportion of respondents earning between 1 million and 10 million annually (90.6 percent) intersects with considerations of their project delivery time. This middle-income bracket dominance within the surveyed population might suggest varying capacities for project delivery time and investment opportunities. With respect to

respondents' experience, none was less than 5 years experienced. This is an indication that majority of the respondents have ideas of the subject of interest. Respondents, in line with positions in the organisation were taken by the supervisors (34.4 percent), project manager (29 percent), operation manager (21.8 percent), and others (14.8 percent).

4.2. Descriptive Analysis of Research Variables

Table 2: Vendor Selection Criteria

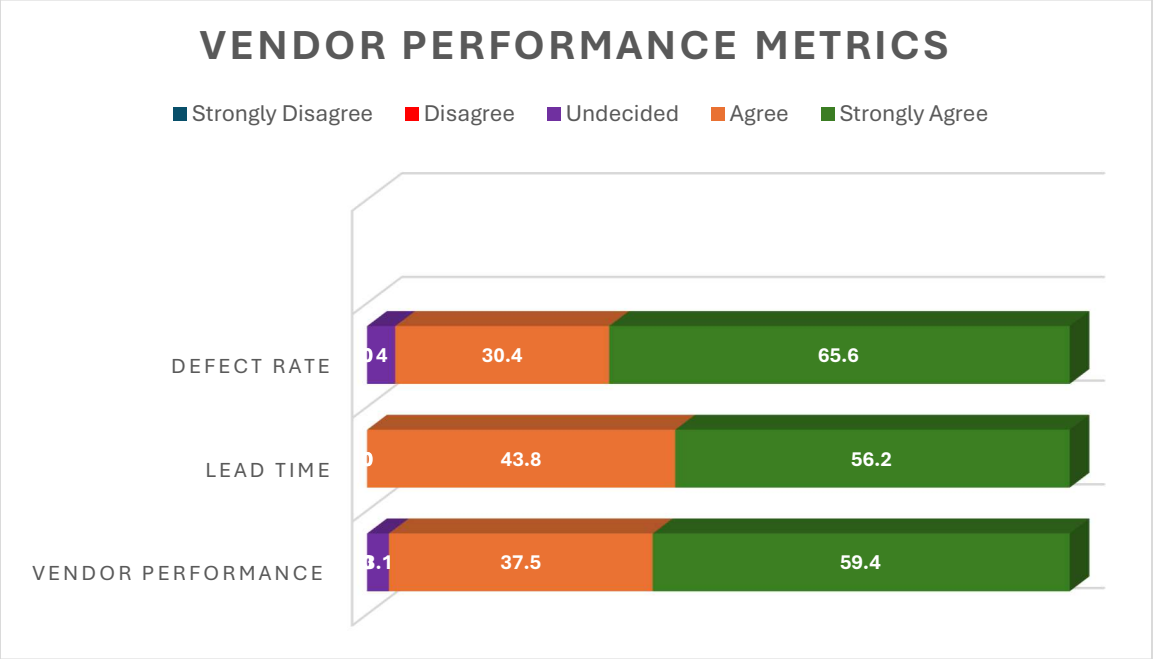
Variables	Scale Level					Mean	Std Dev.
	SD	D	U	A	SA		
	1	2	3	4	5		
My organisation considers customers' expectation as priority in terms of quality, reliability, and delivery of electricity (vendor performance)	0.0	0.0	3.1	37.5	59.4	4.56	0.558
My organisation takes placement of order and delivery period as important as possible to avoid discontinuity from our customers (Lead time)	0.0	0.0	0.0	43.8	56.2	4.56	0.498
My organisation takes cognisant of defective materials (such as cable wires and the likes) to ensure product quality to our customers (Defect rate)	0.0	0.0	4.0	30.4	65.6	4.66	0.477

Source: Researcher's Computations, 2024

In Table 2 (Fig. 1), the vendor selection survey items for which data were gathered from the entire participants were *vendor performance, lead time, and defect rate.* The participants reacted to the numerous items, wherein no percent expressed their disagreement in terms of *vendor performance* 3.1 percent indifferent, and 96.9 percent indicated their agreement. For *lead time*, while none of the participants expressed any discountenance towards this item, a 100 percent supported. For *defect rate,* while only 4.0 percent expressed their indifference, 65.6 percent expressed their agreement. The mean and standard deviation scores supported the outcomes for all the items surveyed. This implies that participants' judgments towards the survey items were normally distributed and centered around the mean. The result of the descriptive statistics on vendor selection clearly show that all the metrics have similar judgments about all the subject matter in the distribution of the participants' judgments.

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Figure 1: The graphical model explains the vendor performance metrics among Eko distribution companies in Lagos State



Source: *Researcher's Computations (2024)*

Table 3: Criteria for Project Delivery Time

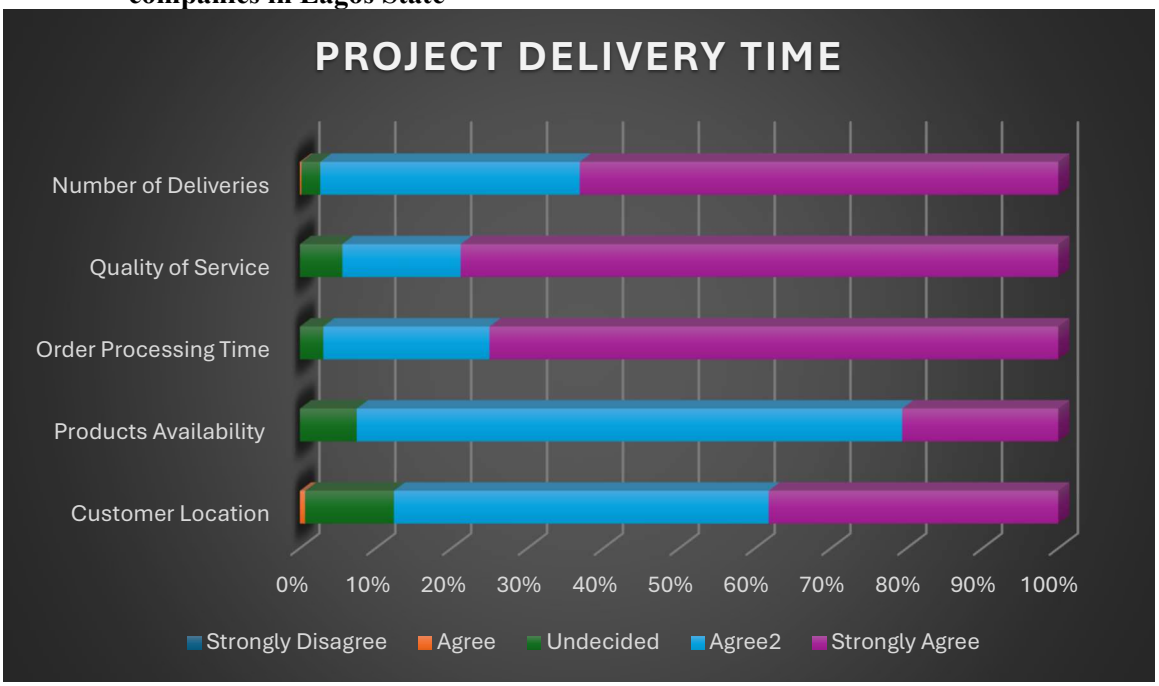
Variables	Scale Level					Mean	Std Dev.
	SD	D	U	A	SA		
	1	2	3	4	5		
Our location to delivering utmost service to our customers is made specific – related in a bid to provide quality services (customer location)	0.0	0.7	11.7	49.4	38.2	4.31	0.465
Our services, as Eko distribution company, are made available to our customers always for them to be able make informed decisions (products availability)	0.0	0.0	7.5	71.9	20.6	4.28	0.451
Our order delivery time in terms of electricity delivery to our customer has always been made much easier (order processing time)	0.0	0.0	3.1	21.9	75.0	4.72	0.516
My organisation applies technologies to avoid traffic in electricity distribution and ensures networks enhancement (quality of service)	0.0	0.0	5.6	15.6	78.8	4.84	0.365
Eko electricity company provides telephone numbers that customers can call into for possible complaints to endure service efficiency (number of deliveries)	0.0	0.2	2.5	34.2	63.1	4.82	0.231

Source: Researcher's Computations, 2024

In Table 3 (Fig. 2), the project delivery time survey items for which data were gathered from the entire participants were *customer location, products availability, order processing time, quality of service, and number of deliveries.* The participants reacted to the numerous items, wherein 0.7 percent expressed their disagreement in terms

of *customer location,* 11.7 percent indifferent, and 87.6 percent indicated their agreement. For *products availability*, while none of the participants expressed their opinion by not supporting this item, 7.5 percent were undecided with it. Then, 92.5 percent supported. As for *order processing time*, while 3.1 percent were indecisive, 96.9 percent agreed. For *quality of service,* while 5.6 percent undecided, 94.4 percent expressed their agreement. For *number of deliveries*, while 2.5 percent agreed, 97.5 percent indifferent. The mean and standard deviation scores supported the outcomes for all the items surveyed. This implies that participants' judgments towards the survey items were normally distributed and centered around the mean. The result of the descriptive statistics on project delivery time clearly show that all the metrics have similar judgments about all the subject matter in the distribution of the participants' judgments.

Figure 2: The graphical model explains the project delivery time metrics among Eko distribution companies in Lagos State



Source: *Researcher's Computations (2024)*

Test of Hypotheses

H_{o1}: Vendor selection (vendor performance, lead time and defect rate) has no effect on project delivery time among selected Eko electricity distribution companies in Lagos State

Table 4: Multiple Regression Results for Vendor Selection vs. Project Delivery Time

Model Summary									
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	.800[a]	.640	.635	2.52119	.640	119.154	4	268	.000

a. Predictors: (Constant), Vendor Performance, Lead Time, Defect Rate
b. Dependent Variable: Project Delivery Time

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3029.551	4	757.388	119.154	.000[b]
	Residual	1703.511	268	6.356		
	Total	4733.062	272			

a. Dependent Variable: Project Delivery Time

a. Predictors: (Constant), Vendor Performance, Lead Time, Defect Rate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.777	.667		2.666	.008	.465	3.089
	Vendor performance	.539	.061	.412	8.818	.000	.419	.659
	Lead time	.117	.086	.089	1.366	.173	-.052	.285
	Defect rate	.043	.063	-.032	-.667	.499	-.167	.082
	a. Dependent Variable: Project Delivery Time							

Source: *Researchers' computations, 2024*

The multiple regression analysis conducted aimed to investigate the effect of vendor selection (comprising vendor performance, lead time, and defect rate) on project delivery time among Eko electricity distribution companies in Lagos State. The model summary indicates a substantial relationship between the predictors (vendor performance, lead time, and defect rate) and the response variable, project delivery time ($R = .800$, $R^2 = .640$, *Adjusted* $R^2 = .635$). This result suggests that 63.5 percent of the variance in project delivery time can be explained by the combined influence of these vendor selection metrics. The ANOVA results further support the significance of the regression model, with a highly significant F-statistic ($F = 119.154$, $p < .05$). The regression analysis indicates that the combined effect of vendor performance, lead time, and defect rate significantly predicts project delivery time among Eko electricity distribution companies in Lagos State. Upon examining the coefficients in Table 4, it is evident that vendor performance ($\beta = .539$, $p < .05$) contributed the most to the change in the response variable. Vendor performance contributed statistically significant relationships with project delivery time; while lead time ($\beta = .117$, $p < .05$), and defect

rate ($\beta=.043$, $p<.05$) contributed statistically insignificant with project delivery time. The findings regarding vendor performance, lead time and defect rate with respect to project delivery time aligned with earlier studies of Gitonga and Kihara (20216); Norrizadeh et al. (2019); and Villazon et al. (2020); who noted that if organisations will ensure good lead time management with conducive environments for economic growth, it will result in higher productivity in investment.

5.0 Conclusion, Recommendations, and Contribution to Knowledge

The relationship between choosing a vendor and the time it takes to complete a project at Eko Electricity Company shows a strong connection that impacts the overall efficiency and effectiveness of project implementation. Thorough vendor selection techniques that consider aspects such as vendor performance, lead time, and defect rate are crucial for assuring the timely delivery of projects. Efficient vendor management plays a crucial role in minimising delays, cutting costs, and improving the quality of deliverables. This, in turn, helps Eko Electricity Company achieve its strategic goals. The study highlights the significance of a well-organized and thorough vendor selection process as a crucial factor in attaining prompt and successful project results.

On recommendations for the study, rigorous vendor evaluation processes should be carried out that will help in selecting vendors that are capable of delivering high-quality services within stipulated timelines. However, utilizing advanced management software to streamline the vendor selection process, monitoring performance, and maintaining real-time communication should help enhance transparency, improve decision-making, and promoting efficient management of vendor- related activities. Eko electricity distribution company should design a legal framework that hold vendors accountable and incentivises timely delivery by establishing clear contractual agreement. Lastly, it is important for Eko electricity distribution company to create a contingency plan to address potential disruptions caused by vendor issues in a bid to ensure project continuity

On recommendations for the research, it is important to conduct thorough vendor evaluation processes to ensure the selection of vendors who can provide excellent services within the specified timeframes. By

employing sophisticated management software, Eko electricity distribution company may simplify the process of selecting vendors, monitor their performance, and maintain instant communication; which will however lead to transparency, improved decision-making, and efficient management of vendor-related tasks. Eko Electricity Distribution Company should build a legislative framework that ensures vendors are held responsible and encourages them to deliver on time by creating explicit contractual agreements. Finally, it is crucial for Eko energy distribution firm to develop a contingency plan to deal with potential disruptions caused by vendor problems in order to assure the uninterrupted progress of the project.

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