# E-COMMERCE AND ORGANIZATIONAL PERFORMANCE IN SERVICE DELIVERY FIRMS

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## Abstract

Despite the potential benefits of e-commerce adoption in service delivery firms, there remains a gap in understanding its impact on firms' performance within the context of Cross River State. This knowledge gap poses challenges for policymakers, business leaders, and stakeholders seeking to leverage e-commerce for enhanced service delivery and improved business outcomes. This study examined the effect of e-commerce adoption on organizational performance in service delivery firms, with a focus on GIG Logistics Company, Calabar, Cross River State, Nigeria. The specific objective was to establish the impact of e-commerce vendors, payment gateway platforms, and web portals on organizational performance. The population of the study was 50 employees of GIG Logistics, with a sample size of 45 determined using Cochran's formula. A 21- item structured questionnaire served as the primary data collection tool, and the data was analysed using simple percentages and the chi-square to test the hypotheses on the impact of e-commerce on organizational performance. The findings revealed that e-commerce vendors significantly enhance GIG Logistics operational performance. Payment gateway platforms also play a vital role in improving organizational performance by reducing transaction times, enhancing cash flow, and ensuring secure payment options. It was recommended that service delivery firms should prioritize on continuous training of employees on e-commerce platform usage, customer behaviour, and data-driven decision-making to enhance operational efficiency and improve the customer experience.

*Keywords*: E-commerce vendors, payment gateway platforms, web portals

## Introduction

Electronic commerce in recent times has been significantly impacted by advances in information technology (IT) (Melović et al., 2020). Studies by Chege et al. (2019) and Sofyani et al. (2020) have demonstrated that information technology can improve business performance by increasing communications within and outside of an organisation. Information sharing across several organisations can unquestionably help them manage their production, inventory, and distribution more effectively. Alsheyadi (2020) examined two important issues pertaining to e-business. IT-enabled collaboration advantages and e-business service capabilities are used to measure the success of e-business at the firm level. The survey by Alsheyadi (2020) looks into whether a company's success in e-business overall, which benefits organisational performance, is favourably connected with its capacity to develop and implement integrated e-business systems. The findings suggests that a company's capacity to implement e-business is essential to e-business success (Alsheyadi, 2020). Furthermore, they discovered that the IT-enabled collaborative advantage still has a significantly bigger and more significant influence on firms' performance. Vuković et al. (2023) presented a hybrid method for assessing the return on e-business investments in high-tech manufacturing.

In recent years, the service delivery sector has been particularly quick to recognize the potential of e-commerce in enhancing customer experience, optimizing operational processes, and ultimately

improving overall performance (Gupta et al., 2023). As emphasised by Hassan et al. (2024), across industries such as hospitality, healthcare, transportation, education, and professional services, service delivery firms are increasingly turning to e-commerce solutions as a strategic means of staying competitive and meeting the evolving needs and expectations of their clients.

In Cross River State, Nigeria, this trend towards e-commerce adoption within the service delivery sector is evident. As businesses navigate the dynamic and competitive market environment, they are increasingly leveraging e-commerce technologies to innovate their service offerings, expand their reach, and improve their market positioning. From online booking platforms for hospitality services to telemedicine solutions in healthcare, Cross River State service delivery firms are gradually exploring e-commerce avenues to drive growth and success in an ever-evolving digital landscape. Hence, this study bridges the research gap by examining the extent of effect of e-commerce adoptions by exploring the dimensions of (e-commerce vendors, payment gateway platforms and web portal) on organizational performance in GIG logistics Company, Calabar, Cross River State, Nigeria.

Despite the potential benefits of e-commerce adoption in service delivery firms, there remains a gap in understanding its impact on firms' performance within the context of Cross River State. This knowledge gap poses challenges for policymakers, business leaders, and stakeholders seeking to leverage e-commerce for enhanced service delivery and improved business outcomes. Therefore, there is a need for empirical research to explore the effect of e-commerce adoptions on organisational performance in service delivery firms within the specific context of Cross River State. The aim of this study was to investigate the effect of e-commerce adoptions on organisational performance in GIG logistics Company, Calabar, Cross River State, Nigeria. The specific objectives of this study were as follows; to establish the impact of e-commerce vendors on organisational performance; to examine the effect of payment gateway platform on organisational performance and to investigate the effect of web portal on organisational performance. To achieve these objectives, the following research questions were developed for the study; to what extent does e-commerce vendors affect organisational performance; to what extent does payment gateway platforms affect organisational performance and to what extent does web portal affect organisational performance?

## Literature Review

### *Theoretical Framework*

### *Technology Acceptance Model (TAM)*

The Technology Acceptance Model (TAM), introduced by Davis in 1989, is a widely utilized framework that seeks to understand and predict the adoption of technology by users (Zaineldeen et al., 2020). According to Toros et al. (2024), TAM posits that two main factors-perceived ease of use and perceived usefulness-determine an individual's attitude toward using a new technology, which subsequently affects their intention to use it. Chen and Aklikokou (2019) states that perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort, while Caffaro et al. (2020) posits that perceived usefulness is the degree to which a person believes that using the system would enhance their job performance.

In the context of e-commerce adoption in service delivery firms, as described by Hassen et al. (2021), TAM provides a valuable lens for understanding how these firms evaluate and integrate e-commerce solutions. For instance, if a service delivery firm perceives an e-commerce platform as user-friendly and believes it will improve operational efficiency and customer satisfaction, it is more likely to adopt and utilize the technology (Sayem et al., 2024).

### *Resource-Based View (RBV)*

The Resource-Based View (RBV) theory, articulated by Barney in 1991, asserts that an organization's resources and capabilities are critical to achieving and sustaining a competitive advantage (Pereira & Bamel, 2021). According to RBV, resources that are valuable, rare, inimitable, and non-substitutable (VRIN) enable firms to develop unique competencies that differentiate them from competitors

(Parboteeah & Zakaria, 2023). In the realm of e-commerce, the adoption and effective utilization of advanced digital technologies can be considered strategic resources that significantly enhance an organization's operational and competitive capabilities (Yang et al., 2022).

As described by Zhang et al. (2020), for service delivery firms, e-commerce technologies can transform traditional business processes, improve service delivery, and expand market reach. By leveraging e-commerce platforms, firms can streamline their operations, reduce costs, and enhance customer engagement through personalized services and real-time interaction (Lande et al., 2024). The ability, as stated by Hu et al. (2020), to integrate e-commerce seamlessly into business operations can become a distinctive capability, providing a competitive edge in the market. Therefore, RBV highlights the strategic importance of investing in and developing robust e-commerce systems that align with the firm's overall resources and capabilities, ultimately driving improved organizational performance and sustained competitive advantage (Elia et al., 2021).

***The concept of E-commerce***

Electronic commerce is the term used to describe e-commerce. It refers to the use of the internet and electronic media for commerce in products and services (Alrumiah & Hadwan, 2021). In order to engage in e-commerce, a business must have access to both the internet and IT, including electronic data interchange (EDI). As described by Lam et al. (2021), e-commerce is trading goods or services with customers directly through an online vendor's website. To accept payments by credit card, debit card, or electronic fund transfer (EFT), the gateway employs a wireless buy cart or purchase basket (Semerádová & Weinlich, 2022). Further, Ocloo et al. (2020) posits that business-to-business (B2B) e-commerce is expanding quickly in the worldwide corporate sector due to the growing use of ICTs, particularly the Internet.

***Effect of E-commerce Vendors on Performance***

E-commerce vendors play a crucial role in the digital ecosystem by providing the necessary platforms, tools, and services that facilitate online transactions and interactions.

One of the most significant advantages of engaging with e-commerce vendors is the expanded market reach they offer. According to Friederici et al. (2020), businesses that leverage e-commerce vendors can tap into a broader customer base, transcending geographical limitations. This increased accessibility often leads to higher sales growth, as organizations can attract and serve customers from different regions more effectively. Studies (Friederici et al. (2020); Thaichon et al. (2018) have shown that companies utilizing e-commerce platforms report notable improvements in sales performance compared to those relying solely on traditional channels.

Accordding to Joseph (2023), e-commerce vendors provide platforms that streamline various business processes, leading to enhanced operational efficiency.

***Effects of Payment Gateway Platforms on Performance***

Payment gateway platforms, as described by Dutta et al. (2024), are essential for processing online transactions securely and efficiently. These platforms serve as the technological backbone for e-commerce transactions, ensuring that payments made by customers are authenticated and processed in real-time. The security features of payment gateways, such as encryption and fraud detection, foster trust and reliability in online transactions, which are critical for customer retention and satisfaction (Wang et al., 2021). Research by Moghavvemi et al. (2021) indicates that robust payment gateway platforms contribute to reduced transaction times, lower costs, and enhanced customer experience.

The efficiency of payment gateways can significantly affect an organization's financial performance by streamlining cash flow and reducing the risk of chargebacks and payment fraud (ALGhamdi et al., 2022).

***Effect of Web Portals on Performance***

Web portals, as described by Bournaris (2020), serve as the central interface through which customers interact with an organization's online services. An effective web portal is user-friendly, secure, and capable of providing comprehensive information and services to users (Olanrewaju et al., 2021). Saoula et al. (2023) purports that the design, functionality, and accessibility of web portals are critical factors that influence customer retention and engagement. Beaird et al. (2020) states that a well-designed web portal with intuitive navigation, responsive design, and fast loading times ensures a positive user experience, which is crucial for retaining customers and encouraging repeat business.

As stated by Langenwalter (2020), organizations that invest in high-quality web portals often see improved operational efficiency as these portals integrate various business processes, such as customer service, order management, and inventory tracking.

***Concept of Organisational Performance***

Organizational performance, according to Nerstad et al. (2017), depends on leaders' mastery to create a cooperative working climate and on their ability to lead a team. Effective results, as described by Brundiers and Wiek (2017), require emotional engagement and empathy from participants in terms of activities performed within a team in order to provide solutions to issues that need to be resolved as professionally as possible. Organizational performance refers to the degree to which the organization, with some informational, financial, and human resources, positions itself effectively on the business market (Almatrooshi et al. (2016). Individual performance, as asserted by Shin and Konrad (2016), can influence the performance of the entire organization in the short, medium or long term in a positive or negative direction.

***Empirical Reviews***

A study by Kim et al. (2016) titled "E-commerce Adoption and Performance in Small and Medium-sized Enterprises: A Comparative Study" explored how e-commerce vendors affect the performance of small and medium-sized enterprises (SMEs). The study utilized a survey methodology with a sample size of 300 SMEs across various sectors. The findings indicated that SMEs leveraging e-commerce vendors experienced a significant increase in market reach, customer base, and sales performance.

Similarly, in "The Role of E-commerce Vendors in Enhancing Organizational Performance" by Li and Chen (2017), the researchers examined a sample of 250 service delivery firms. They employed a mixed-methods approach, combining quantitative surveys with qualitative interviews. The study found that firms with robust e-commerce vendor partnerships reported improved operational efficiency and customer service.

Turban et al. (2017) in their work "Payment Gateway Platforms and Organizational Efficiency" analyzed the effects of payment gateways on organizational performance. The study surveyed 200 companies in the retail and service sectors. The findings revealed that firms using advanced payment gateway platforms experienced lower transaction costs, faster payment processing times, and higher customer satisfaction rates.

Further, a comprehensive study by Zhang et al. (2021) titled "E-commerce Integration and Organizational Performance: An Empirical Analysis" assessed the combined effects of e-commerce vendors, payment gateways, and web portals on organizational performance. The study involved a sample size of 300 firms across different sectors and used a longitudinal approach to track performance changes over three years. The findings demonstrated that firms adopting a holistic e-commerce strategy, integrating all three components, reported the highest improvements in performance. The following null research hypotheses were therefore developed for the study:

$Ho_1$: E-commerce vendors do not have any significant effect on organisational performance

$Ho_2$: Payment gateway platforms do not have any significant effect on organisational performance

$Ho_3$: Web portal does not have any significant effect on organisational performance

## Methodology

***Research design***

The study adopted a descriptive survey design, a widely recognized and utilized approach in social science research. In this case, the focus is on the adoption of e-commerce and its impact on organizational performance in GIG Logistics Company.

***Study area***

The research was carried out in Calabar, the administrative centre of Cross River State, Nigeria. Calabar. GIG Logistics Company operates widely throughout Calabar, exploiting the city's robust infrastructure and connectivity to deliver services efficiently.

***Population of the Study***

The population of the study consisted of all employees of GIG Logistics Company in Calabar, Cross River State, totalling 50 individuals. This comprehensive group included managerial staff, technical staff, and support staff, all of whom played crucial roles in the company's operations.

***Sample design and sample size determination***

The study employed a stratified random sampling technique to select a representative sample from the population of employees at GIG Logistics Company in Calabar, Cross River State. This method ensured that different subgroups within the organization, such as departments and roles, were proportionately represented in the sample. Cochran's formula for finite population, which is given by

$$n_0 = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

was used to determine the sample size, where:

Where:

- $n_0$ is the initial sample size from Cochran's formula.
- $N$ is the total population size (which is 50 in this case).

Given that:

- $Z$=1.96 (for a 95% confidence level),
- $p$ =0.5 (maximum variability),
- $e$ =0.05 (margin of error),
- $N$ =50 (total population size),

The adjusted sample size calculated is 45.

The procedure for sampling involved first categorizing the population into strata based on their department and role within the company, such as managerial, technical, and support staff. Within each stratum, employees were randomly selected to ensure that each subgroup was proportionately represented according to its size in the overall population. This stratified approach ensured that diverse perspectives on the adoption of e-commerce components and their impact on organizational performance across various functional areas within the company were captured.

## Data Analysis

The data obtained from this study was subjected to statistical treatment. The chi-square test was employed to test the hypotheses regarding the effect of e-commerce adoptions on organizational performance at GIG Logistics Company. The formula for the chi-square test is:

$$X^2 = \varepsilon \frac{(0_i - E_I)^2}{E_i}$$

where $O_i$ represents the observed frequencies and $E_i$ represents the expected frequencies.

### 4.1 Test of Hypotheses

***Hypothesis One***

**$H_0$**: E-commerce vendors do not significantly affect organizational performance.

**$H_1$**: E-commerce vendors significantly affect organizational performance.

From the chi-square formula as stated above:

***Decision rule***

If the calculated value of $X^2$ is greater than the critical value, we reject the null hypothesis and accept the alternative hypothesis. However, if the calculated $X^2$ value is less than the critical value, we accept the null hypothesis and reject the alternative hypothesis.

**TABLE 4.1**

| Variables | $X^2$ | df | Cal Value | Critical Value | Level of Sig. |
|---|---|---|---|---|---|
| E-commerce platforms have helped improve job performance<br>The adoption of e-commerce affected the overall performance | 46.9 | 3 | 46.9 | 7.815 | 0.05 |

Source: Field Survey, 2024.

***Decision:***

The calculated Chi-Square value of 46.9 exceeds the critical value of 7.815 at the 0.05 significance level. This indicates a statistically significant difference between the observed and expected frequencies. Therefore, we reject the null hypothesis ($H_0$) and accept the alternative hypothesis ($H_1$). This suggests that e-commerce vendors significantly affect organizational performance.

***Hypothesis two***

$H_0$: Payment gateway platforms do not significantly affect organizational performance.

$H_1$: Payment gateway platforms significantly affect organizational performance.

**TABLE 4.2**

| Variables | $X^2$ | df | Cal Value | Critical Value | Level of Sig. |
|---|---|---|---|---|---|
| The payment gateway platforms used by GIG Logistics are considered very reliable<br>Payment gateway platforms have contributed to the financial performance of GIG Logistics | 105.78 | 3 | 105.78 | 7.81 | 0.05 |

Source: Field Survey, 2024

***Decision:***

Given the chi-square calculated value of 105.78 exceeds the critical value of 7.81 at a 0.05 significance level, we reject the null hypothesis ($H_0$). This indicates that payment gateway platforms significantly affect organizational performance at GIG Logistics. The strong association between the reliability of payment gateway platforms and their impact on financial performance supports the alternative hypothesis ($H_1$), affirming that payment gateway platforms play a crucial role in enhancing organizational outcomes.

***Hypothesis three***

$H_0$: Web portal usage does not significantly affect organizational performance.

$H_1$: Web portal usage significantly affects organizational performance.

**TABLE 4.3**

| Variables | $X^2$ | df | Cal Value | Critical Value | Level of Sig. |
|---|---|---|---|---|---|
| The e-commerce platform in managing customer feedback and complaints is considered effective | 24.276 | 3 | 24.276 | 7.81 | 0.05 |
| There has been a high level of satisfaction with the speed of service delivery since the adoption of e-commerce platforms. | 11.0397 | | 11.0397 | | |

Source: Feld Survey, 2024.

***Decision:***

Based on the Chi-square test results, we reject the null hypothesis ($H_0$) for both variables. For the effectiveness of the e-commerce platform in managing customer feedback and complaints, the calculated Chi-square value of 24.276 exceeds the critical value of 7.81, indicating a significant effect. Similarly, for satisfaction with the speed of service delivery, the calculated Chi-square value of 11.0397 is also greater than the critical value, suggesting a significant impact. Thus, web portal usage significantly affects organizational performance.

**Discussion of Findings**

The survey achieved a 100 percent response rate, with all 45 copies of questionnaires successfully retrieved and analyzed, ensuring thorough data collection within the GIG Logistics workforce. The study revealed that e-commerce vendors have a notably positive effect on the organizational performance of GIG Logistics. A large majority of respondents agree that these vendors significantly influence the company's operational outcomes, supporting the findings of Rosário and Raimundo (2021). They argue that e-commerce vendors help businesses access broader markets and boost sales. The integration of e-commerce tools improves market reach and operational efficiency, aligning with the work of Dhanalakshmi et al. (2020) and Mohdhar & Shaalan (2021). These scholars highlight that e-commerce integrations streamline sales processes, enhance functionalities such as inventory and customer relationship management, lower operational costs, and improve service delivery standards.

The positive peception of e-commerce technologies at GIG Logistics confirms the significant contribution of these vendors to operational efficiency. Most respondents believe e-commerce vendors play a crucial role in improving the company's performance, reinforcing the argument that e-commerce solutions not only expand market reach but also integrate various operational aspects for a more efficient business model.

The study also emphasizes the critical role of payment gateway platforms in enhancing GIG Logistics' financial performance and customer satisfaction. The effectiveness of these payment gateways is significantly linked to financial outcomes, aligning with Dutta et al. (2024).

**Summary of Findings**

Based on the analyzed data, below were the summary of findings:

E-commerce vendors significantly enhance GIG Logistics' operational performance by improving market reach, streamlining sales processes, and integrating various operational aspects, leading to increased efficiency and effectiveness.

Payment gateways play a critical role in boosting GIG Logistics' financial performance and customer satisfaction by reducing transaction times, improving cash flow, and providing secure, multi-option payment processing.

Web portals significantly enhance customer engagement and operational efficiency at GIG Logistics through user-friendly interfaces and comprehensive service access, which contribute to improved customer satisfaction and streamlined business operations.

## Conclusion and Recommendations

The adoption of e-commerce has proven to be a significant asset for GIG Logistics, bringing noteworthy improvements in operational efficiency and customer satisfaction. The positive impact highlighted in the study underscores the value of integrating advanced e-commerce technologies and fostering a skilled workforce adept at leveraging these tools. Based on the findings, the following recommendations were made:

1. Service delivery firms and similar organizations should prioritize on continuous training of employees on e-commerce platform usage, customer behaviour, and data-driven decision-making to enhance operational efficiency and improve the customer experience.
2. Investment in technologies like AI-driven chatbots, machine learning for predictive analytics, and robust cybersecurity measures should be considered high priority in order to streamline operations, boost customer engagement, and gain a competitive edge.
3. Manager of organizations should build and maintain strong relationships with e-commerce vendors, monitor market trends and consumer behavior, and establish a feedback loop to refine strategies, improve service delivery, and stay competitive

***Contribution to Knowledge***

Several studies on the impact of e-commerce on organizational performance has been explored using different dimensions of e-commerce in different sectors of the economy. But in-depth concentration has not been given to service delivery firms like the logistic firms. Hence, this study contributes to the existing body of knowledge by exploring the extent of effect of e-commerce adoptions with proxies as (e-commerce vendors, payment gateway platforms and web portal) on organizational performance in service delivery firms in Calabar, Cross River State with focus on GIG Logistic Company Limited.

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