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E-COMMERCE AND RETAIL BUSINESS PERFORMANCE IN WUKARI

By

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Abstract

This study examines the impact of e-commerce on retail business performance, focusing on trust and security, logistics and delivery systems, and consumer behaviour trends in selected retail stores in Wukari Metropolis. Using primary data from 208 respondents and regression analysis, the findings reveal that trust and security significantly influence consumer purchase decisions, logistics efficiency enhances customer satisfaction, and evolving consumer behaviour trends shape e-commerce success. The study concludes that adopting e-commerce strategies improves retail performance and recommends investments in cybersecurity, logistics infrastructure, and digital marketing. This research contributes to knowledge by providing empirical insights into the role of e-commerce in modern retail business.

Keyword: *E-commerce, Retail, Business, Performance, Trusts, Delivery-systems, Consumer.*

1.1 Background of the study

E-commerce or electronic business refers to buying and selling of goods and services over the internet. It has revolutionized retail and business practices by providing a platform for transactions beyond traditional physical stores. With the proliferation of digital technologies, e-commerce has become a significant component of the global economy. In recent years, e-commerce has experienced exponential growth, driven by advancements in technology, increasing internet penetration, and changing consumer behaviors. The convenience of online shopping, along with innovations in payment systems and logistics, has contributed to this rapid expansion. According to the industry reports, global e-commerce sales have surged, indicating a shift in how consumers prefer to shop. Salisu Bashir (2014). Despite its growth, e-commerce faces several challenges such as cyber security threats, logistical inefficiencies, and intense market competition which present hurdles for businesses. Additionally, maintaining customer trust and ensuring a seamless user experience are critical for sustaining success. On the other hand, e-commerce also offers opportunities for innovation and expansion, particularly in areas like mobile commerce and personalized marketing.

Firstly, it is believed that the increased business reach and accessibility can be seen as one that benefits customers, however this visibility is inadequate. Secondly is the improved operational efficiency of retail businesses to benefit and contribute to business growth in Wukari, appears low. In order to enhance customer experience, access to new markets and customers, increased competitiveness, lies in efforts put on ground to create viability of e-commerce and retail businesses by stakeholder for better performance.

Again, many retail businesses in Wukari have been hesitant to adopt e-commerce due to various challenges, including: Limited internet penetration and connectivity issues, Inadequate infrastructure and logistical challenges, Cultural and societal factors, Limited digital literacy and skills and lastly, Security concerns and trust issues. These challenges have reduced the e-commerce adoption and reduced retail business expansion.

1.2 Statement of the problem

Despite the global rise of e-commerce and its potential to enhance retail business performance in Wukari, there are significant challenges hindering the effective integration of e-commerce adoption into retail businesses, causing low internet penetration, inadequate infrastructure, limited access to online platforms, and a lack of digital skills among retailers. these constraints inhibits their ability to compete in an increasingly digital marketplace. Consumers exhibit skepticism towards online transactions due to concerns

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regarding security and trust, thereby limiting e-commerce growth. Additionally, the regulatory environment and cultural attitudes towards online shopping create further obstacles for retailers striving to adapt to modern commerce practices.

It is also believed that E-commerce which refers to the buying and selling of goods and services using the internet, involving the exchange of products, services, and payments models between businesses [B2B], businesses and consumers [B2C], consumers and consumers [C2C], or even consumers and businesses [C2B] should translate into effective retail business performance in Wukari but experience indicate that businesses and consumers are unaware of retail business development in e-commerce and their adoption in managing their businesses. Many of the retail businesses are also unfriendly with E-commerce platforms which enables transactions to occur digitally, often through websites or apps, including a variety of activities such as online shopping, electronic payments, online auctions, and internet banking like; Temu, jiji, jumia and Alibaba. This study seeks to explore the various factors influencing e-commerce performance in Wukari, with a view to identify barriers and suggest strategies for improvement to enhance the competiveness and sustainability of retail business sector in the area.

1.3 Objectives of the Study

The main objective of this study is to investigate the impact of e-commerce on retail business performance in Wukari, Taraba State, Nigeria.

Specifically, the study aims at the following;

i. Examine the Impact of Trust and Security on Consumer Purchase Decision.

ii. Investigate the impact of Logistics and Delivery Systems on Customer Satisfaction.

iii. Ascertain the impact of Consumer Behavior Trends in E-commerce.

1.4 Research Questions

i. How does trust and security impact consumer purchase decisions?

ii. What is the impact of logistics and delivery systems on customer satisfaction in e-commerce?

iii. How do consumer behavior trends influence e-commerce adoption and usage?

1.5 Hypothesis of the study

The following null hypotheses will be tested in this study:

HO_1. Trust and security have no significant impact on consumer purchase decisions.

HO_2. Logistics and delivery systems do not significantly impact customer satisfaction.

HO_3. Consumer behaviour trends have no significant impact on e-commerce.

1.6 Scope of the Study

This study focused on the impact of e-commerce on retail business performance in Wukari, Taraba State, Nigeria. The study is limited to Wukari, Taraba State, Nigeria as its geographical area while the study targets retail businesses in Wukari, including owners/managers and employees as population. The study explored the relationship between e-commerce adoption and retail business performance, including sales, customer engagement, and competitiveness with the aim of investigate the level of e-commerce adoption among retail businesses in Wukari, benefits and challenges of e-commerce adoption, impact of e-commerce on sales, customer engagement, and competitiveness and factors influencing e-commerce adoption.

1.7 Significance of the Study

This study is significant in several ways:

Contribution to knowledge: The study contributes to the existing body of knowledge on e-commerce adoption and its impact on retail business performance, particularly in the context of rural Nigeria.

Practical implications: The study's findings will provide valuable insights for retail business owners, managers, and policymakers in Wukari and similar rural areas, helping them make informed decisions about e-commerce adoption.

Empirical evidence: The study provides empirical evidence on the relationship between e-commerce adoption and retail business performance, which can inform future research and policy decisions.

Theoretical implications: The study's findings will contribute to the development of theories related to e-commerce adoption and business performance, particularly in the context of rural Nigeria.

Policy relevance: The study's recommendations will be useful for policymakers and stakeholders seeking to promote e-commerce adoption and improve retail business performance in rural Nigeria.

Future research: The study's findings will provide a foundation for future research on e-commerce adoption and business performance in similar contexts.

1.8 Limitations of the Study

The study has several limitations. The geographical scope is limited to Wukari, Taraba State, Nigeria, and may not be generalizable to other locations. The sample size may not be representative of all retail businesses in Wukari. The study's time frame of six months may not capture long-term effects of e-commerce adoption. Additionally, the study relies on self-reported data from business owners/managers and employees, which may be subject to biases. The study focuses on current e-commerce technologies and may not account for future advancements. Furthermore, the study only explores the retail sector and may not be applicable to other industries. The study uses quantitative methods and may not capture qualitative aspects of e-commerce adoption. Respondent

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biases, such as social desirability bias or recall bias, may also affect the study. The study may also be limited by the availability and accuracy of secondary data. The study's findings may be influenced by external factors such as economic conditions, government policies, and technological advancements. The study may not account for the impact of e-commerce on other stakeholders such as customers, suppliers, and competitors. The study may also face challenges in accessing data from private businesses or those without an online presence, which may limit the generalizability of the findings. Finally, the study's results may not be applicable to businesses with different sizes, structures, or ownership types.

1.9 Definition of Terms

To ensure clarity and consistency, the following terms are defined as used in this study:

E-commerce: The buying and selling of goods and services over the internet, including i. Online marketplaces, ii. Business-to-business (B2B) and iii. Business-to-consumer (B2C) transactions.

Retail business: A business that sells goods directly to consumers, either e-commerce, or hawkers.

Business performance: The overall effectiveness and efficiency of a business, measured by indicators such as sales, revenue, customer satisfaction, and competitiveness.

Adoption: The process of accepting and using e-commerce technologies and platforms by retail businesses.

Rural area: A geographic area outside urban centers, characterized by lower population density and limited access to infrastructure and services.

Wukari: A rural town in Taraba State, Nigeria, selected as the study location.

Retailers: Owners, managers, and employees of retail businesses in Wukari.

E-commerce platforms: Online platforms and tools used for buying and selling goods and services, including websites, social media, and google or internet.

Digital literacy: The ability to use digital technologies, including computers, smartphones, and the internet, effectively and efficiently.

Internet penetration: The percentage of the population with access to the internet in a given area.

By defining these terms, the study ensures consistency and clarity in its language and concepts.

2.1. Conceptual Review

2.1.1 E-commerce

E-commerce has been widely defined by scholars and institutions, emphasizing its digital nature and its impact on modern business practices. According to Laudon and Traver (2023), e-commerce refers to the use of the internet and digital platforms to conduct business transactions, including the buying and selling of goods and services. Their definition highlights the role of technology in transforming traditional business models, allowing companies to operate beyond physical locations and reach a global customer base. They emphasize that the digital marketplace has eliminated geographical barriers, enabling businesses of all sizes to expand their customer reach. Furthermore, they note that e-commerce integrates various technologies such as cloud computing, mobile applications, and artificial intelligence to enhance the overall shopping experience.

Turban et al. (2023) define e-commerce as the process of conducting commercial activities electronically through digital platforms. They argue that e-commerce extends beyond online shopping, encompassing multiple transaction types, including business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer (C2C), and consumer-to-business (C2B). This definition underscores the versatility and broad scope of e-commerce as a fundamental element of the digital economy. Turban et al. further highlight that e-commerce has transformed supply chain management, making transactions more efficient by integrating real-time inventory tracking, automated payment systems, and seamless digital interactions between businesses and consumers. Their definition also points out that e-commerce has facilitated the rise of digital entrepreneurs and small-scale businesses that can operate without physical storefronts.

According to Chaffey (2022), e-commerce involves all forms of business transactions that occur over the internet, including retail, digital payments, and electronic data exchanges. He emphasizes that e-commerce is not just about selling products but also includes online banking, digital marketing, and customer engagement through electronic channels. Chaffey further explains that e-commerce is deeply integrated with digital marketing strategies, including search engine optimization (SEO), content marketing, and social media advertising, which help businesses attract and retain customers. His perspective illustrates the evolving nature of e-commerce and its role in shaping consumer experiences by providing convenience, personalized recommendations, and flexible purchasing options. He also mentions that the growth of mobile commerce (m-commerce) has further accelerated e-commerce adoption, as more consumers prefer shopping through smartphones and tablets.

Kotler and Keller (2023) define e-commerce as the use of digital tools and internet-based platforms to facilitate the buying and selling of goods and services. They highlight the importance of trust, security, and customer experience in e-commerce, stressing that factors such as website usability, payment security, and logistics efficiency significantly impact consumer confidence and purchase decisions. They argue that customer trust in e-commerce platforms is built through secure payment gateways, transparent return policies, and strong data protection measures. Kotler and Keller also discuss the growing influence of artificial intelligence and big data analytics in personalizing online shopping experiences, enabling businesses to offer product recommendations based on customer preferences and browsing history. Their definition highlights the critical role of technology in

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enhancing customer satisfaction and loyalty in digital commerce.

According to Pavlou (2023), e-commerce represents a shift in how businesses interact with customers, relying on data-driven strategies and personalized marketing. He argues that modern e-commerce platforms leverage artificial intelligence, machine learning, and big data analytics to optimize user experiences and predict consumer behavior. He explains that advanced algorithms help businesses understand consumer needs, improve product recommendations, and provide targeted advertisements. Pavlou further highlights that customer trust in e-commerce platforms is shaped by the effectiveness of security measures, seamless transaction processes, and the reliability of product deliveries. His definition aligns with the growing influence of technology in driving competitive advantage in the digital marketplace, where businesses must continuously innovate to stay relevant in a rapidly changing digital economy.

2.1.2 Dimensions of e-commerce

Trust and Security

Trust and Security, which plays a fundamental role in shaping consumer purchase decisions. According to Pavlou and Gefen (2023), trust in e-commerce transactions is built through secure payment gateways, data protection policies, and transparent business practices. Their study emphasizes that consumers are more likely to engage in online shopping when they feel confident that their personal and financial information is protected. The presence of SSL certificates, fraud prevention mechanisms, and customer reviews all contribute to enhancing trust in e-commerce platforms.

Logistics and Delivery Systems

Logistics and Delivery Systems, which directly influence customer satisfaction. Chopra and Meindl (2022) highlight that the efficiency of logistics, including inventory management, order fulfillment, and last-mile delivery, determines the overall success of an e-commerce business. Their research indicates that businesses that invest in real-time tracking, warehouse automation, and strategic partnerships with logistics providers tend to have higher customer retention rates. Fast and reliable delivery services reduce cart abandonment rates and enhance the overall shopping experience.

Consumer Behavior Trends

Consumer Behavior Trends, which reflect how customers interact with e-commerce platforms. Kotler and Keller (2023) state that digital transformation, social media influence, and mobile commerce have significantly reshaped consumer behavior. Their study suggests that businesses that leverage personalized recommendations, AI-driven chatbots, and targeted marketing campaigns experience greater engagement and sales. The shift towards convenience, instant gratification, and seamless shopping experiences continues to drive innovation in e-commerce strategies.

2.1.3 Retail Business Performance

Retail business performance has been widely studied by scholars, with various definitions emphasizing its financial, operational, and customer-centric aspects. Levy and Weitz (2023) define retail business performance as the extent to which a retail enterprise meets its strategic objectives, including profitability, sales growth, and customer satisfaction. They argue that a well-structured retail strategy that focuses on pricing, promotions, and service quality significantly influences business performance. Their study also highlights that retail businesses must continuously adapt to market trends to remain competitive.

Kotler and Keller (2023) describe retail business performance as a multidimensional concept that integrates financial stability, operational efficiency, and customer engagement. They emphasize that businesses must leverage technology, such as data analytics and digital marketing, to understand consumer behavior and optimize performance. Their research suggests that retailers who effectively utilize customer relationship management (CRM) systems and personalized marketing campaigns tend to experience higher customer retention and revenue growth.

Berman and Evans (2022) provide a broader perspective, stating that retail business performance is measured by a company’s ability to manage its supply chain, improve employee productivity, and integrate digital solutions. They argue that e-commerce and omnichannel retailing have revolutionized business performance by allowing retailers to reach broader audiences, streamline operations, and enhance the shopping experience. Their study concludes that businesses investing in automation, real-time inventory management, and efficient logistics achieve greater operational success.

2.2 Theoretical Framework

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), proposed by Davis (1989), is one of the most widely used models to explain user acceptance of technology. It posits that two factors influence a user's decision to adopt a new technology:

Perceived Usefulness (PU): The degree to which a person believes that using a particular technology will enhance their job performance or improve the efficiency of their business operations.Perceived Ease of Use (PEOU): The extent to which a person believes that using a particular technology will be free from effort or complications.

In the context of Wukari, TAM helps explain how retailers perceive the usefulness and ease of adopting e-commerce platforms to improve their sales, customer reach, and operational efficiency. Retailers who perceive e-commerce as a tool that can enhance their business are more likely to adopt it, provided they find it easy to use.

2.2.2 Transaction Cost Theory

Transaction Cost Theory (TCT) focuses on the costs associated with economic transactions, especially those related to searching for information, negotiating deals, and monitoring compliance. E-commerce has the potential to lower transaction costs for retailers by providing easier access

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to information, streamlining order processing, and automating payment systems.

For retailers in Wukari, e-commerce reduces the need for face-to-face negotiations, expands access to suppliers and customers, and lowers the overall cost of doing business. This theory supports the idea that e-commerce can improve business efficiency, which in turn can enhance overall business performance.

2.2.3Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003), builds on previous technology acceptance models to propose four core determinants that influence technology adoption:

Performance Expectancy: The belief that using the technology will improve performance.

Effort Expectancy: The ease of using the technology.

Social Influence: The degree to which individuals perceive that important others believe they should use the technology.

Facilitating Conditions: The extent to which organizational and technical infrastructure exists to support technology use.

In the case of Wukari, UTAUT helps explain not only the retailer's acceptance of e-commerce but also the external factors that influence their decision. Social influence may come from competitors or customers demanding online shopping options, while facilitating conditions could refer to the availability of digital payment systems, internet connectivity, and support from local government or e-commerce service providers.

2.3 Empirical Review

2.3.1 Impact of E-commerce on Retail Business Performance Globally

Several studies have demonstrated the transformative impact of e-commerce on retail business performance across the world. For instance, a study by Zhou, Dai, and Zhang (2007) examined the effect of e-commerce adoption on business performance in China's retail sector. The findings indicated that retailers adopting e-commerce experienced significant improvements in sales growth, market reach, and customer satisfaction. The study concluded that the integration of e-commerce platforms not only boosts financial performance but also enhances the overall competitiveness of businesses in the retail sector.

Similarly, Laudon and Traver (2016) found that retail businesses adopting e-commerce platforms in developed economies were able to increase profitability by lowering operational costs. E-commerce enabled these businesses to reach a wider market, improving sales and reducing the dependency on physical store locations.

2.3.2 E-commerce Adoption and Performance of SMEs in Nigeria

In the Nigerian context, Ojo, Makoju, and Kehinde (2020) investigated the effect of e-commerce on the performance of small and medium-sized enterprises (SMEs) in Lagos. Their findings showed that the use of e-commerce platforms significantly improved sales and customer engagement for SMEs. The study emphasized that online retail businesses had a higher rate of customer retention due to the personalized shopping experience and convenience that e-commerce offers. However, the study also noted that infrastructural challenges like unstable internet connectivity and lack of trust in online payment systems hinder full adoption.

Another Nigerian study by Adekunle and Fagbo (2019) examined the role of e-commerce in enhancing retail performance in Abuja. The research revealed that e-commerce adoption improved not only sales but also operational efficiency by reducing manual processes in order management and customer service. The study highlighted that businesses that integrated mobile payment systems had greater success due to the increasing number of customers using mobile devices for shopping.

2.3.3 Influence of E-commerce on Retail Business in Rural and Semi-Urban Areas

In semi-urban and rural areas, the impact of e-commerce on retail business has been relatively understudied. However, studies in similar environments suggest that e-commerce can be a game-changer. Kibet and Otieno (2018) conducted research on the adoption of e-commerce among retail businesses in rural areas of Kenya. Their findings indicated that e-commerce platforms helped to connect rural retailers to larger markets beyond their geographical locations, thereby increasing their sales and profitability. However, the study also noted that the lack of digital skills among retailers and customers was a significant barrier to adoption.

In the same vein, Agada and Okonkwo (2021) investigated the impact of e-commerce on retail performance in semi-urban areas of Enugu State, Nigeria. Their research revealed that while e-commerce adoption was slow, businesses that embraced it saw significant improvements in customer satisfaction and revenue generation. The study recommended that government and private entities provide digital literacy programs and better infrastructure to support e-commerce growth in these areas.

2.3.4 Challenges and Benefits of E-commerce Adoption in Developing Countries

Research on e-commerce adoption in developing countries has shown both benefits and challenges. A study by Ibrahim and Adekoya (2020) highlighted that businesses in developing countries like Nigeria benefit from e-commerce by expanding their market reach and reducing operational costs. However, the study also identified challenges such as poor internet infrastructure, low digital literacy, and a lack of trust in online transactions as barriers to full adoption.

In contrast, Afolabi and Olatunji (2021) found that businesses that overcame these challenges reaped significant benefits. Their study on e-commerce adoption among retailers in Ibadan showed that those who implemented digital marketing strategies alongside e-commerce platforms experienced higher customer retention and increased profitability.

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2.3.5 E-commerce Adoption and business performance

Several studies have explored the impact of e-commerce on business performance. Research has shown that e-commerce can significantly enhance the performance of businesses by improving market reach, reducing operational costs, and enhancing customer satisfaction.

Kartiwi and MacGregor (2007) conducted a study on the adoption of e-commerce by small and medium enterprises (SMEs) in Indonesia. They found that businesses that adopted e-commerce experienced improved customer relations and sales growth. However, they noted that the level of e-commerce adoption varied based on the size of the business and the owner's digital literacy.

Awa, Ojiabo, and Emecheta (2015) examined the role of e-commerce adoption in improving business performance among SMEs in Nigeria. Their study revealed that businesses using e-commerce platforms reported higher customer satisfaction and increased sales. They also found that businesses with a high degree of e-commerce adoption experienced better competitive positioning.

Molla and Heeks (2007) in their study on e-commerce in developing countries highlighted that businesses that adopt e-commerce often gain competitive advantages in terms of improved communication with customers, increased brand visibility, and more efficient supply chain management. However, the study also identified infrastructural challenges such as poor internet connectivity as barriers to full adoption in developing economies.

2.3 6 Drivers of E-commerce Adoption

Dholakia and Kshetri (2004) investigated the factors influencing e-commerce adoption among businesses in developing economies. They found that access to technology, perceived benefits, organizational readiness, and customer pressure were significant drivers of e-commerce adoption. Businesses that recognized the potential benefits of reaching a broader market and improving service delivery were more likely to adopt e-commerce.

Wang and Ahmed (2009) examined the influence of organizational factors on e-commerce adoption in the retail sector in China. They found that businesses with strong leadership, innovative culture, and the availability of financial resources were more likely to adopt e-commerce. Moreover, customer demand for online services was a critical factor in pushing businesses to implement e-commerce strategies.

2.3.7 Challenges of E-commerce Adoption

Empirical studies also highlight various challenges that hinder businesses, especially in developing regions, from fully embracing e-commerce.

Boateng et al. (2008) conducted research on e-commerce challenges in Ghana, focusing on the retail sector. They identified inadequate technological infrastructure, lack of trust in online transactions, and limited e-payment options as key barriers to e-commerce adoption. Businesses also faced challenges related to logistics, particularly in delivering goods to customers in remote areas.

Kurnia, Choudrie, and Mahbubur Rahim (2015) in their study of SMEs in Malaysia reported that the high cost of e-commerce implementation and a lack of technical expertise were major hindrances to adoption. They also found that businesses faced difficulties integrating e-commerce with their existing business processes, which made the transition to online platforms more complex.

2.3.8 Impact of E-commerce on Customer Satisfaction and Loyalty

Research has shown that businesses that adopt e-commerce often experience improved customer satisfaction and loyalty, primarily due to the enhanced convenience and service quality provided by online platforms.

Shankar, Smith, and Rangaswamy (2003) analyzed how e-commerce influences customer satisfaction in the retail industry. They found that businesses that offered a seamless online shopping experience, with efficient payment options and reliable delivery services, experienced higher levels of customer satisfaction. This, in turn, led to improved customer loyalty and repeat business.

Ramanathan (2010) studied the effect of e-commerce adoption on customer loyalty in the UK retail sector. The study revealed that businesses that offered personalized online services, such as customized product recommendations and responsive customer support, saw a significant increase in customer retention rates.

2.3.9 E-commerce Adoption in Nigeria

There has been growing interest in understanding how e-commerce affects business performance in Nigeria, particularly in the retail sector.

Olatokun and Kebonye (2010) explored e-commerce adoption among Nigerian retail businesses. Their study found that businesses that adopted e-commerce experienced a marked improvement in customer outreach and sales performance. However, they noted that infrastructural deficiencies, such as unreliable electricity and limited internet access, posed significant challenges to wider adoption.

Eze and Eze (2018) conducted research on the relationship between e-commerce and business growth in the Nigerian retail sector. They found that e-commerce adoption had a positive impact on business growth, particularly in terms of sales revenue. However, they also noted that many businesses were still hesitant to adopt e-commerce due to concerns over security and a lack of trust in online payment systems.

2.3.10 E-commerce and Retail Business Performance in Wukari

There is currently a scarcity of specific empirical studies focused on the impact of e-commerce on retail business performance in Wukari, Taraba State. However, insights can be drawn from broader studies on semi-urban regions in Nigeria. Based on anecdotal evidence and informal market research, many retailers in Wukari are gradually adopting e-

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commerce platforms, primarily using social media (such as Facebook, WhatsApp, and Instagram) to reach customers. Though the rate of adoption is slower compared to urban centers, early adopters report benefits in terms of customer engagement and increased sales.

2.4 Summary of gaps in literature

Global Impact: Studies from developed and developing countries show that e-commerce adoption leads to increased sales, market expansion, and operational efficiency. Retailers that integrate e-commerce platforms benefit from improved customer reach and reduced transaction costs (Zhou, Dai, & Zhang, 2007; Laudon & Traver, 2016).

Nigerian Context: In Nigeria, research demonstrates that e-commerce adoption among retail businesses, particularly SMEs, enhances business performance by improving sales, customer engagement, and operational processes (Ojo, Makoju, & Kehinde, 2020; Adekunle & Fagbo, 2019). Businesses using mobile commerce and digital payment systems experience greater growth due to increased customer convenience.

Rural and Semi-urban Adoption: E-commerce adoption in rural and semi-urban areas is slower but shows potential for improving retail performance. Studies from similar areas in Kenya and Enugu, Nigeria, indicate that e-commerce helps retailers access broader markets, though challenges such as low digital literacy and poor infrastructure hinder widespread adoption (Kibet & Otieno, 2018; Agada & Okonkwo, 2021).

Rural and Semi-urban Adoption: Studies from rural areas, such as Kenya and semi-urban regions like Enugu, Nigeria, show that e-commerce expands market access for retailers, leading to growth in sales and profitability (Kibet & Otieno, 2018; Agada & Okonkwo, 2021). However, challenges like low digital literacy and infrastructure limitations slow adoption.

Challenges in Developing Countries: Common barriers to e-commerce adoption include poor internet infrastructure, distrust in online payments, and low digital skills. However, businesses that overcome these barriers see improved customer satisfaction, profitability, and competitive advantage (Ibrahim & Adekoya, 2020; Afolabi & Olatunji, 2021).

2 4.1 Gaps in Literature

Limited Research in Semi-Urban Areas: There is a scarcity of studies focusing on the impact of e-commerce in semi-urban areas like Wukari. Most research centers on urban settings, leaving a gap in understanding the unique challenges and opportunities faced by businesses in smaller towns.

Lack of Focus on Larger Retail Chains: Most Nigerian studies focus on SMEs, while there is limited analysis of how e-commerce affects larger retail chains in semi-urban contexts. This leaves a gap in understanding how businesses of varying scales utilize e-commerce in non-urban areas.

Infrastructural and Socioeconomic Barriers: While existing studies acknowledge poor infrastructure and low digital literacy as barriers to e-commerce adoption, more research is needed on how these factors specifically affect retail businesses in Wukari and similar areas.

Retailers' Behavioral Factors: There is little research on the attitudes, perceptions, and motivations of semi-urban retailers toward adopting e-commerce. Understanding these behavioral factors is crucial for identifying the obstacles to full-scale adoption.

Effectiveness of E-commerce Platforms: Limited studies have explored the comparative effectiveness of various e-commerce platforms (e.g., dedicated websites, social media, third-party marketplaces) in semi-urban retail contexts, especially in Wukari.

Methodology

3.1 Research Design

This study will employ a descriptive research design to investigate the effect of e-commerce on retail business performance in Wukari. A descriptive design is chosen because it enables the collection of quantitative data that can describe the current state of e-commerce adoption among retail businesses and analyze how it affects their performance. This design is appropriate for answering "what" and "how" questions, such as What is the level of e-commerce adoption among retail businesses in Wukari? How does e-commerce adoption affect retail business performance in terms of sales, customer satisfaction, and operational efficiency?

By using a descriptive design, the study will provide a clear and accurate picture of the relationship between e-commerce adoption and business performance, which can then be analyzed to identify patterns and trends. This design allows for a detailed examination of multiple variables (e.g., types of e-commerce platforms, business size, challenges in adoption) and how they relate to performance outcomes.

The design also facilitates data collection through surveys, which will allow the researcher to capture diverse perspectives from business owners and managers across various retail sectors in Wukari. The focus will be on obtaining measurable data that can be statistically analyzed, offering both a comprehensive overview and specific insights into the e-commerce landscape in the region.

3.2 Area of Study

The area of study for this research is Wukari, a semi-urban town located in Taraba State, Nigeria. Wukari serves as a commercial hub within the state, with a growing number of retail businesses operating in various sectors, including grocery stores, fashion boutiques, electronics shops, and small to medium-sized enterprises (SMEs). The town's strategic location makes it a focal point for trade and commerce, attracting customers from neighboring towns and villages.

Although Wukari is not as urbanized as larger cities like Lagos or Abuja, the retail sector in the area has gradually started to adopt e-commerce practices. Many businesses use social media platforms like WhatsApp, Facebook, and Instagram to market their products, while some are exploring digital payment options for online transactions. However, the

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level of e-commerce adoption remains varied, with some businesses lagging due to infrastructural limitations, lack of digital literacy, and other socioeconomic challenges.

This study focuses on Wukari because it represents a typical semi-urban environment in Nigeria, where traditional retail is still prevalent, but the potential for e-commerce growth is emerging. Understanding how e-commerce impacts retail business performancemedium in such an area will provide valuable insights that can guide local business owners and policymakers in optimizing the use of digital platforms for improved business outcomes.

3.3 Population of the Study

The population of this study consists of customers from selected retail stores in Wukari Metropolis. These stores represent different categories, including grocery stores, fashion boutiques, electronics shops, pharmacies, and general merchandise stores. The distribution of customers across these retail stores is presented in the table below:

Table 1 Number of Retail Store and Customers

Name of Retail Store	**Number of Customers**	**percentage**
Grocery Store	120	28%
Fashion and Clothing Boutique	85	20%
Electronics and Appliance Shop	70	16%
Pharmacies and Health Store	90	21%
General Merchandise Stores	70	16%
Total	**435**	100%

Source: filed survey 2025

3.4 Determination of the sample size

Using **Yamane's formula (1967)** to determine the sample size:

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{435}{1+435(0.05)^2}$$

$$n = \frac{435}{1+435(0.0025)}$$

$$n = \frac{435}{1+1.0875}$$

$$n = \frac{435}{2.0875}$$

$$n = 208$$

Bowley's model of proportional allocation

$$Nh = \frac{Nh\ x\ n}{N}$$

$$nh = \frac{130}{435}x208$$

$$nh = 62$$

$$nh = \frac{75}{435}x208$$

$$nh = 36$$

$$nh = \frac{105}{435}x208$$

$$nh = 50$$

$$nh = \frac{125}{435}x208$$

$$nh = 60$$

Therefore, 62 + 36 + 50 + 60 = 208

3.5 Sampling Technique and Method

This study employs a stratified random sampling technique to ensure adequate representation from different retail store categories. Given that the total population consists of distinct groups, stratification allows for proportional allocation based on the number of customers in each category. Within each stratum, simple random sampling is used to select respondents, ensuring fairness and minimizing bias. Using Yamane's (1967) formula, a sample size of 208 was determined, and Bowley's proportional allocation formula was applied to distribute the sample across the selected retail stores. The allocation includes 51 respondents from grocery stores, 38 from fashion and clothing boutiques, 32 from electronics and appliance shops, 34 from pharmacies and health stores, and 54 from general merchandise stores, ensuring balanced representation for the study.

3.6 Instrument for Data Collection

The primary instrument for data collection in this study is a structured questionnaire, designed to gather quantitative data from respondents across the selected retail stores. The questionnaire consists of closed-ended questions based on a Likert scale (Strongly Agree, Agree, Disagree, and Strongly Disagree) to measure respondents' perceptions of e-commerce and its impact on retail business performance. The instrument is divided into sections covering demographic information, trust and security in e-commerce, logistics and delivery systems, and consumer behavior trends. The questionnaire ensures consistency and reliability in data collection, allowing for easy analysis and comparison of responses.

3.7 Source and Type of Data Collection

The study relies solely on primary data, which is collected directly from respondents through structured questionnaires. These questionnaires are designed to gather firsthand information from customers of selected retail stores, focusing

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on their experiences with e-commerce, trust and security, logistics, and consumer behavior trends. This approach ensures that the data is relevant, current, and specific to the study's objectives.

3.8 Validity instrument

The validity of the research instrument was ensured using face validity and content validity to confirm the accuracy and relevance of the questionnaire. Face validity was established by presenting the questionnaire to experts in e-commerce, retail business performance, and consumer behavior. These experts assessed whether the questions were clear, understandable, and appropriately structured to measure the intended variables. Their feedback was used to refine the instrument, ensuring it aligned with the study's objectives. While Content validity was achieved by ensuring that the questionnaire comprehensively covered all key aspects of the research variables. This was done by reviewing relevant literature and consulting subject matter experts to confirm that the questions addressed critical elements of e-commerce dimensions, retail business performance, and consumer purchase decisions. Additionally, a pilot study was conducted with a small sample of respondents to further validate the instrument and make necessary adjustments before full-scale data collection.

3.9 Reliability of the instrument

The reliability of the research instrument was tested to ensure consistency and accuracy in measuring the study variables. The Cronbach's Alpha reliability test was used to determine the internal consistency of the questionnaire. A pilot study was conducted with a small sample of respondents, and the collected data were analyzed using Cronbach's Alpha. A reliability coefficient of 0.7 or higher was considered acceptable, indicating that the instrument was reliable for data collection.

Additionally, test-retest reliability was applied by administering the questionnaire to the same group of respondents at two different time intervals. The responses were compared to assess the stability and consistency of the instrument. The results showed minimal variation, confirming that the questionnaire was reliable for the main study.

3.10 Analytical techniques

The study employed regression analysis as the primary analytical technique to examine the relationship between e-commerce and retail business performance. Descriptive statistics, such as mean, standard deviation, and frequency distribution, were used to summarize the data and provide an overview of respondents' demographics and key study variables.

Regression Analysis:

Regression Analysis will be conducted to examine the impact of multiple factors (e.g., e-commerce adoption, business size, type of business) on business performance.

This analysis will help to quantify the effect of e-commerce adoption on business performance and control for other variables that may influence performance.

The regression equation will take the form: Y = Bo+B1+X1+B2+X2+B3X3+E

Where:

Y = Retail Business Performance (Dependent Variable)

X_1 = Trust and Security in E-commerce

X_2 = Logistics and Delivery Systems

X_3 = Consumer Behavior Trends

β_0 = Intercept

β_1 - β_3 = Regression Coefficients (showing the impact of each independent variable)

ε = Error term

3.11 Decision rules and Assumptions

The decision rule for this study is based on a significance level of $\alpha = 0.05$, meaning that if the p-value is ≤ 0.05, the null hypothesis (H_0) is rejected, indicating a significant impact of the independent variables on retail business performance. However, if the p-value is > 0.05, the null hypothesis is not rejected, implying no significant effect. To ensure the validity of the regression analysis, key assumptions were considered. First, linearity was checked to confirm a direct relationship between the independent variables (Trust & Security, Logistics & Delivery, and Consumer Behavior Trends) and the dependent variable (Retail Business Performance). Independence of errors was tested using the Durbin-Watson statistic to ensure no correlation between residuals. Homoscedasticity was assessed through scatter plots to confirm that residuals had constant variance. Additionally, normality of residuals was evaluated using histograms and P-P plots. Lastly, multicollinearity was tested using the Variance Inflation Factor (VIF) and tolerance values to ensure that independent variables were not highly correlated. By satisfying these assumptions, the regression model provided reliable insights into the impact of e-commerce on retail business performance.

4.1 DATA PRESENTATION AND ANALYSIS

This chapter presents the data collected from the respondents regarding the impact of e-commerce on retail business performance using a structured questionnaire.

Table 4.2 Response Rate of Distributed Questionnaires

Category	Number of Questionnaires	Percentage (%)
Distributed	208	100%
Returned & Valid	192	92.3%
Not Returned	16	7.7%

Source: field survey, 2025

This table shows that out of the 208 questionnaires distributed, 192 were successfully returned and deemed valid

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for analysis, representing a 92.3% response rate, while 16 questionnaires were not returned, accounting for 7.7%.

4.2 Data Analysis

The collected data were analyzed to provide insights into the demographic characteristics of the respondents. This section presents the distribution of respondents based on gender, age, and educational qualifications. The results are displayed in the tables below.

Table 4.3 Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	110	57.3%
Female	82	42.7%
Total	**192**	**100%**

Source: field survey, 2025

Interpretation: The table above shows that out of 192 respondents, 110 (57.3%) were male, while 82 (42.7%) were female. This indicates that the majority of respondents were male.

ND/NCE (31.3%). This implies that a considerable percentage of e-commerce users have formal education, which may influence their understanding and adoption of online transactions.

Table 4.4 Online Shopping Frequency of Respondents

Online Shopping Frequency	Frequency	Percentage (%)
Daily	35	18.2%
Weekly	60	31.3%
Monthly	70	36.5%
Rarely	27	14.1%
Total	**192**	**100%**

Source: field survey, 2025

Interpretation: The results indicate that most respondents (36.5%) shop online on a monthly basis, while 31.3% make purchases weekly. Only 18.2% engage in daily online shopping. This shows that while e-commerce is growing in Wukari, the frequency of online purchases varies among individuals.

4.3 Descriptive Statistics

Descriptive statistics provide a summary of the data collected, offering insights into key variables in the study. This section presents measures such as mean, standard deviation, and frequency distribution to analyze the impact of e-commerce on retail business performance in Wukari.

Table 4.5 Descriptive Statistics of Key Variables

Variables	N	Mean	Std. Deviation
Trust and Security	192	3.85	0.76
Logistics and Delivery	192	3.72	0.82
Consumer Behavior Trends	192	3.91	0.74
Retail Business Performance	192	4.02	0.68

Source: field survey, 2025

Interpretation:
The mean values suggest that respondents generally agree that trust and security (M = 3.85), logistics and delivery (M = 3.72), and consumer behavior trends (M = 3.91) significantly influence retail business performance (M = 4.02). The standard deviation values indicate a moderate variation in responses, showing a consistent perception among respondents.

4.4 Regression Analysis

Regression analysis was conducted to examine the relationship between e-commerce dimensions (Trust and Security, Logistics and Delivery, and Consumer Behavior Trends) and Retail Business Performance in Wukari. This statistical technique helps determine the extent to which independent variables predict variations in the dependent variable.

Table 4.6 Regression Analysis Results

Variables	Coefficients (B)	Std. Error	t-value	Sig. (p-value)
Constant	1.245	0.312	3.99	0.000**
Trust and Security	0.342	0.095	3.60	0.001**
Logistics and Delivery	0.298	0.088	3.39	0.002**
Consumer Behavior Trends	0.412	0.092	4.48	0.000**
R^2	**0.678**			
Adjusted R^2	**0.670**			
F-statistic	**45.76**			0.000**

Source: field survey, 2025

Interpretation:
The regression results indicate that Trust and Security (B = 0.342, p = 0.001), Logistics and Delivery (B = 0.298, p = 0.002), and Consumer Behavior Trends (B = 0.412, p = 0.000) all have a significant positive effect on Retail Business Performance. The R^2 value of 0.678 suggests that

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approximately 67.8% of the variation in Retail Business Performance can be explained by these independent variables. The F-statistic (45.76, $p < 0.05$) confirms that the overall model is statistically significant.

4.4.1 Data Generation for Hypotheses Testing

To test the hypotheses of this study, responses from the questionnaire were collected and analyzed using regression analysis. The data generation process involved coding the responses, checking for missing values, and ensuring data consistency. The independent variables—**Trust and Security, Logistics and Delivery, and Consumer Behavior Trends**—were measured using a Likert scale, while the dependent variable, **Retail Business Performance**, was assessed based on consumer satisfaction and business growth indicators.

The collected data were input into statistical software for analysis, ensuring reliability and validity. The descriptive statistics provided a preliminary understanding of the distribution of responses, while regression analysis was conducted to establish relationships between the variables. The results obtained serve as the foundation for testing the formulated hypotheses in the next section.

Table 4.7 Model Summary Hypotheses Testing

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.812	0.659	0.654	2.314

Interpretation:

The **R value (0.812)** indicates a strong correlation between the independent variables (Trust and Security, Logistics and Delivery, Consumer Behavior Trends) and the dependent variable (Retail Business Performance). The **R Square (0.659)** suggests that approximately **65.9% of the variation** in retail business performance can be explained by the model, indicating a good fit. The **Adjusted R Square (0.654)** confirms the model's reliability after adjusting for the number of predictors.

4.5 Summary and Discussion of Findings

The study examined the impact of e-commerce dimensions—Trust and Security, Logistics and Delivery Systems, and Consumer Behavior Trends—on Retail Business Performance in Wukari. The findings, based on regression analysis, revealed that all three independent variables significantly influence business performance, as indicated by their **p-values ($p < 0.05$)**. Trust and Security had the strongest impact, followed by Logistics and Delivery Systems, while Consumer Behavior Trends also played a crucial role in shaping business outcomes. These results highlight the increasing reliance on secure transactions, efficient logistics, and evolving consumer preferences in the retail sector.

The findings align with previous studies, such as those by **Kumar and Gupta (2022)** and **Adeyemi et al. (2023)**, which emphasize that trust in online transactions fosters customer confidence, leading to higher sales. Additionally, **Smith and Brown (2021)** found that businesses with well-structured logistics networks experience improved customer satisfaction and repeat purchases. This study confirms that for retail businesses in Wukari to remain competitive, they must enhance online security measures, optimize delivery operations, and adapt to changing consumer behaviors driven by digital technology. The results suggest that embracing these e-commerce dimensions can lead to better customer retention, higher sales, and overall improved performance in the retail sector.

5.1 Summary of Findings

This study investigated the impact of e-commerce on retail business performance in Wukari, focusing on three key dimensions: **Trust and Security, Logistics and Delivery Systems, and Consumer Behavior Trends**. The study employed regression analysis to determine the extent to which these factors influence business performance. The findings revealed that all three dimensions significantly contribute to the success of retail businesses operating within the e-commerce space.

The results showed that **Trust and Security** play a critical role in consumer purchase decisions, as customers are more likely to engage with businesses that guarantee safe transactions and data protection. **Logistics and Delivery Systems** were found to directly influence customer satisfaction, with efficient delivery services improving customer retention and repeat purchases. **Consumer Behavior Trends** also had a notable impact, as shifting preferences and digital adoption patterns continue to shape purchasing habits. The study concluded that retail businesses in Wukari must strengthen their online security, optimize logistics, and adapt to changing consumer behaviors to enhance performance in the competitive e-commerce landscape.

5.2 Conclusion

This study examined the impact of e-commerce on retail business performance in Wukari, focusing on trust and security, logistics and delivery systems, and consumer behavior trends. The findings indicate that e-commerce has become a vital component of modern retail operations, significantly influencing consumer purchase decisions, customer satisfaction, and overall business success. Trust and security were found to be fundamental, as consumers prefer platforms that ensure secure transactions and protect their personal information. Similarly, efficient logistics and delivery systems enhance customer satisfaction, leading to repeat patronage and business growth.

Furthermore, consumer behavior trends continue to evolve, with more shoppers embracing online transactions due to convenience and accessibility. Retail businesses that effectively adapt to these changes by implementing strong digital strategies are more likely to achieve sustained growth. In conclusion, e-commerce is a transformative force in the retail sector, and businesses that prioritize trust, optimize

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logistics, and align with consumer behavior trends will maintain a competitive advantage.

5.3 Recommendations

Retail businesses in Wukari should prioritize enhancing trust and security in e-commerce transactions by adopting secure payment systems, data encryption, and fraud prevention mechanisms. Since consumer trust is a major determinant of online purchase decisions, businesses should also provide clear return policies, transparent pricing, and customer support to resolve security concerns. Educating customers on safe online shopping practices will further boost confidence and encourage more frequent transactions.

Additionally, improving logistics and delivery systems is essential for ensuring customer satisfaction. Retailers should collaborate with reliable logistics providers and invest in tracking systems that allow customers to monitor their orders in real time. Timely deliveries, flexible shipping options, and hassle-free return policies will enhance the overall shopping experience. Furthermore, businesses should leverage data analytics to understand consumer behavior trends and personalize marketing efforts. Engaging with customers through social media, offering discounts, and providing multiple payment options will improve customer retention and drive business growth.

5.4 Contribution to knowledge

This study contributes to the existing body of knowledge by providing empirical evidence on the impact of e-commerce on retail business performance, particularly in the context of Wukari. It highlights the significance of trust and security in shaping consumer purchase decisions, emphasizing the need for businesses to implement robust security measures and transparent policies to build consumer confidence. By focusing on the role of logistics and delivery systems in customer satisfaction, the study adds to the literature on supply chain management in e-commerce, demonstrating how efficient delivery services can enhance customer experience and loyalty.

Furthermore, the study advances knowledge on consumer behavior trends in e-commerce by exploring how digital literacy, social media engagement, and personalized marketing influence online shopping patterns. The findings provide valuable insights for retail businesses, policymakers, and researchers, offering practical recommendations for optimizing e-commerce strategies in developing economies. By situating the research within the Wukari retail market, this study fills a gap in localized research and serves as a reference for future studies on e-commerce adoption and its effects on business growth

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