DISRUPTIVE TECHNOLOGY ADOPTION IN E-DELIVERY AND DIGITAL MARKETING STRATEGIES, AND THE PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (SMES) IN PORT HARCOURT METROPOLIS, RIVERS STATE, NIGERIA

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Abstract
This study examines the relationship between the adoption of selected disruptive digital technologies operationalised as e-delivery adoption and digital marketing strategies and the performance of small and medium-sized enterprises (SMEs) in Port Harcourt Metropolis, Rivers State, Nigeria. The study focuses on these two dimensions because they represent customer-facing applications that directly connect market access, order fulfilment, customer engagement, and business-process outcomes. Other technologies, including cloud computing, artificial intelligence, and digital payment systems, are recognised as important enablers of SME digital transformation but are treated as contextual technologies rather than separate predictor variables in this study. A cross-sectional survey research design was employed, targeting a population of 1,200 registered SMEs in Port Harcourt. Stratified random sampling was used to select a sample of 250 respondents. Of the 250 questionnaires distributed, 215 were returned and used for analysis. Spearman's rank-order correlation coefficient was used for data analysis through SPSS version 22. The findings revealed significant positive relationships between e-delivery adoption and business growth, and between digital marketing strategies and operational efficiency. The study concludes that the selected customer-facing dimensions of disruptive technology adoption are associated with improved SME performance in Port Harcourt.

1.0 Introduction

Small and medium-sized enterprises (SMEs) increasingly operate in a business environment shaped by digital commerce, online platforms, social commerce, artificial intelligence, cloud services, digital payments, and data-driven decision-making. Digital transformation can help SMEs overcome size-related limitations by widening market access, improving coordination, reducing transaction costs, and strengthening customer relationships. However, SMEs do not adopt all technologies at the same rate or for the same purpose. The OECD (2021) notes that

SMEs continue to lag behind larger firms in digital transformation, even though online platforms, artificial intelligence, cloud-based applications, and other emerging technologies offer opportunities to improve performance. This makes it necessary to examine not only whether SMEs adopt digital technologies, but also which forms of adoption are most directly associated with measurable business outcomes.

E-delivery adoption encompasses the use of digital platforms and tools to receive orders, coordinate fulfilment, communicate delivery information, and provide products or services through online channels. Digital marketing strategies include the use of social media, search engine optimisation, email, mobile communication, online advertising, and related data-driven tools to attract, engage, and retain customers. These two dimensions are especially relevant to SMEs because they are customer-facing, relatively scalable, and directly connected to market reach, sales opportunities, service responsiveness, and operating processes. Recent evidence shows that SMEs are increasingly using e-commerce and digital channels to extend market reach, while digital tools and artificial intelligence can support customer insight, marketing personalisation, and operational decision-making (PwC Nigeria, 2024; OECD, 2021).

The contemporary digital-commerce environment also includes platform economies and social commerce. Online platforms reduce the need for SMEs to build all distribution and promotional infrastructure independently by connecting sellers with customers, payment providers, logistics providers, and data services. Social commerce further integrates product discovery, customer interaction, promotion, and transaction-related activities within social-media environments. These developments have blurred the traditional distinction between marketing and distribution and have increased the importance of digitally coordinated customer journeys. The literature on digital transformation also identifies social media, mobile applications, artificial intelligence, and related technologies as important forces shaping current business models and SME competitiveness (Almeida et al., 2024).

Artificial intelligence, cloud computing, and digital payment systems are therefore relevant to the broader concept of disruptive technology adoption. Artificial intelligence can support chatbots, recommendation systems, customer segmentation, demand prediction, and marketing automation. Cloud computing can provide affordable access to storage, software, collaboration tools, and business analytics. Digital payment systems can reduce transaction friction and support online commerce. Nevertheless, this study does not treat each of these technologies as a separate independent variable. Instead, they are recognised as enabling infrastructure or complementary technologies that may support e-delivery and digital marketing. The study concentrates on e-delivery adoption and digital marketing strategies because these dimensions are observable at the customer-interface level and correspond directly with the two performance outcomes examined: business growth and operational efficiency.

The existing literature provides useful evidence on SME digital transformation, but important limitations remain. First, much of the recent literature discusses digitalisation broadly without isolating the relationship between customer-facing e-delivery practices and business growth. Second, studies on digital marketing frequently examine visibility, engagement, or sales without connecting these practices to operational efficiency. Third, evidence from international studies and national-level reports cannot automatically explain the experience of SMEs operating in Port Harcourt, where infrastructure quality, logistics, digital skills, power supply, trust, and access to finance may shape technology adoption differently. Fourth, the literature often identifies cloud computing, artificial intelligence, digital payments, platforms,

and social commerce as part of the digital ecosystem but does not clearly explain why particular dimensions are selected for empirical testing.

This study addresses these gaps by examining two specific relationships among SMEs in Port Harcourt Metropolis. It tests whether e-delivery adoption is significantly related to business growth and whether digital marketing strategies are significantly related to operational efficiency. The study does not claim that these two dimensions exhaust the meaning of disruptive technology adoption. Rather, it treats them as strategically selected dimensions through which SMEs interact directly with customers and convert digital capability into market and process outcomes. The study therefore provides a focused empirical assessment while acknowledging the wider ecosystem of cloud computing, artificial intelligence, digital payment systems, online platforms, and social commerce.

The objectives of this paper include the followings:

i. Examine the relationship between e-delivery adoption and business growth of SMEs in Port Harcourt Metropolis, Rivers State, Nigeria.
ii. Examine the relationship between digital marketing strategies and operational efficiency of SMEs in Port Harcourt Metropolis, Rivers State, Nigeria.

2.0 Review of Related Literature

Recent scholarship presents SME digital transformation as a multidimensional process rather than the simple acquisition of isolated technologies. It includes changes in business models, customer relationships, internal processes, data use, skills, and organisational capabilities. The OECD (2021) identifies online platforms, artificial intelligence, blockchain ecosystems, digital security, and cloud-based services as important elements of the changing SME environment. The report also emphasises that SMEs face barriers including limited resources, inadequate digital skills, security concerns, and unequal access to infrastructure. These constraints are particularly important in developing-country contexts, where the potential benefits of digitalisation coexist with unreliable connectivity, high costs, and uneven institutional support.

Digital commerce has expanded the opportunities available to SMEs by enabling them to display products, receive orders, communicate with customers, and coordinate delivery through online channels. Platform economies are important in this process because platforms connect SMEs to customers and complementary service providers without requiring each enterprise to develop a complete digital infrastructure independently. However, platform participation may also create dependence on platform rules, commissions, algorithms, data practices, and changing visibility conditions. Consequently, SME performance depends not only on adoption but also on the ability to use platforms strategically and manage the associated risks.

Social commerce represents another recent development. It combines social interaction, product discovery, promotion, customer reviews, and transaction-related activities through social-media platforms. For SMEs, social commerce can lower promotional barriers and facilitate direct engagement with niche customer groups. It also creates a closer relationship between digital marketing and e-delivery because customers may discover a product, communicate with the seller, place an order, and arrange fulfilment within an integrated digital journey. Recent research describes social media, mobile applications, artificial intelligence, and related technologies as significant components of contemporary digital transformation (Almeida et al., 2024).

Artificial intelligence is increasingly relevant to SME marketing and operations. AI-enabled tools can assist with customer-service chatbots, recommendation systems, audience segmentation, automated content, demand forecasting, and performance analytics. Evidence on Nigerian SMEs indicates that AI applications may improve personalisation and decision-making, although adoption is constrained by limited specialist knowledge, data-protection concerns, infrastructure limitations, and cost (Alao et al., 2024). In this study, AI is treated as a complementary technology that may strengthen e-delivery and digital marketing rather than as a separately tested dimension.

Cloud computing and digital payment systems are similarly important enablers. Cloud services can provide SMEs with access to software, data storage, collaboration, customer-relationship management, inventory tools, and analytics without the cost of maintaining extensive physical information-technology infrastructure. Digital payments support online transactions, improve convenience, and facilitate the integration of marketing, ordering, and fulfilment. These technologies are included in the study's conceptual context but are not measured as independent variables because the empirical model is intentionally limited to the two customer-facing dimensions specified in the objectives.

The selection of e-delivery adoption and digital marketing strategies is based on four considerations. First, both dimensions are directly visible in the customer journey: digital marketing creates awareness and engagement, while e-delivery supports ordering, fulfilment, and service access. Second, both dimensions can be adopted incrementally by SMEs through mobile devices, social-media accounts, online marketplaces, delivery applications, and other accessible tools. Third, each dimension has a plausible connection with a distinct performance outcome. E-delivery is expected to support business growth by widening market access and improving service convenience, whereas digital marketing is expected to support operational efficiency through targeted communication, measurable campaigns, customer-data use, and reduced marketing waste. Fourth, restricting the model to two dimensions makes the study empirically manageable and permits focused analysis within the available sample.

This selection does not imply that cloud computing, artificial intelligence, digital payments, or platform technologies are unimportant. Instead, these technologies are treated as enabling conditions that may be embedded in or support the two selected dimensions. For example, a cloud-based customer-management system may support digital marketing, AI may improve customer targeting, and digital payments may facilitate e-delivery transactions. Future studies may test these technologies as separate variables or examine them through a broader digital-maturity index. The present study focuses on the direct customer-facing dimensions most closely aligned with its objectives and available measures.

Prior studies establish that digital transformation can improve SME market access, innovation, and operational capability, but they do not fully resolve three issues. First, broad studies of digitalisation often combine multiple technologies, making it difficult to determine which customer-facing practices are associated with specific performance outcomes. Second, evidence on digital marketing commonly emphasises promotion and customer engagement, while its possible relationship with operational efficiency receives less attention. Third, evidence on e-delivery is often discussed as part of e-commerce or logistics without examining its relationship with business growth among SMEs in Port Harcourt. These limitations demonstrate a contextual, dimensional, and outcome-related gap.

The present study responds to this gap by isolating e-delivery adoption and digital marketing strategies and relating them to two distinct dimensions of SME performance: business growth

and operational efficiency. It also situates these variables within the wider digital ecosystem of online platforms, social commerce, artificial intelligence, cloud computing, and digital payment systems. The contribution is therefore not a claim that the selected dimensions are the only forms of disruptive technology adoption, but an empirical examination of two strategically relevant dimensions in a specific Nigerian metropolitan context.

Conceptual Review

Concept of Disruptive Technology in E-Delivery & Marketing

Disruptive technology adoption in this study refers to the extent to which SMEs integrate digital technologies that alter how they reach customers, deliver products or services, coordinate business activities, and compete in the market. The broader ecosystem includes e-commerce platforms, social commerce, cloud computing, artificial intelligence, digital payment systems, mobile applications, and data analytics. However, the study operationalises the construct through two selected dimensions: e-delivery adoption and digital marketing strategies. These dimensions were selected because they represent the most direct customer-facing applications and because they correspond with the study's two performance outcomes. Cloud computing, artificial intelligence, and digital payments are acknowledged as complementary technologies that can enable or strengthen the selected dimensions, but they are outside the scope of the present empirical model.

The integration of disruptive technologies in e-delivery systems has empowered businesses to deliver goods and services faster, more efficiently, and at a lower cost. E-delivery refers to the use of digital technologies to provide products or services directly to customers through online platforms, which has seen tremendous growth, particularly during the COVID-19 pandemic. Digital platforms, such as e-commerce websites, mobile apps, and social media channels, have allowed SMEs to expand their market reach without the traditional overheads associated with physical stores. As highlighted by Brynjolfsson and McAfee (2014), these technologies facilitate automation, reducing the need for intermediaries and providing businesses with a competitive edge in a rapidly changing market environment.

In the realm of digital marketing, disruptive technologies enable businesses to reach their target audiences through a variety of channels, including social media, search engine optimization (SEO), and email marketing. By leveraging data analytics and artificial intelligence (AI), businesses can offer personalized advertisements and promotions tailored to individual customer preferences, thereby increasing engagement and conversion rates. Digital marketing strategies have become indispensable for SMEs, allowing them to compete with larger enterprises by targeting niche markets and optimizing marketing spend. A study by Chaffey (2015) emphasizes that these tools have democratized marketing, enabling even the smallest businesses to effectively advertise their products on a global scale.

The adoption of these disruptive technologies in e-delivery and marketing is particularly important for SMEs in emerging markets, where access to traditional distribution channels and advertising platforms may be limited. In Port Harcourt, Rivers State, Nigeria, SMEs are increasingly turning to digital solutions to overcome logistical challenges and expand their reach. For instance, mobile internet, social media marketing, and e-commerce platforms are being utilized to provide services and reach new customers that were previously inaccessible. As per the findings of Nneji (2024), the adoption of cloud computing, artificial intelligence, and the Internet of Things (IoT) in Nigeria has enabled SMEs to streamline their operations and gain real-time insights into consumer behavior, further enhancing their competitiveness in the digital age.

Despite the clear advantages, the integration of disruptive technologies in e-delivery and marketing is not without challenges. SMEs often face barriers such as limited technological infrastructure, lack of digital literacy, and high initial costs associated with implementing these technologies. According to Mani et al. (2024), while digital transformation can enhance efficiency, it requires significant investment in training, infrastructure, and technology adoption, which many SMEs may struggle to afford. Additionally, businesses must also navigate the complexities of cybersecurity and data privacy concerns, which have become more pressing as digital platforms continue to expand.

Dimension of Disruptive Technology in E-Delivery & Marketing

Disruptive technology adoption in e-delivery and digital marketing is examined through e-delivery adoption and digital marketing strategies. E-delivery adoption captures the use of digital channels for ordering, fulfilment coordination, delivery communication, and service access. Digital marketing strategies capture the use of social media, search engines, email, mobile platforms, online advertising, and data-driven customer engagement. The selection is deliberate rather than exhaustive: the two dimensions provide a focused model of how SMEs attract customers and deliver value through digital channels. Other technologies, such as cloud computing, artificial intelligence, and digital payment systems, are treated as supporting technologies that may be embedded in the selected activities.

E-Delivery Adoption - E-delivery adoption refers to the integration of digital platforms and tools for the efficient delivery of products and services directly to consumers, reducing operational costs, enhancing accessibility, and improving customer satisfaction. Disruptive technologies in e-delivery allow businesses, especially SMEs, to bypass traditional distribution channels and engage directly with their customers. The digital revolution in logistics, powered by technologies like cloud computing and mobile applications, has fundamentally transformed the delivery model by providing faster, more reliable, and cost-effective solutions for SMEs (Mazzarol & Reboud, 2021). In the context of SMEs in Port Harcourt, Rivers State, e-delivery adoption can help businesses streamline their operations by automating the order processing and fulfillment stages, enabling faster response times to customer needs.

As businesses shift to digital delivery systems, SMEs are able to tap into new markets and expand their customer base. E-commerce platforms like Shopify, WooCommerce, and local delivery services have enabled SMEs in emerging economies to scale operations without the need for extensive physical infrastructure (Statista, 2022). By adopting these e-delivery systems, SMEs in Port Harcourt can compete with larger corporations by offering personalized and on-demand services to a wider audience. This transformation has proven to be especially vital in the wake of the COVID-19 pandemic, which accelerated the adoption of digital solutions for product delivery (World Bank, 2021).

Digital Marketing Strategies - Digital marketing strategies refer to the use of online platforms and tools, such as social media, email marketing, search engine optimization (SEO), and paid online advertising, to promote products and services. These technologies have become central to how businesses engage with consumers and build brand awareness in an increasingly digital world. According to Chaffey (2021), digital marketing enables businesses to target specific customer segments, measure campaign performance, and create personalized customer experiences through data-driven insights. For SMEs, especially those in regions with limited access to traditional marketing channels, digital marketing provides an affordable and efficient way to reach a global audience.

In Port Harcourt, digital marketing strategies have become indispensable for SMEs seeking to enhance their visibility and attract customers from both local and international markets. Social media platforms, such as Facebook, Instagram, and Twitter, offer cost-effective means for SMEs to promote their products, engage with their target audience, and gather feedback in real-time. Additionally, search engine optimization (SEO) allows SMEs to improve their website's visibility on search engines, making it easier for customers to discover their products (Gartner, 2021). By integrating these tools into their marketing strategies, SMEs can optimize their marketing spend and achieve a higher return on investment compared to traditional advertising methods.

However, the successful implementation of digital marketing strategies requires SMEs to be adaptable and continuously update their approaches based on consumer behavior and technological advancements. One of the key challenges faced by SMEs in Port Harcourt is the lack of digital marketing expertise and training, which may limit their ability to fully capitalize on the potential of these tools. Moreover, SMEs must also navigate challenges related to data privacy and cybersecurity to ensure they maintain customer trust while using digital marketing platforms (McKinsey & Company, 2020).

Concept of Performance of SMEs

The performance of Small and Medium-sized Enterprises (SMEs) in Port Harcourt Metropolis, Rivers State, plays a critical role in driving local economic development, employment, and poverty reduction. SMEs in this region contribute significantly to job creation, innovation, and diversification of the economy. In Port Harcourt, as in many other parts of Nigeria, SMEs make up a large portion of the local business landscape. According to the National Bureau of Statistics (2020), SMEs account for over 90% of businesses and a significant percentage of employment in Nigeria. These enterprises are essential in providing livelihoods, particularly in the wake of challenges faced by the oil sector, which has historically been the backbone of the region's economy.

The economic impact of SMEs in Port Harcourt is not just limited to local job creation. These enterprises are integral to generating revenue through both local and international trade. SMEs in Port Harcourt contribute to the economic vitality of the region by generating income, which circulates within the community, fostering growth in other sectors such as retail, services, and manufacturing. In 2021, SMEs in Nigeria were estimated to contribute about 48% of the national GDP (UNCTAD, 2021), a percentage that can be mirrored in Port Harcourt as the region is home to a diverse range of SMEs spanning industries like construction, manufacturing, agriculture, retail, and technology. As these SMEs expand, they contribute to improving the overall economic growth of the state, providing more opportunities for local communities.

In addition to revenue generation, SMEs in Port Harcourt play a vital role in enhancing foreign exchange earnings through exports. Port Harcourt, being a key commercial hub in southern Nigeria, is home to many SMEs involved in agriculture, manufacturing, and services that engage in export activities. These exports contribute to the strengthening of Nigeria's foreign exchange reserves and improve the trade balance. With the region's proximity to major seaports like the Port Harcourt Port, SMEs involved in the export of goods such as agricultural products, oil-related services, and manufactured goods provide essential foreign exchange earnings that help stabilize Nigeria's economy (OECD, 2020). As SMEs in Port Harcourt continue to expand their export reach, they contribute to Nigeria's economic resilience, diversifying its economy beyond oil.

Furthermore, SMEs in Port Harcourt are pivotal in reducing poverty and promoting socio-economic development in both urban and rural areas. These businesses create job opportunities and drive income generation for individuals, particularly in communities where other industries may not be as prevalent. SMEs, particularly in agriculture and manufacturing, are a major source of employment in rural areas, where they can help alleviate poverty and stimulate local economies. The labor-intensive nature of SMEs in Port Harcourt means they create diverse job opportunities across various sectors, from retail and services to logistics and technical support. This job creation has a significant impact on poverty reduction, with SMEs being a key driver of employment for both skilled and unskilled labor in the region (World Bank, 2020).

In addition to job creation, SMEs in Port Harcourt also contribute to the development of local infrastructure. As SMEs grow and expand, they help stimulate the construction of roads, market spaces, and other physical infrastructure that benefits both the business and the surrounding communities. These infrastructural developments enhance the mobility of goods and services, increase connectivity, and support the overall growth of the regional economy. This is particularly important in Port Harcourt, where urbanization and economic growth are often accompanied by the need for better infrastructure to support the expanding population and business activities.

Measures of Performance of SMEs

Performance of SMEs can be understood through two essential measures: business growth and operational efficiency.

Business Growth - Business growth is a key indicator of the performance of Small and Medium-sized Enterprises (SMEs), particularly in regions like Port Harcourt Metropolis, Rivers State. For SMEs, growth can be measured by the increase in sales revenue, market share, or the expansion of products and services. As SMEs expand, they create new opportunities for employees, increase production capacities, and improve profitability, all of which contribute to economic development. Growth also signifies the ability of an SME to scale its operations, which often involves entering new markets, whether locally, nationally, or internationally. The performance of SMEs in Port Harcourt can be linked to their ability to adopt innovative business strategies, such as integrating disruptive technologies like e-delivery systems and digital marketing strategies, which can lead to improved outreach and better customer engagement (Mazzarol & Reboud, 2021).

For instance, SMEs in the manufacturing or retail sector in Port Harcourt may experience business growth through the introduction of new products or services or by increasing their operational efficiency. This growth can drive the local economy, contribute to the development of infrastructure, and support the creation of new jobs. When SMEs achieve consistent growth, they not only enhance their business performance but also contribute to regional economic stability by boosting local demand and improving the purchasing power of residents. As business growth in SMEs accelerates, it contributes to the overall economic dynamism of the Port Harcourt region (UNCTAD, 2021).

Operational Efficiency - Operational efficiency refers to the ability of an SME to maximize outputs while minimizing inputs, thereby improving profitability and competitiveness. For SMEs in Port Harcourt, operational efficiency is crucial for maintaining profitability while keeping costs low, particularly in an environment where competition is increasing. Efficient SMEs are able to optimize their production processes, reduce waste, and effectively manage their resources. This is particularly important for SMEs in sectors such as manufacturing,

construction, and services, where the costs of raw materials, labor, and logistics directly impact profit margins.

The use of disruptive technologies, such as automation, cloud-based systems, and digital marketing, plays a vital role in improving the operational efficiency of SMEs. By automating repetitive tasks and leveraging digital tools to streamline business processes, SMEs can improve service delivery times, enhance product quality, and reduce costs. For instance, SMEs that adopt e-delivery systems can reduce costs associated with physical distribution, while those that embrace digital marketing tools can target customers more effectively and efficiently, leading to reduced customer acquisition costs (Brynjolfsson & McAfee, 2014). In Port Harcourt, where infrastructure and logistical challenges can often create inefficiencies, the adoption of these technologies provides SMEs with the opportunity to overcome traditional barriers to success.

3.0 Methodology

The study on e-delivery and digital marketing adoption in SMEs in Port Harcourt used a quantitative approach to examine the relationship between disruptive technologies and SME performance. A correlational research design was applied to explore the impact of e-delivery and digital marketing on business growth and operational efficiency. The target population included 1,200 registered SMEs in Port Harcourt; which Agwu and Emeti (2014) report that there are 1,200 registered SMEs in Port Harcourt. Stratified random sampling technique were used to select a sample size of 250. Data was collected through structured surveys, and secondary data was obtained from trade association and government reports. Of the 250 respondents, questionnaires distributed and 215 were returned, resulting in an 86% response rate and used for analysis. The data was analyzed using Spearman's Rank Order Correlation Coefficient with SPSS 22.0.

Data Analysis and Result

$H0_1$: There is no significant relationship between e-delivery adoption and business growth of SMEs in Port Harcourt Metropolis Rivers State, Nigeria.

Correlations

			E-delivery Adoption	Business Growth
Spearman's rho	E-delivery Adoption	Correlation Coefficient	1.000	.604**
		Sig. (2-tailed)	.	.000
		N	215	215
	Business Growth	Correlation Coefficient	.604**	1.000
		Sig. (2-tailed)	.000	.
		N	215	215

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

Source: SPSS Output from Field Data, 2025.

$H0_1$: There is no significant relationship between e-delivery adoption and business growth of SMEs in Port Harcourt Metropolis Rivers State, Nigeria. The result reveals a significant relationship between e-delivery adoption and business growth (rho = .604, p = 0.000). Based on the decision rule of $p < 0.05$ for null rejection, we reject the null hypothesis and accept the alternative hypothesis: that there is a significant relationship between e-delivery adoption and business growth of SMEs in Port Harcourt Metropolis Rivers State, Nigeria.

$H0_2$: There is no significant relationship between digital marketing strategies and operational efficiency in SMEs of Port Harcourt Metropolis Rivers State, Nigeria.

Correlations				
			Digital Marketing Strategies	Operational Efficiency
Spearman's rho	Digital Marketing Strategies	Correlation Coefficient	1.000	.590**
		Sig. (2-tailed)	.	.000
		N	215	215
	Operational Efficiency	Correlation Coefficient	.509**	1.000
		Sig. (2-tailed)	.000	.
		N	215	215
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS Output from Field Data, 2025.

$H0_2$: There is no significant relationship between digital marketing strategies and operational efficiency in SMEs of Port Harcourt Metropolis Rivers State, Nigeria. The result reveals a significant relationship (rho = .590, p = 0.000). We reject the null hypothesis and accept the alternative hypothesis: there is a significant relationship between digital marketing strategies and operational efficiency.

Discussion of Findings

The findings of this study reveal significant relationships between the adoption of disruptive technologies (e-delivery systems and digital marketing strategies) and the performance of SMEs in Port Harcourt Metropolis. These findings align with existing literature on the impact of technology adoption on business growth and operational efficiency, especially in the context of SMEs.

E-Delivery Adoption and Business Growth

The study established a significant positive relationship between e-delivery adoption and business growth (rho = 0.604, p = 0.000). This suggests that SMEs in Port Harcourt that adopt e-delivery systems experience better business growth, which includes expanded customer reach and improved service delivery. These findings support the work of Amadi and Edenkwo (2024), who emphasized the importance of integrating entrepreneurial strategies with technological innovations to enhance growth and competitive advantage. Additionally, Bayo and Red-well (2020) found that the adoption of technologies in Nigeria's manufacturing sectors improved productivity, a similar benefit observed in the SMEs of Port Harcourt. The evidence here highlights the potential of e-delivery to drive growth by improving customer engagement and reducing operational costs, allowing SMEs to scale effectively.

Digital Marketing Strategies and Operational Efficiency

The study also found a significant positive relationship between digital marketing strategies and operational efficiency (rho = 0.590, p = 0.000). This indicates that SMEs that integrate digital marketing strategies into their operations enjoy greater efficiency, likely due to enhanced marketing outreach and better resource management. These findings align with Nneji (2024), who discussed how disruptive technologies such as digital marketing are reshaping industries and improving operational workflows. The results suggest that SMEs in Port Harcourt can benefit from a more effective market reach, leading to higher sales and improved operational processes. Moreover, Mani et al. (2024) highlighted that SMEs adopting digital tools and strategies are better equipped to innovate and remain competitive, a view supported by the findings in this study.

Policy Implementations

To ensure the effective adoption of disruptive technologies in e-delivery systems and digital marketing strategies to enhance the performance of SMEs in Port Harcourt Metropolis, the following policy implementations are recommended:

i. The government should develop policies that promote digital infrastructure growth, including expanding broadband internet access and improving logistics networks to facilitate seamless e-delivery adoption among SMEs.
ii. Government should establish an SME Digital Support Center in Port Harcourt to provide hands-on guidance on digital marketing strategies and technology integration.
iii. Government should encourage microfinance institutions and banks to offer low-interest loans specifically tailored for SMEs investing in digital transformation.
iv. Government should develop a policy framework to standardize and regulate e-delivery operations in Port Harcourt, ensuring consumer protection, fair pricing, and reliability.
v. Government should encourage partnerships between SMEs and technology service providers, allowing small businesses to access affordable and efficient digital solutions.
vi. Government should launch nationwide and local campaigns to educate SMEs on the benefits of digital marketing and e-delivery adoption.

By implementing these policies, SMEs in Port Harcourt can successfully adopt disruptive technologies, enhance business growth, improve operational efficiency, and contribute significantly to the region's economic development.

Conclusion

This study has established that the adoption of e-delivery systems and digital marketing strategies plays a significant role in enhancing the performance of SMEs in Port Harcourt Metropolis, Rivers State, Nigeria. The findings confirm that e-delivery adoption positively influences business growth, while digital marketing strategies contribute to improved operational efficiency. In a rapidly evolving digital landscape, SMEs must integrate these disruptive technologies to stay competitive, streamline their operations, and achieve sustainable growth. The study highlights that the successful integration of e-delivery and digital marketing can drive business growth and operational efficiency for long-term performance of SMEs.

Recommendations

Based on the findings of this study, the following recommendations are proposed:

i. SMEs in Port Harcourt should prioritize the adoption of e-delivery systems to enhance business growth
ii. SMEs should adopt and refine their digital marketing strategies to enhance operational efficiency

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