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Assessing the Effectiveness of E-Commerce in Enhancing Market Access for Small and Medium-Sized Enterprises (SMEs) in Kabwe, Zambia

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ABSTRACT

This study assesses the effectiveness of e-commerce in enhancing market access for Small and Medium-Sized Enterprises (SMEs) in Kabwe, Zambia. The study was guided by three specific objectives: to examine the extent to which the adoption of e-commerce platforms influences market reach, to determine the effect of e-commerce utilization on operational efficiency, and to assess the influence of e-commerce strategies on revenue generation and business performance. A mixed research (qualitative and quantitative) approach was adopted, with 75 SMEs selected randomly. Primary data were collected using a questionnaire, and data analysis was performed using Megastat. The findings indicate that e-commerce adoption has a positive impact on market reach, with 64% of respondents agreeing that e-commerce platforms has increased their market reach. A chi-square test revealed a significant association between e-commerce adoption and increased market reach, as well as an increase in customer base (chi-square = 98.63, df = 8, p-value = 0.00). The study also found that e-commerce utilization has a significant positive impact on operational efficiency through reducing operational costs, improving customer service, and making it more easier tracking orders. The regression analysis confirms a moderate positive correlation between e-commerce platforms usage in business and operational efficiency (r = 0.562), with approximately 31.6% of the variation in operational efficiency explained by e-commerce platforms usage (r^2 = 0.316). The study further found that E-commerce strategies has improved revenue generation and competitiveness, with 70.7% of respondents reporting improved revenue generation and 74.7% reporting improved competitiveness. The statistical test confirms a significant relationship between e-commerce strategies and overall business performance (F = 56.20, p = 0.00). The study recommends for initiatives to support e-commerce adoption among SMEs in Kabwe, including training and capacity-building programs, digital infrastructure development, and awareness campaigns on the benefits of e-commerce.

1. Introduction

1.1 Background

The advent of e-commerce has revolutionized the way businesses operate, providing new opportunities for small and medium-sized enterprises (SMEs) to access new markets and improve their competitiveness. According to Humphrey and Schmitz (2020), e-commerce has become a vital tool for businesses to reach new customers, increase sales, and enhance their overall performance. In Zambia, SMEs play a crucial role in the economy, contributing significantly to employment and GDP. However, these businesses face numerous challenges, including limited access to markets, lack of technical expertise, and limited financial resources. As noted by Mlambo and Mboya (2022), e-commerce can help SMEs overcome these challenges and improve their competitiveness.

The use of e-commerce platforms has become increasingly popular among businesses, with many SMEs adopting digital technologies to improve their operations. According to a report by the Verma, (2024) e-commerce can help SMEs increase their sales, improve their customer relationships, and enhance their overall performance. In Zambia, the government has implemented various initiatives to promote the use of e-commerce among SMEs, including the development of e-commerce policies and

strategies. As observed by Chikwira et al. (2023), these initiatives have the potential to improve the competitiveness of SMEs in Zambia.

Despite the potential benefits of e-commerce, many SMEs in Zambia face significant challenges in adopting and using digital technologies. According to a study by Muyambiri and Banda (2021), the lack of technical expertise, limited access to finance, and inadequate infrastructure are major barriers to e-commerce adoption among SMEs in Zambia. Furthermore, the study found that many SMEs in Zambia are not aware of the benefits of e-commerce and lack the skills and knowledge to effectively use digital technologies. As noted by Kapferer (2020), building strong brands is critical for SMEs to succeed in e-commerce.

The effectiveness of e-commerce in enhancing market access for Zambian SMEs is a critical area of research that requires investigation. According to Gallant et al. (2025), e-commerce can help SMEs access new markets and improve their competitiveness. However, the report also notes that SMEs face significant challenges in using e-commerce platforms, including limited access to finance and inadequate infrastructure. As observed by Mwansa and Chisanga (2023), the use of e-commerce platforms can help SMEs in Zambia to reach new customers and improve their sales.

Therefore, the study aims to assess the effectiveness of e-commerce in enhancing market access for Zambian SMEs. The study will contribute to the existing body of knowledge on e-commerce and SMEs in Zambia and provide insights into the challenges and opportunities faced by SMEs in using digital technologies. The findings of the study will inform policymakers, practitioners, and researchers on the effectiveness of e-commerce in enhancing market access for Zambian SMEs and provide recommendations for improving the competitiveness of these businesses.

1.2 Statement of the Problem

The growth and development of Small and Medium-Sized Enterprises (SMEs) are crucial for Zambia's economic diversification and sustainable development. However, these businesses face significant challenges, including limited access to markets, lack of technical expertise, and limited financial resources. According to Musonda and Hapompwe (2023), e-commerce presents an opportunity for SMEs to overcome these challenges and improve their competitiveness. Despite the potential benefits of e-commerce, many SMEs in Zambia are yet to fully adopt digital technologies. As noted by Muyambiri and Banda (2021), the lack of technical expertise, limited access to finance, and inadequate infrastructure are major barriers to e-commerce adoption among SMEs in Zambia. The limited market access faced by Zambian SMEs is a significant constraint to their growth and development. According to Chisanga and Mwansa (2022), e-commerce can help SMEs access new markets and improve their competitiveness. However, the effectiveness of e-commerce in enhancing market access for Zambian SMEs is not well understood. As observed by Humphrey and Schmitz (2020), the use of e-commerce platforms can help SMEs overcome market access constraints and improve their overall performance. The Zambian government has implemented various initiatives to promote the use of e-commerce among SMEs, including the development of e-commerce policies and strategies. According to Ngwira (2024), these initiatives aim to improve the competitiveness of SMEs and promote economic growth. The lack of research on the effectiveness of e-commerce in enhancing market access for Zambian SMEs hinders the development of effective strategies to support these businesses. Tembo (2024), pointed out that there is a need for more research on the impact of e-commerce on SMEs in developing countries. This study aims to assess the effectiveness of e-commerce in enhancing market access for Zambian SMEs and provide insights into the challenges and opportunities faced by these businesses.

1.3.1 General Objective

The general objective of this study is to assess the effectiveness of e-commerce in enhancing market access for Zambian SMEs.

1.3.2 Specific Objectives

1. To examine the extent to which the adoption of e-commerce platforms influences market reach for SMEs in Kabwe.
2. To determine the effect of e-commerce utilization on the operational efficiency of SMEs in Kabwe.
3. To assess the influence of e-commerce strategies on revenue generation and business performance of SMEs in Kabwe.

1.4 Research questions

1. To what extent does the adoption of e-commerce platforms influence market reach for SMEs in Kabwe?
2. What is the effect of e-commerce utilization on the operational efficiency of SMEs in Kabwe?
3. How do the e-commerce strategies influence the revenue generation and overall business performance of SMEs in Kabwe?

1.5.1 Theoretical Framework

The study was guided by two complementary theoretical frameworks, the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) theory. According to Davis (1989) as cited in Silva (2015) the TAM theory posits that perceived usefulness and perceived ease of use are key factors in determining the adoption of technology. The RBV theory, on the other hand, suggests that firms with unique resources and capabilities can achieve sustainable competitive advantage (Barney, 1991).

According to TAM developed by Fred Davis in 1989, two primary beliefs determine whether a potential user will adopt new system, perceived usefulness (PU) and Perceived Ease of Use (PEOU). Perceive usefulness refers to the degree to which an individual believes that using a particular system would enhance their job performance, while Perceived Ease of Use is defined as the degree to which an individual believes that using a particular system would be free from physical or mental effort (Davis 1989). These perceptions influence a user's attitude towards using the technology, predicting their behavioral intention to use it and actual behavior.

A comprehensive understanding of the phenomenon offered by the combined application of TAM and RBV. While RBV evaluates how this adopted technology translates into a concrete and sustainable competitive advantage and superior business performance for the SME, TAM identifies the perceptual factors that drove SME owners' and managers' initial adoption of e-commerce technology (Davis, 1989; Barney, 1991). The integrated framework connects organizational-level results to individual adoption of technology.

1.5.2 Conceptual Framework

The relationship between variables in this study can be understood through the lens of how e-commerce adoption, utilization and strategies impact various aspect of Smal and medium enterprises (SMEs) in Kabwe, Zambia. The adoption of e-commerce is expected to positively or negative influence market reach, operational efficiency and overall performance of business for SMEs. A conceptual framework for this study is outlined in figure 1 below.

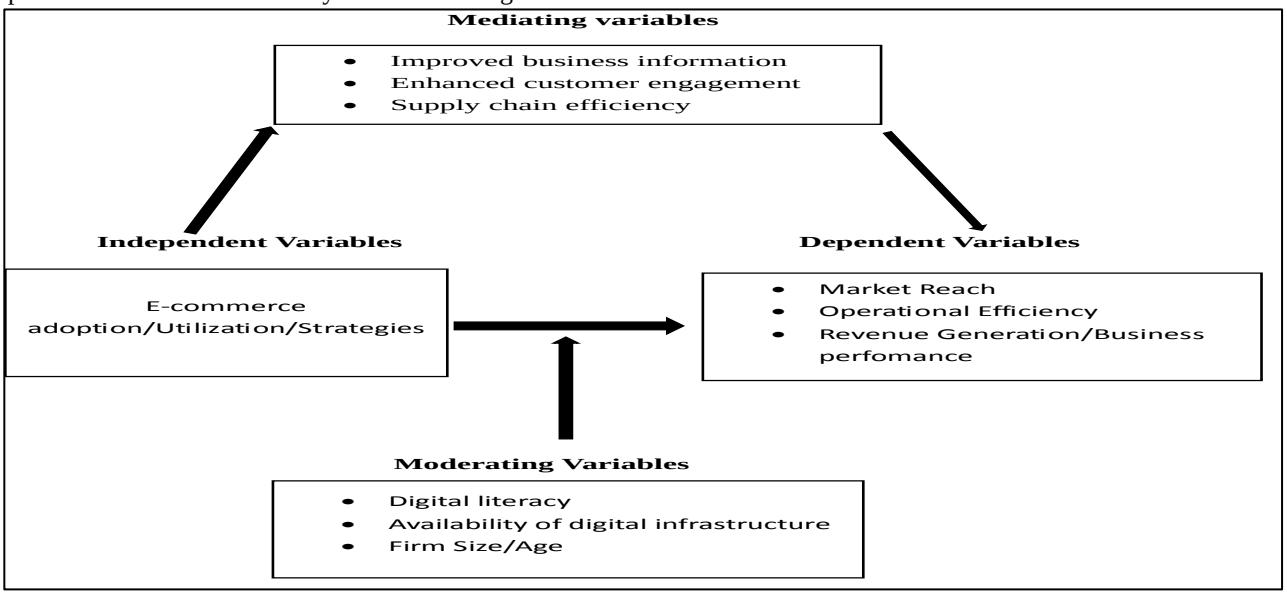

Figure 1 Conceptual Framework

1.6 Significance of the Study

There are multiple reasons why the study on how well e-commerce works to improve market access for Zambian SMEs is important. The first benefit is that it adds to the body of knowledge already available on SMEs and e-commerce in Zambia. The study's conclusions informed researchers, practitioners, and policymakers about how well e-commerce works would give Zambian SMEs access to new markets. The research additionally aid in the establishment of a strong e-commerce sector in Zambia, through determining the opportunities and difficulties SMEs encounter when utilizing digital technologies, the study draw attention to areas that need improvement. The results also shaded light on the contribution of e-commerce to Zambia's economic development and growth. The study helped SMEs by offering useful advice on how to use e-commerce to increase their competitiveness and market access. The study's suggestions helped policymakers because they guided the creation of focused policies and tactics. Researchers will gain from the study's addition to the corpus of information already available on SMEs and e-commerce in Zambia. The findings also helped the nation's goal of developing a digitally enabled economy. The study assisted stakeholders in formulating plans to foster the expansion and advancement of these companies.

2. Literature Review

2.1 E-commerce Adoption Among SMEs in Enhancing Market Access

The adoption of e-Commerce in SMEs has changed the perspective of production and innovation in the past few years. Although with progress, some barriers stop the adoption process of e-commerce. These barriers also create hurdles in adopting technological factors, information and communication technologies, and their utilization in firms or enterprises (Costa & Castro 2021). Hossain et al. (2025) identified the barriers include, lack of awareness about the use of information technology, the inadequacy of ICT-capable and literate managers and workers, insufficient financial resources, and the perceived lack of relevance or value-added of ICTs to their business. The adoption of e-commerce depends on research and development activity and productivity improvement (Ariansyah et al. 2021).

Rahayu and Day (2017) conducted a study to provide an overview of e-commerce adoption by SMEs in Indonesia and found that majority of them are still at an early stage in their adoption of e-commerce. Yadav et al. (2022) noted that SMEs used of e-commerce for marketing, purchasing and procurement activities. Abtahi (2023) pointed out that extending market reach increased sales, and improved external communication which led to improved company image, improved speed of processing, as well as increased employee productivity are reported. Musonda and Hapompwe (2023) concluded that SMEs at the higher level of e-commerce adoption experience greater e-commerce benefits than those at other levels of adoption.

Sharma (2023) examines the positive impacts of adoption of e-commerce on SMEs growth and found that e-commerce has opened up novel markets, augmented revenue, streamlined operations, and widened customer reach for small and medium-sized

enterprises. He further stated that by embracing e-commerce, small and medium-sized enterprises have been able to compete on a more level playing field with larger and more established enterprises (Sharma 2023). Sari (2022 found that Indonesian Small and Medium sized Enterprises (SMEs) were not proficient in using B2B e-commerce to its full potential. Amornkitvikai et al. (2021) confirmed that there is a shortage of skilled workers among SMEs, a key issue in moving forward with using information technology in business.

Quaye et al. (2024) investigated the technology adoption, competitiveness and new market access among SMEs in Ghana, the study found that Close to 60% of the beneficiary SMEs had adopted less sophisticated technologies such as social media, mobile banking and e-commerce as compared to 50% adoption among non-beneficiaries. Logit regression results showed that the most significant factors positively influencing technology adoption were Education, Marketing Skills, Human Resource Skills, Gender, Market Opportunities and Financial Improvement (Quaye et al. 2024). Abtahi (2023) revealed that increased efficiency, cost savings, and improved customer experience are the primary drivers for e-commerce adoption.

Similarly, Anabila et al. (2024) showed that adopting e-commerce significantly improves SMEs' performance with firm agility moderate relationship between e-commerce adoption and business performance. Morepje et al. (2024) indicated that e-commerce platforms notably improve market access, leading to better prices and reduced post-harvest losses. Wirdiyanti (2023) found that the performance improvements caused by e-commerce adoption encouraged better inclusion of MSMEs in the financial system through access and use of more diverse financial products and services. However, Loo et al. (2025) found the following challenges such as digital literacy and infrastructure deficits persist. E-commerce platforms positively influence sustainable agriculture in SSA by improving market access and supporting sustainable practices.

2.2 The Impact of E-commerce on Operational Efficiency on SMEs

Sharma (2024) explored the impact of e-commerce on operational cost efficiency in modern businesses and found that improved inventory control with real-time tracking. Jiang (2023) found that E-commence improved operational efficiency through lowering transportation costs via direct-to-consumer models, and significant savings on physical retail space expenses, including digital marketing strategies offer cost-effective advertising solutions. The concluded that Strategic investments and continuous innovation are crucial for maximizing e-commerce benefits. Al-Bakri et al. (2010) noted that adoption of Business-to-Business (B2B) systems by enterprises can be expected to improve the quality and availability of information, reduce inappropriate behaviour, streamline the supply chain and improve service

Hussain (2022) evaluated the use of the e-commerce and influence of entrepreneurial competencies on the performance of small and medium enterprises (SMEs) and the results indicated the association between the use of e-commerce and firm performance is positively significant. Yang et al. (2016) found that e-commerce as a mediating variable recorded a positive association between technological readiness, adoption cost, and firm performance. However, entrepreneurial competencies do not appear as significant between the use of e-commerce and manufacturing SMEs' performance.

Santos-Jaén et al. (2023) carried out a study to comprehensive analysis of how e-commerce affects the performance of small and medium-sized enterprises (SMEs) in Mexico. The results revealed that incorporating e-commerce and digitalizing business processes improved operational efficiency significantly and contributed to corporate performance. Edokobi et al. (2024) showed that online sales and digital marketing have a significant positive impact on operational efficiency, with coefficients of 0.28 and 0.33, respectively. Pelekamoyo (2022) found that most households and SMEs in Zambia lack the necessary applications and software to use for business and competitive intelligence knowledge management.

2.3 E-commerce Strategies on Business Performance.

Cassia and Magno (2022) examined the relationship between a firm's information technology, international marketing and export operations capabilities and its cross-border e-commerce strategic and financial performance and the results highlight the mixed effects of information technology, international marketing and export operations capabilities on both e-commerce strategic and financial performance. Meanwhile, the use of third-party e-commerce platforms reduces the effect of exporters' information technology capabilities on their e-commerce financial performance (Cassia & Magno (2022).

Celestin et al (2024) assessed how e-commerce platforms like Amazon, Alibaba, and Jumia empower SMEs to expand their market reach and increase operational efficiency and the results indicated that SMEs utilizing e-commerce experienced revenue growth of up to 30% in emerging markets and 15% in developed markets. Hendrawan et al. (2018) revealed that adoption of e-commerce increased number of sales and number of relations. and statistical analysis found a positive effect of e-commerce on performance SMEs. Wirdiyanti et al. (2023) found that brand recognition and customer awareness improve performance significantly.

Parvin et al (2022) examine the impact of adopting an e-commerce technology on its customers' and agents' satisfaction and found a positive impacts on both customers and service providers, suggest that using e-commerce not only makes an SME agent more efficient but also accelerates an SME business transaction, which ultimately helps to achieve sustainable economic growth. Alzahrani (2019) confirms that e-commerce adoption influences SMEs strategies, with many participants claiming that the introduction of e-commerce in the Saudi market has changed their businesses' plans and strategies. Ramanathan et al. (2012) showed that operations and marketing aspects of e-commerce have strong impacts on performance of SMEs.

Mwape and Sichula (2022) conducted a study on the relationship between e-commerce usage and market expansion for SMEs in Zambia and found that e-commerce usage had a positive impact on market expansion, enabling SMEs to reach new customers and increase their sales. Chisanga and Mwansa (2022) found that e-commerce had a positive impact on market expansion, enabling SMEs to reach new markets and increase their customer base. Musonda and Hapompwe (2023) found that e-commerce usage had

a positive impact on market expansion, improving SMEs' sales and revenue. Musonda and Hapompwe concluded that e-commerce is a critical tool for SMEs to improve their market reach and competitiveness.

3. Methodology

3.1 Research design

This study used mixed-methods approach, combining both quantitative and qualitative methods to achieve a comprehensive understanding of the effectiveness and challenges of e-commerce platforms in facilitating market access for Small and Medium-sized Enterprises (SMEs) in Zambia. The quantitative approach involved a survey of a representative sample of SMEs in kabwe, using a structured questionnaire to collect data on their e-commerce adoption, market reach, operational efficiency and overall business performance. While qualitative used interviews and focused groups.

3.2. Target population

The target population of this study was few SMEs in Kabwe district, specifically those in urban because of the easy access to these SMEs.

3.3 Sampling design

To achieve the research objectives, a mixed-methods approach was used, combining both probability and non-probability sampling designs. Stratified Random Sampling was used to select a representative sample of SMEs in Kabwe District, Zambia, with SMEs stratified by sector and size. Simple Random Sampling selected random samples of SME owners/managers, employees, and stakeholders for surveys, interviews, and focus group discussions. Purposive Sampling selected SMEs with significant e-commerce adoption impact, while Snowball Sampling selected additional SMEs and stakeholders through referrals, boosting response rates and ensuring high-quality responses from willing participants.

3.4 Sample size determination

The sampling size were generalized by using this formula Taro Yamane 1963 as 75 SME were selected from Kabwe town.

3.5 Data collection methods

This study collected primary data for analysis. Primary data was collected using self-administered questionnaires and focused groups. To collect primary data a semi-structured questionnaire with both close ended and open-ended questions were used.

3.6 Data analysis

Data analysis involved organizing the raw data in order to make sense out of it. Raw data on its own is useless unless it is organized. This study used both qualitative and quantitative data. The quantitative data collected was first checked, cleaned and finally coded. The missing data was arrived at by using averages for each variable. After the quantitative data was coded properly, it was entered into software for analysis called Megastat. The purpose was to come up with descriptive statistics. Some statistics were later manipulated with the use of Micro Soft Excel to come up with graphs and figures of the researcher's choice. The statistics was also made into tables so that various graphical presentations were made. Once the statistics were used to make tables, graphs and figures, they allowed objectivity with regard to interpretation, valid conclusion and recommendations. The information collected from Key Informants using in-depth interviews were analysed qualitatively based on the themes and contents

4. Findings

4.1 Demographic Characteristics of the Respondents

4.1.1 Type of Business

The data in figure 2 reveals that the majority of businesses (42.7%) operate in the retail sector, followed by manufacturing with 22.7%, agriculture with 17.3%, and services (12%). A small percentage of 5.3% of businesses fall under the "other" category. This suggests that the retail sector is the most prominent among the respondents, while the service sector is relatively underrepresented. The data provides a snapshot of the business landscape, highlighting the diversity of industries and the dominance of retail in the sample.

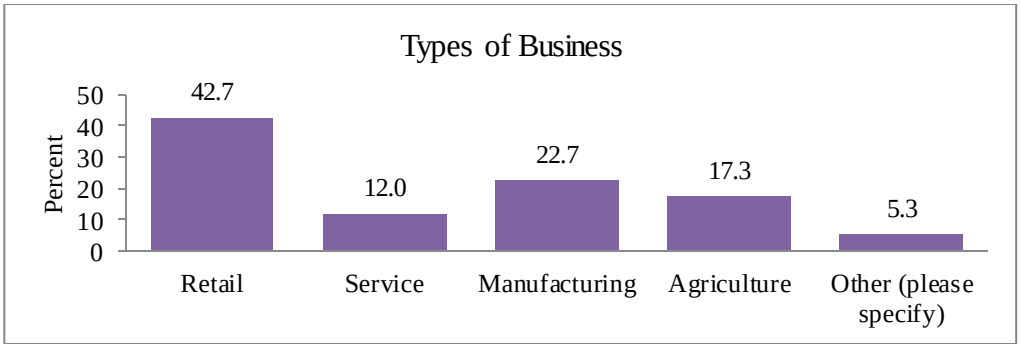

Figure 2 Business Type

4.1.2 How Long Have You Been in Business

The data in figure 3 below shows that 60% of businesses have been in operation for 4-10 years, with 30.7% having been in business for 4-6 years and 29.3% for 7-10 years. A significant proportion (16%) have been in business for more than 10 years, indicating a level of stability and experience. However, 24% are relatively new, with 6.7% having been in business for less than 1 year and 17.3% for 1-3 years. This suggests a mix of established and emerging businesses in the sample.

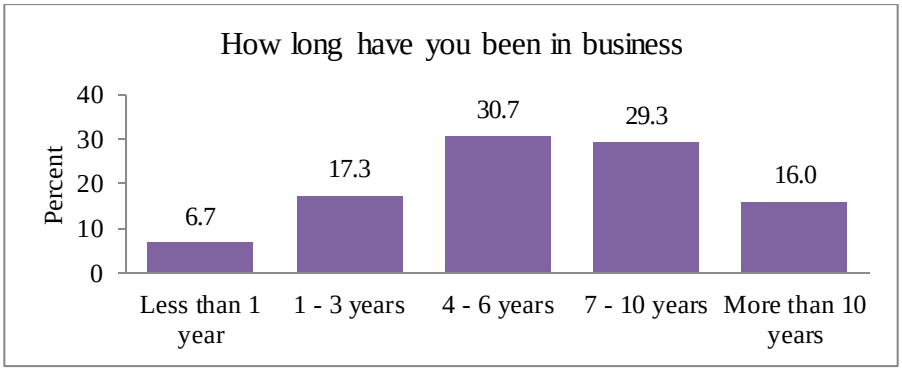

Figure 3 Business Work Experience

4.1.3 Have You Used E-Commerce Platforms For Your Business

The data in figure 4 below shows that a significant majority of 81% of respondents have used e-commerce platforms for their business, indicating a strong adoption of digital sales channels. In contrast, 19% have not used e-commerce platforms, suggesting opportunities for growth and development in this area. Overall, the findings highlight the importance of e-commerce in the business operations of the respondents.

Figure 4 Use of ecommerce

4.1.4 Which E-Commerce Platform(S) Do You Use

The data in figure 4 below reveals that respondents use a variety of e-commerce platforms, with Facebook and WhatsApp being the most popular 18.7% each, followed by 10% combinations of Facebook & WhatsApp, 10.7% use TikTalk & Facebook, and 16% use Facebook, WhatsApp & TikTalk. TikTalk was used by 6.7% of respondents, while 13.3% do not use any of these platforms. A small percentage 5.3% use other platforms not listed. Notably, online marketplaces like Jumia and Kilimall are not used by any respondents, suggesting a preference for social media-based e-commerce.

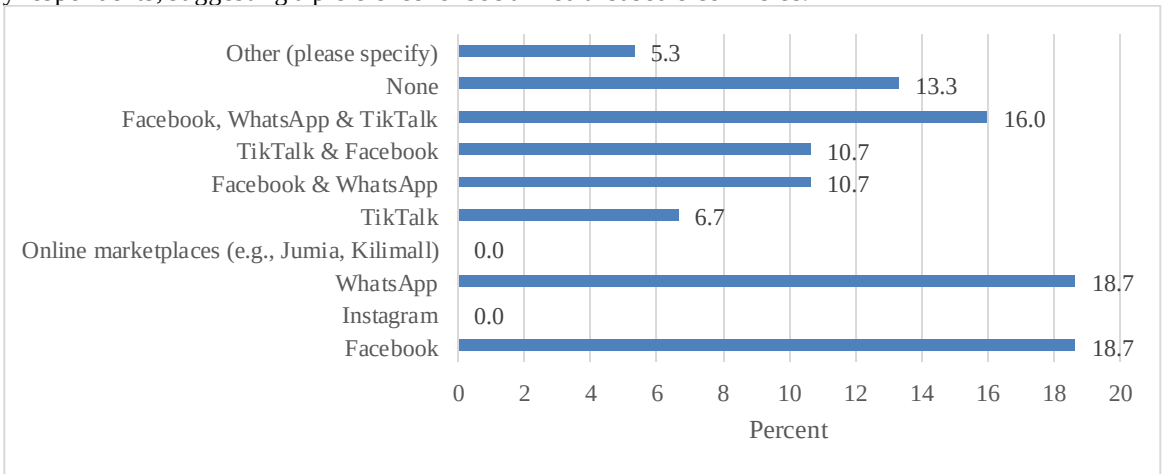

Figure 4 Source: Research Data, 2025

4.2 To Examine the Extent to which the Adoption of E-Commerce Platforms Influences Market Reach for SMEs in Kabwe.

4.2.1 To what extent do you agree that e-commerce platforms have increased your market reach?

The findings in figure 5 below, shows that the majority of respondents (64%) believe that e-commerce platforms have increased their market reach, with 25.3% strongly agreeing and 38.7% agreeing. A smaller percentage of 10.7% indicated neutral, while 25.3% disagree, with 13.3% disagreeing and 12% strongly disagreeing. This suggests that most respondents perceive e-commerce platforms as a valuable tool for expanding their customer base, although a notable proportion remain skeptical about their impact.

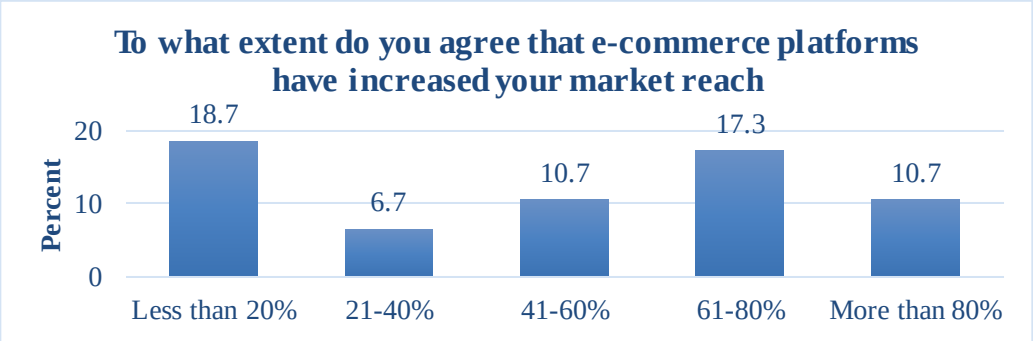

Figure 5 Source: Research Data, 2025

4.2.2 How often do you use e-commerce platforms to market your products

The data in figure 6 below reveals that 64% of respondents regularly use e-commerce platforms to market their products, with 34.7% using them daily and 29.3% using them weekly. A small percentage (5.3%) use them monthly, while 10.7% rarely use them. Notably, 20% of respondents never use e-commerce platforms for marketing, indicating opportunities for growth and development in this area. Overall, the findings suggest that most respondents leverage e-commerce platforms as a regular marketing tool.

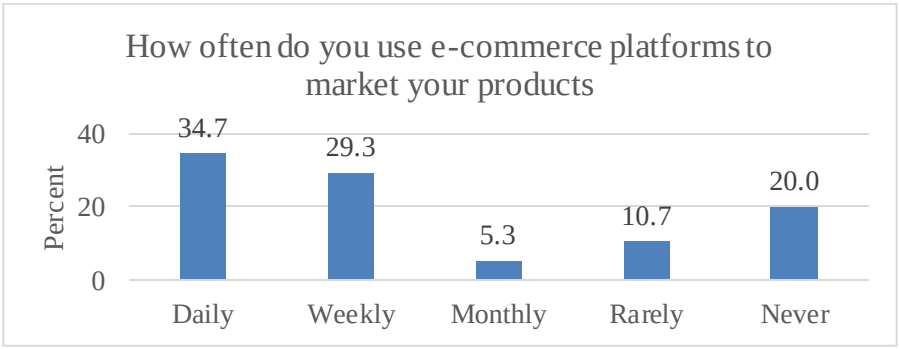

Figure 6 Source: Research Data, 2025

4.2.3 The Percentage of Sales that Comes from E-commerce Platforms

The data reveals that 36% of respondents do not generate any sales through e-commerce platforms, suggesting a substantial gap in online market engagement. Among those who do utilize e-commerce, the majority (18.7%) generate less than 20% of their sales through these channels, indicating a relatively low reliance on online sales. A smaller percentage of respondents (10.7%) report that 41-60% of their sales come from e-commerce, while 17.3% indicate that 61-80% of their sales are generated online. Notably, 10.7% of respondents attribute more than 80% of their sales to e-commerce platforms, highlighting a strong online presence. Overall, the findings suggest that while some respondents have successfully integrated e-commerce into their sales strategies, many others have limited or no online sales presence.

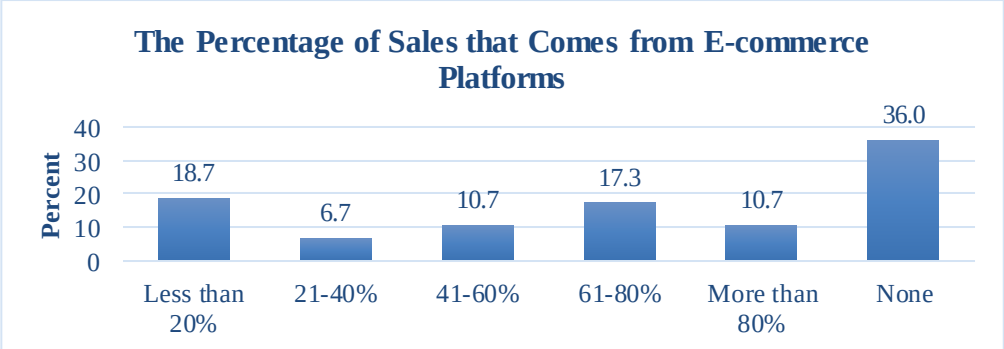

Figure 7 Source: Research Data, 2025

4.2.4 Have you experienced an increase in customer base since adopting e-commerce platforms

The findings in figure 8 below shows that, over half of the respondents (53.3%) reported an increase in their customer base after adopting e-commerce platforms, indicating a positive impact of online sales channels on business growth. In contrast, 18.7% of respondents did not experience an expansion in their customer base, suggesting that e-commerce adoption may not have been effective for these businesses. Additionally, 28% of respondents were unsure about the impact of e-commerce on their customer base, highlighting a potential need for more data or analysis to assess the effectiveness of their online sales strategies. Overall, the findings suggest that e-commerce platforms have been a valuable tool for many businesses, driving growth and expansion, but may not be a guarantee of success for all.

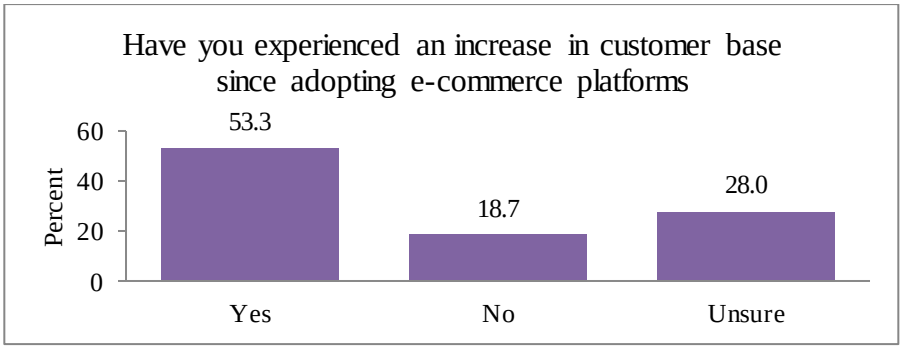

Figure 8 Source: Research Data, 2025

4.2.5 To what extent do you agree that e-commerce platforms have improved your business's visibility

The data in figure 9 below shows that 27% of respondents agree that e-commerce platforms have improved their business's visibility, while a significant 73% do not see an improvement. This suggests that nearly three-quarters of respondents have not experienced enhanced visibility through e-commerce platforms, highlighting a potential area for improvement or investment in online marketing strategies.

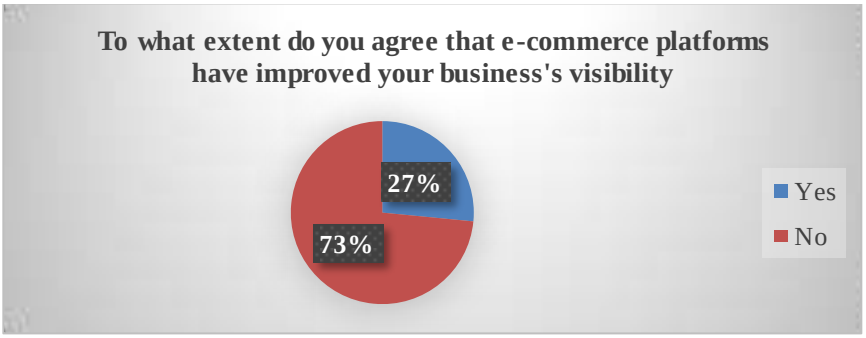

Figure 9 Source: Research Data, 2025

4.2.6 A Chi-square Test of e-commerce adoption and increased market reach

The data in table 1 below reveals a significant association between adopting e-commerce platforms and increased market reach, as well as an increase in customer base (chi-square = 98.63, df = 8, p-value = 0.00). Among respondents who strongly agree that e-commerce platforms have increased their market reach, all 24 have experienced an increase in customer base. Similarly, among those who agree, 16 have seen an increase, while 8 are unsure. The majority of respondents who disagree or strongly disagree that e-commerce platforms have increased their market reach have not experienced an increase in customer base. The statistically significant p-value (0.00) indicates a strong association between e-commerce adoption and increased market reach, as well as customer base growth.

Table 1: Statistically Significant Test on e Commerce Adoption

To what extent do you agree that e-commerce platforms have increased your market	Have you experienced an increase in customer base since adopting e-commerce platforms			
	Yes	No	Unsure	Total
Strongly agree	24	0	0	24
Agree	16	0	8	24
Neutral	0	0	8	8
Disagree	0	0	5	10
Sstongly Disagree	0	9	0	9
Total	40	14	21	75
	98.63	chi-square		
	8	df		
	0.00	p-value		

Source: Research Data, 2025

4.3 The Effect of E-Commerce Utilization on the Operational Efficiency of SMEs In Kabwe.

4.3.1 Do you agree that e-commerce utilization has improved your operational efficiency

The data findings in figure 10 below revealed that 76% of respondents agree or strongly agree that e-commerce utilization has improved their operational efficiency, with 34.7% strongly agreeing and 41.3% agreeing. A small percentage (12%) remain neutral, while 12% disagree or strongly disagree. The findings suggest that e-commerce adoption has had a positive impact on operational efficiency for most businesses, streamlining processes and enhancing productivity.

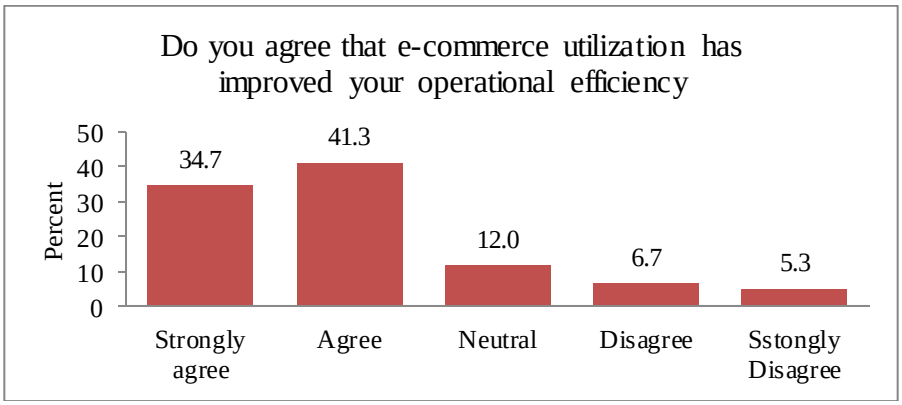

Figure 10 Source: Research Data, 2025

4.3.2 How has e-commerce utilization affected your business's costs

The data shows that 82.7% of respondents report that e-commerce utilization has led to decreased costs for their business, indicating significant cost savings. A small percentage (5.3%) experienced increased costs, while 12% saw no impact. The findings suggest that e-commerce adoption has been a cost-effective strategy for most businesses, likely due to reduced overheads, improved logistics, or other efficiencies.

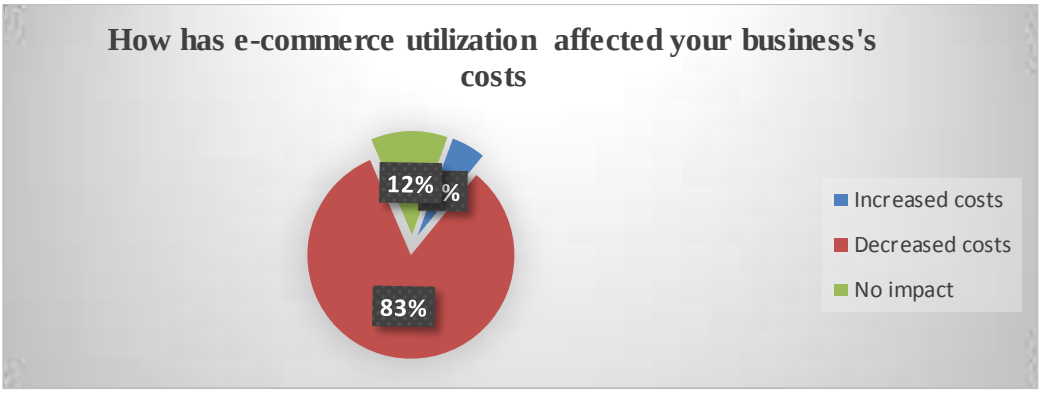

Figure 11Source: Research Data, 2025

4.3.3 Do you use e-commerce platforms to manage your inventory

The majority of respondents (72%) do not use e-commerce platforms to manage their inventory, indicating a significant gap in leveraging technology for inventory management. Only 28% of respondents utilize e-commerce platforms for this purpose, suggesting opportunities for businesses to explore digital tools to streamline inventory management and potentially improve efficiency.

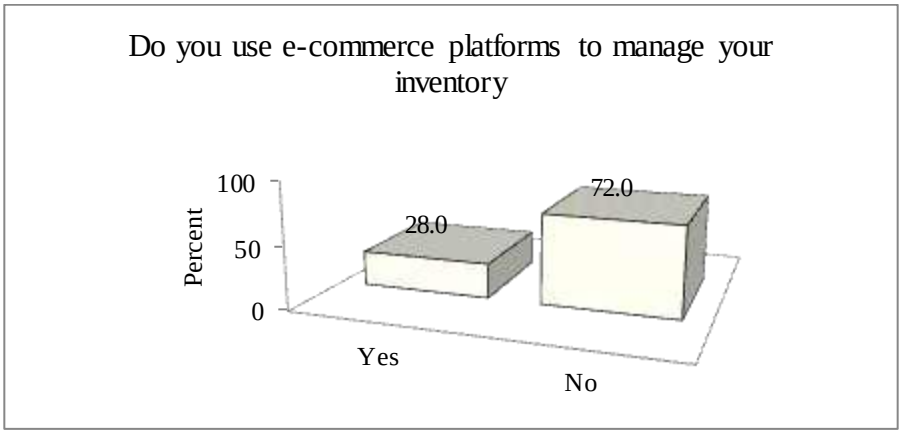

Figure 12 Source: Research Data, 2025

4.3.4 How easy is it to track orders and shipments using e-commerce platforms

The results in figure 13 below shows that a total of 61.4% of respondents find it easy or very easy to track orders and shipments using e-commerce platforms, indicating a relatively smooth experience with order management. However, 26.6% report difficulties, highlighting areas for improvement in platform usability. The findings suggest that while many businesses have a positive experience with tracking orders, there's room for e-commerce platforms to enhance their tracking features and support.

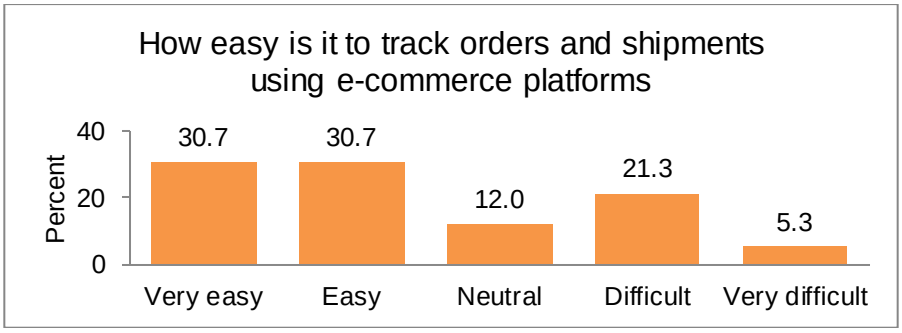

Figure 13 Source Research Data, 2025

4.3.5 Have you experienced a reduction in operational costs since adopting e-commerce platforms

The results revealed that significant majority of respondents 81% report a reduction in operational costs since adopting e-commerce platforms, indicating substantial cost savings. In contrast, 19% have not experienced a decrease in operational costs, suggesting that e-commerce adoption may not automatically guarantee cost reductions for all businesses.

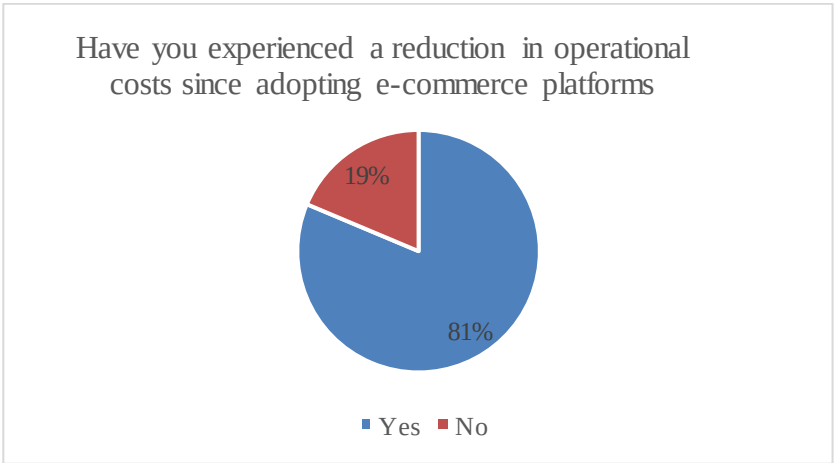

Figure 14 Source Research Data, 2025

4.3.6 To what extent do you agree that e-commerce platforms have improved your customer service

The data in figure 15 shows that a significant majority of respondents (76%) agree or strongly agree that e-commerce platforms have improved their customer service, with 24% strongly agreeing and 52% agreeing. This suggests that e-commerce adoption has enabled businesses to enhance their customer support and overall experience. In contrast, 18.7% disagree or strongly disagree, indicating areas for improvement in leveraging e-commerce platforms for customer service.

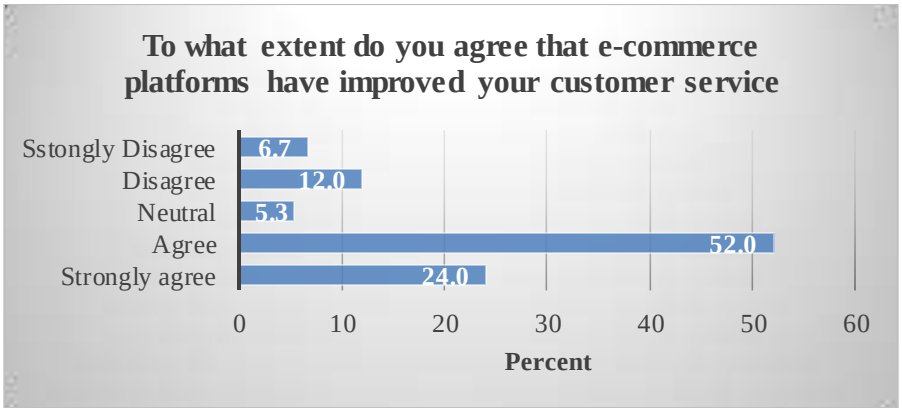

Figure 15 Source Research Data, 2025

4.3.7 The Regression Analysis test of Significance

The regression analysis reveals a moderate positive correlation between e-commerce platforms usage in business and operational efficiency, with a correlation coefficient (r) of 0.562. The coefficient of determination (r^2) is 0.316, indicating that approximately 31.6% of the variation in operational efficiency can be explained by the usage of e-commerce platforms. The ANOVA test shows a statistically significant relationship between e-commerce platforms usage and operational efficiency, with an F-value of 33.75 and a p-value of 0.00. The regression output indicates that for every one-unit increase in e-commerce platforms usage, operational efficiency improves by 1.5867 units. The 95% confidence interval for this coefficient is (1.0423, 2.1310), suggesting a significant positive impact. The intercept is not statistically significant (p-value = 0.5916), indicating that when e-commerce platforms usage is zero, operational efficiency is not significantly different from zero. Overall, the analysis suggests that e-commerce platforms usage has a significant positive impact on operational efficiency, and the model explains a moderate proportion of the variation in operational efficiency.

Table 2: Statistical Test for E Commerce on Efficiency

Regression Analysis

r^2	0.316	n	75	
r	0.562	k	1	
Std. Error	0.922	Dep. Var.	**Has E-commerce Utilizati Improved your Operation Efficiency**	

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Regression	28.6655	1	28.6655	33.75	0.00
Residual	62.0012	73	0.8493		
Total	90.6667	74			

Regression output

					confidence interval	
variables	*coefficients*	*std. error*	*t (df=73)*	*p-value*	*95% lower*	*95% upper*
Intercept	0.1838	0.3411	0.539	.5916	-0.4960	0.8637
E-commerce platforms Usage in Business	1.5867	0.2731	5.810	0.00	1.0423	2.1310

Source Research Data, 2025

4.4 To assess the influence of e-commerce strategies on revenue generation and business performance of SMEs in Kabwe

4.4.1 To what extent do you agree that e-commerce strategies have improved your revenue generation

A significant majority of respondents (70.7%) agree or strongly agree that e-commerce strategies have improved their revenue generation, with 24% strongly agreeing and 46.7% agreeing. This suggests that e-commerce adoption has had a positive impact on businesses' financial performance. However, 18.7% disagree or strongly disagree, indicating that e-commerce strategies have not been effective for all businesses in improving revenue generation

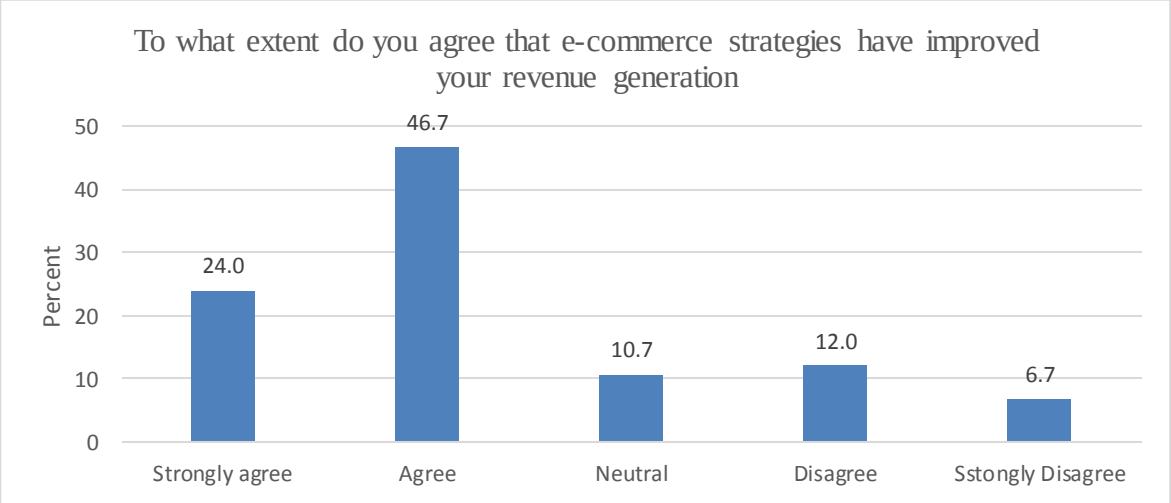

Figure 16 Source Research Data, 2025

4.4.2 What percentage of your revenue comes from online sales

The result shows 62.7% of respondents generate a significant portion of their revenue from online sales, with 38.7% reporting 21-40% of revenue from online sales and 24% reporting less than 20%. A smaller proportion (18.7%) report no online sales revenue.

Notably, 6.7% of respondents generate more than 80% of their revenue from online sales, indicating a strong online presence. Overall, the data suggests that online sales contribute substantially to the revenue of many businesses.

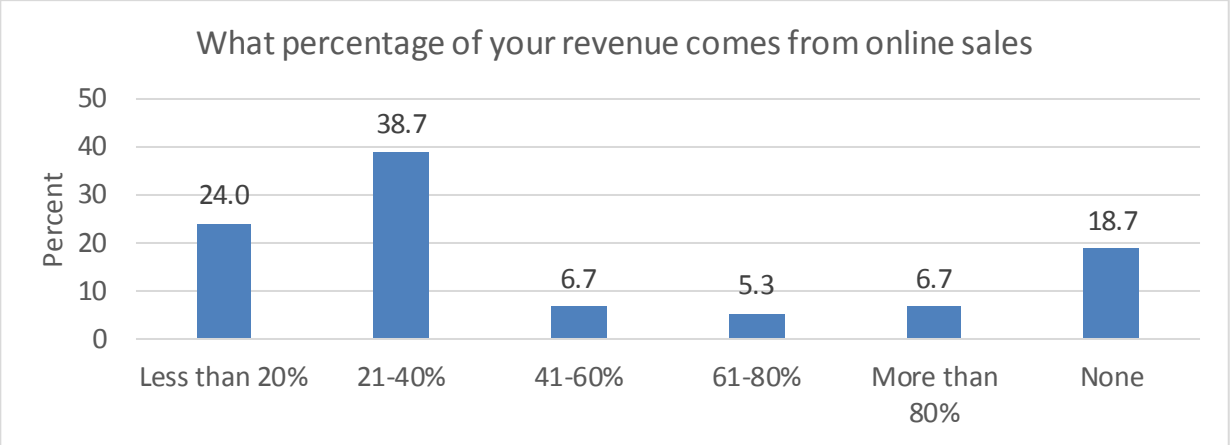

Figure 17 Source Research Data, 2025

4.4.3 Have you experienced an increase in sales since implementing e-commerce strategies

The data shows that 70.7% of respondentsreport an increase in sales since implementing e-commerce strategies, indicating a positive impact on business performance. However, 29.3% have not experienced a sales increase, suggesting that e-commerce strategies may not be equally effective for all businesses or may require further optimization.

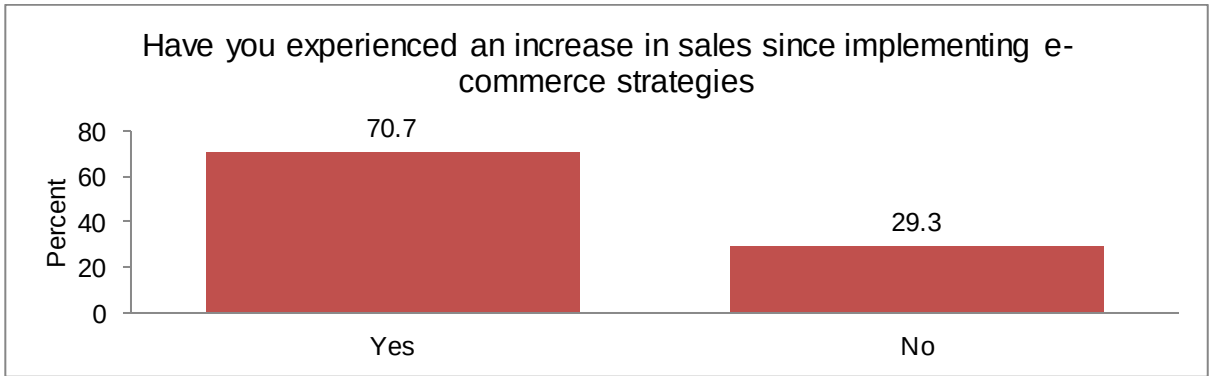

Figure 18 Source Research Data, 2025

4.4.4 To what extent do you agree that e-commerce platforms have improved your business's competitiveness

The results in figure revealed that the significant majority of respondents (74.7%) agree or strongly agree that e-commerce platforms have improved their business's competitiveness, with 24% strongly agreeing and 50.7% agreeing. This suggests that e-commerce adoption has helped businesses gain a competitive edge. A small proportion (13.3%) disagree, indicating some businesses may not have seen improvements in competitiveness, while 12% remain neutral.

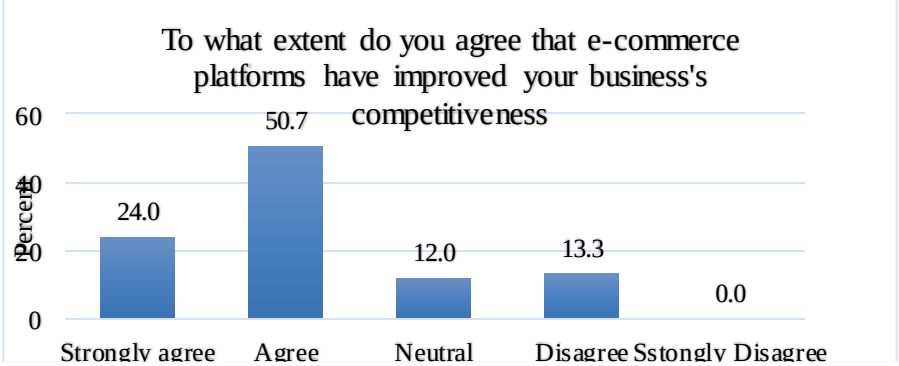

Figure 19 Source Research Data, 2025

4.4.5 To what extent do you agree that e-commerce strategies have improved your business's overall performance

A majority of respondents (65.4%) agree or strongly agree that e-commerce strategies have improved their business's overall performance, with 6.7% strongly agreeing and 58.7% agreeing. This suggests that e-commerce adoption has had a positive impact

on business outcomes. However, 18.7% disagree or strongly disagree, indicating some businesses may not have seen improvements, while 16% remain neutral.

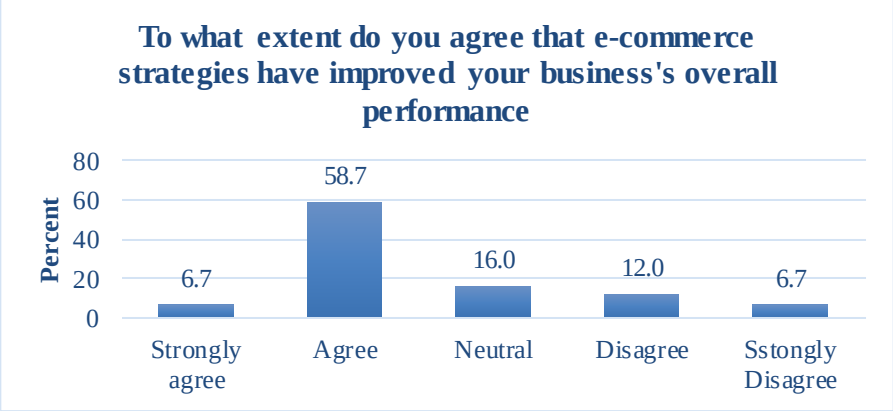

Figure 20 Source Research Data, 2025

4.4.6 Regression Analysis Test for Significant

The regression analysis reveals a significant positive relationship between the extent to which e-commerce strategies have improved revenue generation and overall business performance (r = 0.660, r^2 = 0.435, n = 75). The ANOVA test confirms the significance of the regression model (F = 56.20, p = 1.24E-10). The coefficient for revenue generation improvement (0.5776) indicates that for every unit increase in revenue generation improvement, overall business performance improvement increases by approximately 0.578 units. The 95% confidence interval (0.4241, 0.7312) suggests this relationship is statistically significant. Overall, the model explains about 43.5% of the variation in overall business performance, indicating a moderate to strong relationship between the variables

Table 3: Statistical Test on eCommerce Strategies Effectiveness

Regression Analysis

	r^2	0.435	n	75
	r	0.660	k	1
	Std. Error	0.770	Dep. Var.	**To what extent do you that e-commerce strategies improved your busi overall performance**

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Regression	33.3492	1	33.3492	56.20	0.00
Residual	43.3175	73	0.5934		
Total	76.6667	74			

Regression output

variables	*coefficients*	*std. error*	*t (df=73)*	*p-value*	*confidence interva 95% lower*	*95% up*
Intercept	1.2009	0.1987	6.042	0.00	0.8048	1.5970
Has E-commerce Strategies improved Revenue Generation	0.5776	0.0771	7.497	0.00	0.4241	0.7312

4.5 Discussion of findings

4.5.1 Examine the Extent to which the Adoption of E-Commerce Platforms Influences Market Reach for SMEs in Kabwe

The findings of the study reveal that e-commerce platforms have a significant impact on the market reach of SMEs in Kabwe. The majority of respondents (64%) believe that e-commerce platforms have increased their market reach, with 25.3% strongly agreeing and 38.7% agreeing. This is consistent with existing literature, which suggests that e-commerce adoption can lead to increased market reach and sales growth for SMEs (Rahayu & Day, 2017; Sharma, 2023).

The study also found that 64% of respondents regularly use e-commerce platforms to market their products, with 34.7% using them daily and 29.3% using them weekly. This is consistent with existing literature, which suggests that e-commerce adoption can lead to improved marketing and sales outcomes for SMEs (Ariansyah et al., 2021; Costa & Castro, 2021).

However, the study also found that 36% of respondents do not generate any sales through e-commerce platforms, suggesting a substantial gap in online market engagement. This is consistent with existing literature, which suggests that SMEs face challenges

in adopting and implementing e-commerce technologies (Hossain et al., 2025; Loo et al., 2025). The study also found that over half of the respondents (53.3%) reported an increase in their customer base after adopting e-commerce platforms, indicating a positive impact of online sales channels on business growth. This is consistent with existing literature, which suggests that e-commerce adoption can lead to increased customer base and sales growth for SMEs (Abtahi, 2023; Wirdiyanti, 2023).

The chi-square test results indicate a significant association between adopting e-commerce platforms and increased market reach, as well as an increase in customer base (chi-square = 98.63, df = 8, p-value = 0.00). This is consistent with existing literature, which suggests that e-commerce adoption can lead to improved business outcomes for SMEs (Anabila et al., 2024; Quaye et al., 2024). Overall, the findings of the study suggest that e-commerce platforms have a significant impact on the market reach of SMEs in Kabwe, and that SMEs that adopt e-commerce technologies are likely to experience increased sales and revenue, improved customer relationships, and enhanced competitiveness in the market.

4.5.2 Effect of E-Commerce Utilization on the Operational Efficiency of SMEs In Kabwe.

The findings of the study reveal that e-commerce utilization has a significant impact on the operational efficiency of SMEs in Kabwe. The majority of respondents (76%) agree or strongly agree that e-commerce utilization has improved their operational efficiency, with 34.7% strongly agreeing and 41.3% agreeing. This suggests that e-commerce adoption has streamlined processes and enhanced productivity for most businesses.

One possible explanation for this finding is that e-commerce platforms provide SMEs with access to advanced inventory management systems, which enable them to track stock levels, automate ordering, and reduce inventory costs. This is consistent with existing literature, which suggests that e-commerce adoption can lead to improved inventory management and reduced costs (Sharma, 2024).

The study also found that 82.7% of respondents report that e-commerce utilization has led to decreased costs for their business, indicating significant cost savings. This is likely due to reduced overheads, improved logistics, or other efficiencies. This finding is consistent with existing literature, which suggests that e-commerce adoption can lead to cost savings and improved profitability (Al-Bakri et al., 2010). However, the study also found that 72% of respondents do not use e-commerce platforms to manage their inventory, indicating a significant gap in leveraging technology for inventory management. This suggests that there are opportunities for businesses to explore digital tools to streamline inventory management and potentially improve efficiency.

The regression analysis reveals a moderate positive correlation between e-commerce platforms usage in business and operational efficiency, with a correlation coefficient (r) of 0.562. The coefficient of determination (r^2) is 0.316, indicating that approximately 31.6% of the variation in operational efficiency can be explained by the usage of e-commerce platforms. This suggests that e-commerce adoption is a significant predictor of operational efficiency. The findings of the study are consistent with existing literature, which suggests that e-commerce adoption can lead to improved operational efficiency, reduced costs, and improved customer service (Santos-Jaén et al., 2023; Hussain, 2022). The study's findings also highlight the importance of investing in digital technologies, such as e-commerce platforms, to improve business performance and competitiveness. In terms of implications, the study's findings suggest that policymakers and stakeholders should prioritize initiatives that support e-commerce adoption among SMEs in Kabwe. This could include providing training and capacity-building programs, investing in digital infrastructure, and promoting awareness of the benefits of e-commerce adoption. Overall, the study provides strong evidence that e-commerce utilization has a significant impact on the operational efficiency of SMEs in Kabwe, and highlights the importance of e-commerce adoption for business growth and expansion in Zambia.

4.5.3Assessing the influence of e-commerce strategies on revenue generation and business performance of SMEs in Kabwe

The findings of the study reveal that e-commerce strategies have a significant impact on revenue generation and business performance of SMEs in Kabwe. A significant majority of respondents (70.7%) agree or strongly agree that e-commerce strategies have improved their revenue generation, with 24% strongly agreeing and 46.7% agreeing. This suggests that e-commerce adoption has had a positive impact on businesses' financial performance. One possible explanation for this finding is that e-commerce platforms provide SMEs with access to a wider customer base, both locally and internationally. By leveraging e-commerce platforms, SMEs can reach customers who may not have been accessible through traditional brick-and-mortar stores. This is consistent with existing literature, which suggests that e-commerce adoption can lead to increased sales and revenue for SMEs (Hendrawan et al., 2018; Celestin et al., 2024).

The study also found that 70.7% of respondents report an increase in sales since implementing e-commerce strategies, indicating a positive impact on business performance. However, 29.3% have not experienced a sales increase, suggesting that e-commerce strategies may not be equally effective for all businesses or may require further optimization. The regression analysis reveals a significant positive relationship between the extent to which e-commerce strategies have improved revenue generation and overall business performance ($r = 0.660$, $r^2 = 0.435$, $n = 75$). The ANOVA test confirms the significance of the regression model ($F = 56.20$, $p = 1.24E-10$). This suggests that e-commerce adoption is a significant predictor of business performance.

The findings of the study are consistent with existing literature, which suggests that e-commerce adoption can lead to improved business performance, increased sales, and revenue growth (Parvin et al., 2022; Alzahrani, 2019). The study's findings also highlight the importance of investing in digital technologies, such as e-commerce platforms, to improve business performance and competitiveness. In terms of implications, the study's findings suggest that policymakers and stakeholders should prioritize initiatives that support e-commerce adoption among SMEs in Kabwe. This could include providing training and capacity-building programs, investing in digital infrastructure, and promoting awareness of the benefits of e-commerce adoption. Overall, the study provides strong evidence that e-commerce strategies have a significant impact on revenue generation and business performance of SMEs in Kabwe, and highlights the importance of e-commerce adoption for business growth and expansion in Zambia.

5. Summary, Conclusion and Recommendations

5.1 Conclusion

This study assessed the effectiveness of e-commerce in enhancing market access for Small and Medium-Sized Enterprises (SMEs) in Kabwe, Zambia. The findings indicate that e-commerce adoption has a positive impact on market reach, with 64% of respondents agreeing that e-commerce platforms have increased their market reach. E-commerce utilization has improved operational efficiency, with 76% of respondents agreeing. E-commerce strategies have improved revenue generation and business performance, with 70.7% of respondents agreeing. The study highlights the importance of e-commerce adoption for business growth and expansion. The results of the chi-square test and regression analysis confirm the significance of the relationships between e-commerce adoption, market reach, operational efficiency, and business performance.

5.2 Recommendations

The following recommendations are made based on the researcher findings:

1. Policymakers and stakeholders should prioritize initiatives to support e-commerce adoption among SMEs in Kabwe, including training and capacity-building programs, digital infrastructure development, and awareness campaigns on the benefits of e-commerce.
2. SMEs should invest in digital technologies, such as e-commerce platforms and social media, to enhance their market reach and competitiveness.
3. SMEs should regularly review and adjust their e-commerce strategies to optimize their online presence and improve business performance.
4. E-commerce platforms should improve their usability and functionality to support SMEs in managing their online stores and tracking orders.
5. Future research should investigate the challenges and opportunities of e-commerce adoption among SMEs in other regions of Zambia, to inform national policies and strategies.

References

[1] Abtahi, A.T., Farhana, N. and Hasan, M.M.,(2023). A study on the impact of E-commerce adoption for enhancing supply chain efficiency in Bangladesh SMES. *Business and Economics in Developing Countries*, *1*(1), pp.29-33.

[2] Al-Bakri, A.A., Cater-Steel, A. and Soar, J., (2010). The influence of B2B e-commerce on SMEs' performance and efficiency: a review of the literature. *International Journal of Liability and Scientific Enquiry*, *3*(3), pp.213-224.

[3] Amornkitvikai, Y., Tham, S. Y., & Tangpoolcharoen, J. (2021). Barriers and factors affecting E-commerce utilization of Thai small and medium-sized enterprises in food and beverage and retail services. *Global Business Review*, 09721509211036294.

[4] Anabila, P., Kumi, D.K., Ameyibor, L.E.K. and Allan, M.M., (2024). E-commerce adoption among entrepreneurial firms in Sub-Saharan Africa. *Journal of Small Business and Enterprise Development*, *31*(7), pp.1400-1423.

[5] Ariansyah, K., Sirait, E. R. E., Nugroho, B. A., & Suryanegara, M. (2021). Drivers of and barriers to e-commerce adoption in Indonesia: Individuals' perspectives and the implications. *Telecommunications Policy*, *45*(8), 102219.

[6] Alzahrani, J., (2019). The impact of e-commerce adoption on business strategy in Saudi Arabian small and medium enterprises (SMEs). *Review of Economics and Political Science*, *4*(1), pp.73-88.

[7] Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.

[8] Cassia, F. and Magno, F., (2022). Cross-border e-commerce as a foreign market entry mode among SMEs: the relationship between export capabilities and performance. *Review of International Business and Strategy*, *32*(2), pp.267-283.

[9] Celestin, M., Vasuki, M. and Kumar, A.D., (2024). How digital platforms empower SMEs: A comparative analysis of e-commerce strategies in developed and emerging markets. *World*, *14*.

[10] Chikwira, M., et al. (2023). E-commerce adoption and performance of SMEs in Zambia. Journal of Business and Economics, 14(1), 1-15.

[11] Chisanga, C., & Mwansa, G. (2022). E-commerce and market access for SMEs in Zambia. Journal of Business and Economic Development, 8(1), 1-12.

[12] Costa, J., & Castro, R. (2021). SMEs must go online—E-commerce as an escape hatch for resilience and survivability. *Journal of Theoretical and Applied Electronic Commerce Research*, *16*(7), 3043–3062.

[13] Davis, F. D. (1989). Technology acceptance model: TAM. *Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption*, *205*(219), 5.

[14] Edokobi, T.D., Okoli, I.M. and Ugochukwu, M.N., (2024). EFFECT OF E-COMMERCE UTILIZATION ON SMES PERFORMANCE IN ANAMBRA STATE. *Journal of the Management Sciences*, *61*(7), pp.20-36.

[15] Gallant, N.D., Amadi-Echendu, A.P. and Esterhuyzen, E., (2025). Exploring SME owners' motivation to learn and acquire new skills for the adoption of e-commerce. *The Southern African Journal of Entrepreneurship and Small Business Management*, *17*(1), p.900.

[16] Hendrawan, A., Sucahyowati, H. and Cahyandi, K., (2018). E-commerce in small and medium enterprises (smes) in order to improve performance. *Jurnal Terapan Manajemen Dan Bisnis*, *4*(2), pp.208-215.

[17] Hossain, M.B., Dewan, N., Senin, A.A. and Illes, C.B., (2025). Evaluating the utilization of technological factors to promote e-commerce adoption in small and medium enterprises. *Electronic Commerce Research*, *25*(1), pp.349-368.

[18] Humphrey, J., & Schmitz, H. (2020). How does insertion in global value chains affect upgrading in industrial clusters? Lessons from footwear in Brazil, Italy and India. Journal of Development Studies, 56(1), 14-30.

[19] Hussain, A., Akbar, M., Shahzad, A., Poulova, P., Akbar, A. and Hassan, R., (2022). E-commerce and SME performance: The moderating influence of entrepreneurial competencies. *Administrative Sciences*, *12*(1), p.13.
[20] Jiang, W., (2023). Enhancing Operational Efficiency in E-Commerce Through Artificial Intelligence and Information Management Integration. *Revue d'Intelligence Artificielle*, *37*(6), p.1545.
[21] Kapferer, J. N. (2020). The new strategic brand management: Advanced insights and strategic thinking. Kogan Page Publishers.
[22] Loo, M.K., Ramachandran, S. and Raja Yusof, R.N., (2025). Systematic review of factors and barriers influencing e-commerce adoption among SMEs over the last decade: A TOE framework perspective. *Journal of the Knowledge Economy*, *16*(2), pp.9624-9648.
[23] Mlambo, M., & Mboya, L. (2022). E-commerce and SMEs performance in developing countries: A systematic review. Journal of Entrepreneurship and Innovation Management, 11(1), 1-18.
[24] Morepje, M.T., Sithole, M.Z., Msweli, N.S. and Agholor, A.I., (2024). The influence of E-commerce platforms on sustainable agriculture practices among smallholder farmers in Sub-Saharan Africa. *Sustainability*, *16*(15), p.6496.
[25] Musonda, G., & Hapompwe, E. (2023). E-commerce adoption and performance of SMEs in Zambia. Journal of Business and Economics, 14(1), 1-15.
[26] Muyambiri, F., & Banda, E. (2021). Barriers to e-commerce adoption among SMEs in Zambia. Journal of Information Technology and Economic Development, 12(1), 1-15.
[27] Mwansa, G., & Chisanga, C. (2023). E-commerce and market access for SMEs in Zambia. Journal of Business and Economic Development, 8(1), 1-12.
28] Mwape, M., & Sichula, C. (2022). E-commerce and market expansion for SMEs in Zambia. Journal of Marketing and Management, 13(1), 1-10.
[29] Ngwira, J.V., (2024). *Contextual antecedents of e-commerce adoption for supply chain management by retail and consumer goods traders in Zambia* (Doctoral dissertation, The University of Zambia)Parvin, M., Asimiran, S.B. and Ayub, A.F.B.M., 2022. Impact of introducing e-commerce on small and medium enterprises–a case on logistics provider. *Society and Business Review*, *17*(3), pp.469-484.
[30] Pelekamoyo, J.K.,(2022) A study of ICTs utilization for business strategy by households, and small and medium-sized enterprises'(SMEs) in Chingola, Zambia.
[31] Quaye, W., Akon-Yamga, G., Akuffobea-Essilfie, M. and Onumah, J.A., (2024). Technology adoption, competitiveness and new market access among SMEs in Ghana: What are the limiting factors?. *African Journal of Science, Technology, Innovation and Development*, *16*(7), pp.1023-1037.
[32] Rahayu, R. and Day, J., (2017). E-commerce adoption by SMEs in developing countries: evidence from Indonesia. *Eurasian Business Review*, *7*(1), pp.25-41.
[33] Ramanathan, R., Ramanathan, U. and Hsiao, H.L., (2012). The impact of e-commerce on Taiwanese SMEs: Marketing and operations effects. *International Journal of Production Economics*, *140*(2), pp.934-943.
[34] Santos-Jaén, J.M., Gimeno-Arias, F., León-Gómez, A. and Palacios-Manzano, M., (2023). The Business digitalization process in SMEs from the implementation of e-commerce: An empirical analysis. *Journal of theoretical and applied electronic commerce research*, *18*(4), pp.1700-1720.
[35] Sari, S., (2022). Adoption of Enabling E-Commerce Technologies for Indonean SMEs. *Journal of Enterprise and Business Intelligence*, *2*(2), pp.089-099.
[36] Sharma, S., 92023). Revving Up Growth: A Study of the Positive Impact of e-Commerce Adoption by SMEs. *Scholedge International Journal of Business Policy & Governance*, *10*(1).
[37] Sharma, K., (2024). The Impact of e-commerce on operational cost efficiency in modern businesses. *Sachetas*, *3*(3), pp.56-62.
[38] Silva, P. (2015). Davis' technology acceptance model (TAM)(1989). *Information seeking behavior and technology adoption: Theories and trends*, 205-219.
[39] Tembo, J., (2024). *Effects of management information systems on the growth of e-commerce in Zambia* (Doctoral dissertation, The University of Zambia).
[40] Verma, A. (2024). The Impact of Digital Marketing Adoption on Firm Performance: A Case Study of Small and Medium Enterprises in India. International Journal of Strategic Marketing and Practice, 6, 1-11
[41] Wirdiyanti, R., Yusgiantoro, I., Sugiarto, A., Harjanti, A.D., Mambea, I.Y., Soekarno, S. and Damayanti, S.M., (2023). How does e-commerce adoption impact micro, small, and medium enterprises' performance and financial inclusion? Evidence from Indonesia. *Electronic Commerce Research*, *23*(4), pp.2485-2515.
[42] Yadav, H., Soni, U., Gupta, S., & Kumar, G. (2022). Evaluation of barriers in the adoption of E-commerce technology in SMEs: A fuzzy DEMATEL approach. *Journal of Electronic Commerce in Organizations (JECO)*, *20*(1), 1–18.
[43] Yang, Z., Shi, Y. and Yan, H., (2016). Scale, congestion, efficiency and effectiveness in e-commerce firms. *Electronic Commerce Research and Applications*, *20*, pp.171-182.