A Study on the Identification of E-Commerce Technologies and the Adoption Challenges That Small and Medium Enterprises (SMEs) Face: Case Study Mavoko Constituency, Machakos County, Kenya

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Abstract: *Small and medium-sized enterprises (SMEs) globally play a significant role in economic growth and development. However, the adoption of e-commerce by SMEs, particularly in developing countries, has been slow due to various reasons. This journal aims to identify the e-commerce technologies and adoption challenges that small and medium enterprises (SMEs) face in Mavoko Constituency, Machakos County, Kenya, with a specific focus on Business-to-Consumer (B2C) transactions. The research reveals several key findings regarding the adoption of e-commerce by SMEs in Mavoko Constituency. Firstly, e-commerce platforms are widely utilized, with 92% of respondents actively engaging in them. Mobile commerce (m-commerce) and social media integration have emerged as prominent technological trends, underscoring the dynamic nature of e-commerce practices among SMEs. However, despite the widespread adoption of e-commerce platforms, SMEs face significant challenges that hinder their full realization of the benefits of digital commerce. Among these challenges are trust and security concerns, which constitute a substantial barrier to e-commerce adoption, accounting for 24% of the challenges faced by SMEs. Limited access to technology and internet infrastructure (12%) and lack of collaboration and networking opportunities (20%) also pose significant hurdles. Moreover, financial constraints, limited market awareness, and digital skills gaps further exacerbate the challenges faced by SMEs in embracing e-commerce technologies. By addressing these challenges and implementing targeted interventions, policymakers, industry stakeholders, and SMEs themselves can unlock the transformative potential of e-commerce, driving economic growth, job creation, and sustainable development in Mavoko Constituency and beyond.*

Keywords: Small and Medium Sized Enterprises (SME's), E-commerce, adoptions, challenges

1. Introduction

The widespread availability of the internet and advancements in technology have enabled the growth of e-commerce. E-commerce has transformed the way businesses operate and interact with customers, providing new opportunities for businesses of all sizes to reach new markets, increase their reach, and improve efficiency (Gao et al., 2023). Despite these benefits, the adoption of e-commerce is still limited among small and medium-sized enterprises (SMES) in many developing constituencies. Small and medium-sized enterprises (SMEs) are recognized as key players in the economic growth and development of most countries. In Kenya, SMEs contribute significantly to the national economy, employing a considerable percentage of the workforce and generating substantial revenue (World Bank SME Finance, n.d.). Despite their potential, SMEs face several challenges that hinder their growth and competitiveness. Most of the influencing dynamics for the adoption of e-commerce in Kenya may vary based on the SME's sector in which the organization operates.

According to the latest report of UNCTAD (2021) most of the developing countries have started embracing the use of E-commerce especially the covid 19, Kenya being among the developing countries which realized the potential benefits during covid period. While E-commerce creates more opportunities for businesses worldwide to reach new markets, developing countries have not been able to reap the benefits of the opportunities provided (UNCTAD Handbook of Statistics 2021 2022). There are barriers that hinder SMEs from fully embracing e-commerce and capitalizing on its potential. Overcoming these challenges is critical for SMEs to unlock the potential benefits that e-commerce can offer, including increased access to new markets, improved operational efficiency, and enhanced customer engagement (Mwangi & Ngugi, 2021). Addressing these factors from the organization's perspective requires; strategic planning, resource allocation, and a positive attitude towards technology adoption.

Problem of Research; The low adoption of e-commerce by SMEs in the B2C market, particularly in Mavoko Constituency, presents a significant challenge to SMEs that want to compete effectively. Numerous factors have been identified as contributing to this low adoption. While the potential benefits of e-commerce adoption by SMEs are numerous, most SMEs in Kenya have been slow in adopting e-commerce, citing various challenges notably, challenges such as limited access to technology, digital skill gaps, trust and security concerns, financial constraints, logistics inadequacies, limited market awareness, regulatory

constraints, and lack of collaboration opportunities, which impede SMEs' effective entry into the digital marketplace.

1.2. Objectives of the study

A study on the identification of e-commerce technology and analyse challenges that are faced by small and medium enterprises (SMEs).

1.3 Research Question

What are the e-commerce technology and adoption challenges faced by small and medium enterprises (SMEs) ?

1.4 Scope of the study

The scope of this study is focused on Small and Medium-sized Enterprises (SMEs) in the B2C context within the Syokimau and Mlolongo areas of Mavoko Constituency. The study aims to investigate the factors that affect the adoption of e-commerce by SMEs from an organizational. The study will target a sample of SMEs in the Syokimau and Mlolongo areas, selected using a stratified random sampling technique. The target population of the study will be SMEs that operate in various sectors, including retail, hospitality, and service industries.

1.5. Significance of the study

The study will provide valuable insights into the factors as determinants of e-commerce adoption by SMEs. By identifying these factors, the study will help SMEs to overcome the barriers to e-commerce adoption and enable them to leverage the opportunities presented by the digital economy. Moreover, the study's findings will be useful for policymakers, business owners, and investors interested in promoting e-commerce adoption in the SME sector. Policymakers can use the study's results to formulate policies that promote the development of e-commerce infrastructure and provide incentives for SMEs to adopt e-commerce.

2. Literature Review

The literature review is conducted in alignment with the research objectives and aims to provide a theoretical foundation for the study. Theoretical frameworks such as the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) theories will be discussed about e-commerce adoption by SMEs. The chapter also explores the concept of the digital drive and its impact on e-commerce adoption in developing countries.

TAM in this study will help to identify the main factors influencing e-commerce adoption by SMEs in Mavoko constituency and to determine their relative importance in explaining adoption behaviour. The findings will contribute to a better understanding of the challenges and opportunities facing SMEs in adopting e-commerce and provide insights for policymakers and practitioners seeking to promote e-commerce adoption by SMEs in Mavoko constituency. While Unified Theory of Acceptance and Use of Technology (UTAUT) focuses on effort expectancy in the context of e-commerce adoption by SMEs in the Mavoko constituency

may be influenced by the user-friendliness of e-commerce platforms, the availability of technical support, and the level of ICT skills among SME owners and employees (Chen et al., 2014). Social influence refers to the degree to which an individual is influenced by others to use or not use a technology (Venkatesh et al., 2003). The influence of peers or stakeholders on e-commerce adoption by SMEs may be a factor in social influence (Mahmood et al., 2020). Facilitating conditions refer to the degree to which an individual perceives that the necessary resources and support are available for using a technology (Venkatesh et al., 2003). In the context of e-commerce adoption by SMEs in the Mavoko constituency, the availability of resources and infrastructure for e-commerce such as internet connectivity, secure payment gateways, and logistics support, may influence the perception of facilitating conditions (Mahmood et al., 2020).

2.1. E-commerce Technologies that support Small and Medium Enterprises

In today's fast-paced digital landscape, the successful growth and sustainability of Small and Medium-sized Enterprises (SMEs) heavily rely on the strategic adoption of e-commerce technologies. The technological solutions will provide SMEs with a competitive edge, enabling them to overcome traditional barriers and effectively navigate the complexities of online commerce. By leveraging e-commerce platforms, mobile commerce, secure payment gateways, customer relationship management systems, inventory management tools, analytics, and social media integration, SMEs can enhance their operational efficiency, expand their market reach, and establish strong customer relationships. Moreover, the integration of personalized experiences, live chat support, and cloud computing services empowers SMEs to provide seamless shopping experiences while maintaining cost-effectiveness and scalability. Thus, embracing e-commerce technologies is imperative for SMEs, catalyzing their growth, profitability and long term success in today's digital-driven economy.

2.1.1. E-commerce Platforms
Many e-commerce platforms, including Shopify, WooCommerce and Magento provide SMEs with ready-to-use solutions for building and managing online stores. The platforms offer features such as product management, inventory tracking, payment gateways and customizable storefronts (Gulfraz et al., 2022).

2.1.2. Mobile Commerce (m-commerce)
Smartphone usage in this day and age has increased making m-commerce increasingly important for SMEs in general. Businesses now can reach clients on the go and make quick mobile device transactions, thanks to mobile-optimized websites and mobile apps (Lin et al., 2022) (Ahmad & Ibrahim, 2017).

2.1.3. Payment Gateways
This is a fintech that provides payment services by integrating the users' business process with various banks and financial entities. The payment gateway requires handling different users' needs, and the implementation is also related to various payment channels and environments. This kind of variation in the payment gateway could be managed using software

product line engineering (SPLE) in different e-commerce platforms (Koesnadi et al., 2022).

2.1.4. Customer Relationship Management (CRM) Systems

The management of customer data, tracking interactions, and the improvement of customer relationships are made possible for small and medium-sized enterprises through the utilization of CRM systems like Mo and Salesforce (Li et al., 2018). These systems provide the means for targeted marketing, personalized promotions, and an overall effective customer support experience(Meena & Sahu, 2021).

2.1.5. Inventory Management Systems

Effective inventory management is crucial for SMEs. Technologies such as TradeGecko, Stitch Labs, and Orderhive automate inventory tracking, streamline order fulfilment, and prevent stock outs or overstocking, optimize operations (Sabah Salih et al., 2023).

2.1.6. Analytics and Reporting Tools

Tools like Google Analytics, Kissmetrics, and Mixpanel provide SMEs with insights into customer behaviour, conversion rates, and sales performance. Analyzing this data helps businesses make informed decisions and improve their e-commerce strategies(Ahmed et al., 2017).

2.1.7. Social Media Integration

Integrating e-commerce platforms with social media platforms like Facebook, Instagram, Jijii and Pinterest enables SMEs to showcase products, run targeted advertisements and drive traffic to their online stores (Brahma & Dutta, 2020).

2.1.8. Live Chat and Chatbots

Real-time customer support is essential for SMEs. Live chat software like LiveChat and chatbot platforms like Chatfuel and ManyChat help businesses engage with customers, address queries, and help improve the overall shopping experience (Adam et al., 2020).

2.1.9. Personalization Technologies

Delivering personalized experiences enhances customer satisfaction. Technologies like dynamic content delivery, recommendation engines, and personalized email marketing tools enable SMEs to tailor their offerings based on customer preferences and behavior (Tailor, 2023).

2.3.10. Cloud Computing and Hosting Services

Cloud-based e-commerce solutions, such as Amazon Web Services (AWS) and Microsoft Azure, offer scalability, flexibility, and cost-effectiveness. They provide SMEs with reliable hosting, data storage, and computing power, ensuring smooth online operations (Ali, 2023).

2.2. Challenges facing Small and Medium Enterprises

Small and medium enterprises (SMEs) within the Mavoko Constituency of Machakos County, Kenya face several demanding situations in adopting and leveraging e-commerce technologies. Understanding those challenges is essential to devising powerful techniques to assist SMEs deal with them. This phase examines important things demanding situations confronted by means of SMEs in the Mavoko constituency in adopting e-commerce.

2.2.1 Limited Access to Technology and Internet Infrastructure

One huge challenge faced by SMEs in Mavoko Constituency is constrained access to technology and dependable internet infrastructure (Muriuki et al., 2020). Inadequate internet connectivity and excessive fees for internet services restrict SMEs from absolutely embracing e-commerce technologies. The loss of low-priced and dependable internet connectivity restricts their ability to interact in on-line transactions, get admission to on-line marketplaces and make use of cloud-based total offerings (Ariansyah et al., 2021).

2.2.2 Limited Digital Skills and Knowledge

Many SMEs in Mavoko Constituency lack important virtual capabilities and knowledge required to efficiently adopt and make use of e-commerce technologies (Nyambane and Cheluget, 2018). Limited understanding of online marketing, internet site development, online price systems, and digital safety pose significant demanding situations to SMEs in successfully leveraging e-commerce structures and gear. The absence of digital literacy hampers their potential to navigate the complexities of online enterprise operations (Ariansyah et al., 2021).

2.2.3 Lack of Trust and Security Concerns

Trust and protection issues are the foremost obstacles for SMEs in Mavoko Constituency in terms of e-commerce adoption (Al-Tayyar et al., 2021). SMEs and their clients face dangers related to online price fraud, facts breaches and cyberattacks. The perceived lack of safety features and trustworthiness of online systems deter SMEs from embracing e-commerce technology. Concerns concerning the protection of touchy purchaser statistics and financial transactions undermine their self-assurance in accomplishing online business (Soleimani, 2021).

2.2.4 Limited Financial Resources

Limited economic resources pose a vast assignment for SMEs in Mavoko Constituency to invest in e-commerce technologies and infrastructure (Soleimani, 2021). The costs related to growing and retaining e-commerce platforms, purchasing software and hardware, and implementing cybersecurity measures may be big. SMEs often battle to allocate sufficient budget for e-commerce initiatives, hindering their ability to compete effectively in the digital market (Taher, 2021).

2.2.5 Inadequate Logistics and Infrastructure

Inadequate logistics and infrastructure support present challenges for SMEs in Mavoko Constituency engaging in e-commerce activities (Macharia, 2009). The lack of reliable transportation, warehousing facilities, and last-mile delivery services affects their ability to fulfil customer orders promptly and efficiently. Inadequate logistics infrastructure hampers SMEs' competitiveness and customer satisfaction in the e-commerce landscape (Amornkitvikai et al., 2022).

2.2.6 Limited Market Awareness and Reach

Small and medium-sized enterprises (SMEs) in Mavoko Constituency encounter difficulties in reaching their desired

market due to restricted access to market information, limited marketing capabilities, substandard product quality, inadequate ability to tap into specialised markets, and overcrowded markets. Additionally, ineffective markets are caused by insufficient information, high transaction costs, and inadequate market research, leading to a mismatch between supply and demand(Njoroge, 2015).

2.2.7 Regulatory and Legal Constraints

Regulatory and legal constraints present challenges for SMEs in Mavoko Constituency regarding e-commerce adoption and compliance (Salah & Ayyash, 2024). SMEs must adhere to various legal requirements, such as data protection, consumer rights, and taxation regulations. The complexity and ambiguity of these regulations and limited access to legal support create barriers for SMEs to fully embrace e-commerce technologies (Nazir & Roomi, 2021).

2.2.8 Lack of Collaboration and Networking Opportunities

Limited collaboration and networking opportunities pose challenges for SMEs in Mavoko Constituency in leveraging the benefits of e-commerce (Amornkitvikai et al., 2022). SMEs often face isolation and lack access to platforms or forums where they can connect and collaborate with other businesses, potential partners, or e-commerce experts. A supportive ecosystem is necessary for knowledge sharing, innovation, and collective problem-solving in development (Metzger et al., 2019).

2.3 Empirical framework

This section presents a synthesis of empirical frameworks derived from relevant studies, each contributing distinct perspectives to the overarching theme of E-commerce adoption among Small and Medium-Sized Enterprises (SMEs). The studies outlined below illuminate crucial drivers, barriers, and implications that resonate with the context of the present research endeavour."A study on the identification of e-commerce technology and analyse challenges that are faced by small and medium enterprises"

Amornkitvikai et al 2022 wrote Barriers and Factors Affecting E-Commerce Sustainability of Thai Micro-, Small- and Medium-Sized Enterprises (MSMEs) This study delves into the challenges of E-commerce sustainability within Thai MSMEs in Bangkok's retail and food sectors. Investigating various factors including internal/external E-commerce tools, firm/owner age, export activities, and security concerns, the research unveils the positive impacts of tools, export activities and experience on sustainability. However, age, literacy perceptions, and security issues hinder adoption. Notably, sustainable E-commerce practices enhance customer satisfaction and loyalty, calling for addressing barriers and promoting sustainable practices to foster MSME growth and Thailand's E-commerce advancement. (Amornkitvikai et al., 2022).

Al-Tit(2020)**E-commerce Drivers and Barriers and their Impact on E-customer Loyalty in SMEs**, This study delves into the intricate interplay of E-commerce drivers and barriers within the SME landscape, considering their subsequent impact on E-customer loyalty. Through dual samples—SME managers and customers—data was collected via electronic questionnaires. The findings underscore the multifaceted nature of E-commerce adoption, unveiling 10 drivers including factors like customer preferences, perceived value, and organizational culture. Correspondingly, the study identifies 7 barriers, spanning technological expertise and legal constraints. Furthermore, the study elucidates predictors of E-customer loyalty, spotlighting elements like E-commerce ethics and customer satisfaction. These findings offer valuable insights that echo the objectives of the present research, aiding in the development of a comprehensive framework for E-commerce adoption among SMEs.

Factors Influencing the Adoption of E-commerce by Small and Medium-Sized Enterprises (SMEs) in Algeria: A Qualitative Study .Hassen et al. (2020) qualitative study delves into the barriers influencing the adoption of E-commerce among SMEs. Through in-depth interviews, the research highlights impediments such as e-payment methods, legal protection, and risk aversion. These findings resonate with the context of the present research in exploring the unique factors that affect E-commerce adoption within the local Kenyan context.

Factors Affecting E-commerce Adoption on Micro, Small and Medium Enterprises in Medan City. Nurlinda et al. (2018) examines the impact of organizational readiness and technological preparedness on E-commerce adoption, this study resonates with the objectives of the present research. The study's insights into technology readiness and its correlation with adoption align with the investigation into factors affecting E-commerce adoption among SMEs in Mavoko Constituency.

E-commerce Adoption in SMEs: A Literature Review. This literature review dives into the determinants of E-commerce adoption in SMEs, aligning with the research goals of the present study. By incorporating the Technology-Organization Environment (TOE) framework, this review enriches the understanding of the factors influencing E-commerce adoption among SMEs, offering guidance and insights that correspond with the objectives of the present research(Religia et al., 2021).

Together, these empirical frameworks offer a panoramic view of factors driving and inhibiting e-commerce adoption among SMEs, providing valuable insights and considerations that resonate with the aims and scope of the present research in the context of Mavoko Constituency, Machakos County, Kenya.

2.4 Research gap

Within the context of the rapidly evolving digital landscape, the research topic "Framework of Factors Affecting E-commerce Adoption by Small and Medium-Sized Enterprises (SMEs): Case Study Mavoko Constituency, Machakos County, Kenya" sheds light on a critical aspect of modern business dynamics. Despite the extensive attention to E-commerce adoption, a significant research gap persists. This gap pertains to a nuanced understanding of the specific contextual forces influencing E-commerce adoption among SMEs in the distinctive environment of Mavoko Constituency.

Current research largely examines E-commerce adoption broadly, often overlooking the intricate micro-level intricacies faced by SMEs in Mavoko Constituency. This gap underscores the need for a localized exploration that unveils the unique socio-economic, cultural, regulatory, and infrastructural dimensions shaping E-commerce decisions for local SMEs.

Furthermore, most studies tend to focus on either the drivers or barriers of E-commerce adoption, lacking a comprehensive perspective. The proposed study addresses this gap by emphasizing a holistic approach, recognizing the interplay among various factors influencing SMEs' choices in Mavoko Constituency. This study's primary aim is to narrow this research gap by offering nuanced insights into the challenges, opportunities, and strategic considerations encountered by local SMEs as they navigate the E-commerce landscape in Mavoko Constituency.

3. Methodology

The study population was concentrated on the population of all SMES in the Mavoko Constituency. "SMES are defined as businesses that employ between 1 and 249 employees and have an annual turnover of less than 50 million Kenyan shillings," according to the Kenya National Bureau of Statistics. Based on the Kenya National Bureau of Statistics (KNBS), there are approximately 1 million SMES in Kenya, accounting for more than 90% of all firms. (KNBS, 2019). Mavoko Constituency alone is anticipated to have around 18,000 SMES according to the mavoko county offices. The sample of 100 SME's was selected based on the criteria that the SMEs must have been in business for at least 2 years, must have an annual turnover of less than 50 million Kenyan shillings, and must employ between 1 and 249 employees. The study used short closed-ended questions on the Likert scale of STONGLY AGREE, AGREE, NEUTRAL, DISAGREE, STRONGLY DISAGREE. Data Analysis Methods focused on how the collected data was analyzed to achieve the study's objectives. In this study, both qualitative and quantitative methods will be used to analyze the data. The aim of the study is to investigate the influence of factors on the adoption of e-commerce among Small and Mid-size Enterprises (SMES) in Mavoko Constituency.

4. Results and Findings

The presentations were done based on the research objectives in Mavoko Constituency, Machakos County, Kenya.

4.1 Results

4.1.1. E-commerce Platforms
The researcher sought to establish the number of distinct e-commerce platforms and technologies employed by SME within Mavoko. Figure 4.1 breakdown of the various combinations of tools utilized, revealing the diverse technological landscape of e-commerce practices among respondents. E-commerce Platforms were reported by 1.0% of businesses as a singular tool, while 11.0% integrated Social Media Integration (specified) alongside E-commerce Platforms, Mobile Commerce (m-commerce), Payment Gateways, and Analytics and Reporting Tools. Particularly

noteworthy is the prevalence of Mobile Commerce (m-commerce), with 19.0% of respondents incorporating it alongside specified technologies, underscoring its significance in the digital commerce strategies of the surveyed businesses. This comprehensive analysis sheds light on the varied technological preferences and combinations adopted by businesses, providing insights into the evolving nature of e-commerce practices in the studied context.
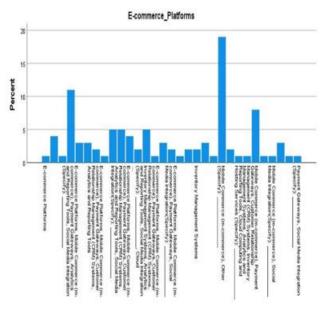

Figure 4.1: E-commerce platforms

4.1.2. E-commerce Challenges on Small and medium-sized enterprises
The research sought to investigate the challenges SMEs face in e-commerce in Mavoko constituency. Figure 4.3 shows percentages in which respondents answered the questionnaire where a Lack of Trust and Security Concerns, constituting a substantial 24.00% of the challenges faced. Following closely, Limited Access to Technology and Internet Infrastructure accounted for 12.00%, and Lack of Collaboration and Networking Opportunities represented a significant challenge at 20.00%. Limited Financial Resources posed a hurdle at 11.00%, Limited Market Awareness and Reach were identified as challenges at 10.00%, and Limited Digital Skills and Knowledge constituted 8.00%. Regulatory and Legal Constraints were reported at 6.00%, Inadequate Logistics and Infrastructure were noted at 5.00%, and a smaller percentage, 4.00%, indicated that respondents faced none of the mentioned challenges.

Figure 4.2: E-commerce challenges

4.2. Findings

4.2.1. Correlations for E-Commerce Technologies and Adoption in Mavoko SMEs

The study used Pearson correlation analysis to determine the direction and intensity of the connections to evaluate the relationship between different e-commerce technologies and SMEs in Mavoko Constituency adopting

Table 4.3: Correlation Analysis Results

E-Commerce Technology	Correlation Coefficient	p-value
Online Payment Systems	0.68	<0.05
E-commerce Platforms	0.75	<0.01
Mobile Commerce	0.72	<0.01
Inventory Management Systems	0.69	<0.05
Customer Relationship Management	0.74	<0.01

Significant correlations between e-commerce technologies and Mavoko SMEs' adoption of those technologies were found by the correlation analysis. Interestingly, there was a highly positive correlation between E-commerce Platforms and Customer Relationship Management (both with coefficients above 0.7 and p-values below 0.01), suggesting a strong relationship with adoption.

Where table 4.3 shows; that Technological Infrastructure (Correlation coefficient: 0.72): Demonstrates a moderately robust positive correlation with E-Commerce adoption. A 0.1 increase in this factor correlates with a 0.72 rise in the likelihood of adopting E-Commerce. Access to Affordable Internet Services (Correlation coefficient: 0.84): Displays the most robust positive correlation with E-Commerce adoption. A 0.1 increase in this factor is associated with a 0.84 elevation in the likelihood of adopting E-Commerce.

Digital Skills and Literacy (Correlation coefficient: 0.68): Exhibits a moderately strong positive correlation with E-Commerce adoption, slightly weaker than Factor 1 but still denotes a significant positive relationship; Financial Constraints (Correlation coefficient: 0.75): Portrays a moderately strong positive correlation with E-Commerce adoption, akin to Access to Affordable Internet Services; Support from Government and Industry Associations(Correlation coefficient: 0.71): Displays a

moderately strong positive correlation with E-Commerce adoption, marginally less potent than Financial Constraints but remains statistically significant.

5. Discussions, Conclusions and Recommendations

5.1 Discussions

5.1.1 E-commerce Technologies that support Small and Medium Enterprises

This objective is to identify common e-commerce technologies that are appropriate for adoption by small and medium-sized businesses (SMEs) and to Analyse the problems experienced during the adoption process. The report sheds light on the landscape of e-commerce technology adoption among SMEs by conducting a thorough examination in the specific context of Mavoko Constituency. However, the findings' regional exclusivity offers a restriction, necessitating a deeper investigation across many locations. Future studies should broaden the focus to include SMEs in a variety of economic and cultural contexts. This extension will increase the generalizability of identified e-commerce technologies and provide a more comprehensive understanding of adoption patterns on a larger scale.

5.1.2 Exploring the Hurdles Faced by SMEs in Embracing E-commerce Technologies

The rapid advancement of technology in recent years has revolutionized various aspects of our lives, including the way businesses operate. In particular, the emergence of e-commerce technologies has presented numerous opportunities for businesses in the Mavoko constituency to expand their reach and increase their profitability. The findings align with the conceptual framework as they highlight the multifaceted challenges SMEs face in adopting e-commerce. However, unexpected results might include SMEs overcoming these hurdles more quickly than anticipated or identifying additional hurdles not included in the original framework. For instance, SMEs might leverage existing social media platforms for e-commerce, thereby reducing the need for significant financial investment. Alternatively, SMEs might face additional hurdles such as a lack of customer demand for online shopping or difficulty in managing online customer service. These findings would have implications for the theoretical framework, suggesting the need for its expansion or modification to accurately reflect the SMEs' experience.

5.2 Conclusion

E-commerce platforms emerged as the dominant choice among respondents, showcasing active participation. The study successfully fulfilled its primary objective by revealing Mobile Commerce (m-commerce) and Social Media Integration as prevalent e-commerce technologies adopted by SMEs in Mavoko. This underscores the region's receptiveness to diverse platforms and the potential for a technologically diverse e-commerce ecosystem.

A significant roadblock encountered was the issue of Trust and Security Concerns. Alongside this, Limited Access to Technology, Internet Infrastructure, and Limited

Collaboration Opportunities emerged as substantial hurdles. The study brought to light tangible challenges such as concerns about trust and security, as well as limited access to technology, providing valuable insights into the real-world obstacles faced by SMEs. The recognition of Limited Collaboration Opportunities sheds light on areas that hold potential for improvement.

5.3 Recommendations

The report sheds light on the landscape of e-commerce technology adoption among SMEs by conducting a thorough examination in the specific context of Mavoko Constituency. However, the findings' regional exclusivity offers a restriction, necessitating a deeper investigation across many locations. Future studies should broaden the focus to include SMEs in a variety of economic and cultural contexts. This extension will increase the generalizability of identified e-commerce technologies and provide a more comprehensive understanding of adoption patterns on a larger scale.

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