Effect of Digital Financial Innovation on the Financial Performance of Small and Medium Enterprises in Nairobi City Centre, Kenya

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The study's objective is to determine how digital financial innovation has affected financial performance of SMEs in Nairobi City Centre, Kenya. The research was focused on evaluating the effect of digital payment systems, mobile banking, and online lending on SMEs' financial performance. The research was grounded on Technology Acceptance Model (TAM), Schumpeter’s Theory of Innovation, and Diffusion of Innovation (DOI) theories to provide a conceptual framework for understanding the effect of digital financial innovation on SMEs performance. A descriptive research design was employed to analyze the data gathered from the target population, which consisted of SME owners in the retail industry located in Nairobi City Centre. The sample size was 300 SMEs, selected through a simple random sampling technique to ensure a representative representation of businesses based on their size and industry. The primary research instrument used will be a questionnaire, which allows the collection of quantitative and qualitative data on SMEs' utilization and experiences with digital financial innovations. The results revealed that digital payment systems, mobile banking, and agent banking did not have statistically significant relationships with SMEs' financial performance, as evidenced by their respective p-values (0.773, 0.090, and 0.405). These findings suggest that the adoption and utilization of these digital financial services alone do not significantly influence SMEs' financial outcomes. In contrast, online lending was found to have a positive and statistically significant effect on financial performance, with a p-value of 0.042. This implies that SMEs in the retail sector in Nairobi City Centre can potentially improve their financial performance by actively engaging in online lending activities. However, it is important to note that the overall model's R-squared value was low at 5.2%, indicating that the independent variables collectively explained only a small proportion of the variance in financial performance. The F-statistic (1.231) was statistically insignificant with a p-value of 0.303, suggesting that the predictors had an insignificant combined effect on explaining financial performance. In conclusion, while online lending shows promise as a means to enhance financial performance, SMEs should adopt a comprehensive financial management approach that considers various factors beyond just digital financial services to achieve sustained improvements in their financial outcomes.

Key Words: Digital Financial Innovation, Digital Payment Systems, Mobile Banking, Digital Lending, Customer Payment Technology, Financial Performance

I.0 INTRODUCTION

1.1 Background of the Study
The adoption digital financial innovation has rapidly grown in recent years, transforming the financial landscape and the way businesses operate. SMEs are essential to the expansion and development of economies. However, many SMEs struggle to access digital financial innovation services and face challenges in managing their finances effectively. The introduction of digital financial innovations has created new opportunities for SMEs to access financial services and improve their financial performance. However, the innovations’ impact on SMEs' financial performance in Nairobi needs to be better understood. According to Kivuitu et al. (2022), mobile banking has a significant effect on the performance of Kenyan SMEs. Digital payment systems, online lending, and agency banking also have a positive effect on the performance of SMEs. The study found that the implementation of mobile and agency banking influenced the financial performance of most Kenyan SMEs. Moreover, Okoth & Muia (2020) showed that financial innovation is positively connected with profitability in the small and medium enterprises. The findings are supported by the widespread use of financial systems that are more effective compared to older, less effective ones.
However, some SMEs in Kenya are using traditional financial systems. The use of older financial systems among SME owners in Kenya creates a gap in the literature and a need for research to explore the association between digital financial innovation and the performance of SMEs in Nairobi City Centre.

The transformation of digital financial innovation in Kenya and the use of innovations by SMEs is caused by technological advancements in Kenya. The rapid development of technology, particularly in mobile and internet-based systems, has enabled the creation and widespread adoption of digital financial innovations. Moreover, the rise in smartphone and internet penetration in Kenya has created a more favorable environment for digital financial services to flourish (Jumba & Wepukhulu, 2019). It has also increased access to financial services for SMEs, enabling them to participate in the digital financial ecosystem. The Kenyan government has proactively promoted digital financial services through the Digital Literacy Program. A large portion of the population in Kenya, including many SMEs, is unbanked or underbanked, making it difficult for them to access traditional financial services.

Digital financial innovations provide an alternative solution for these businesses to access financial services and improve their financial performance. Moreover, the Kenyan financial sector has undergone significant reforms recently, creating a more favorable environment for digital financial innovation (Jumba & Wepukhulu, 2019). It has also made it easier for SMEs to access financial services through digital channels. Therefore, use of digital financial services have the potential to boost the financial performance of SMEs significantly in Kenya.

Arnaboldi and Rossignoli (2010) define financial innovation as the creation of new financial products, services, and technologies that reduce risks and enhance the management of financial assets and liabilities. In Kenya, digital financial innovation has transformed the financial landscape, particularly impacting Small and Medium Enterprises (SMEs). SMEs in Kenya benefit from three key forms of digital financial innovations: product or service digital financial innovations, market digital financial innovations, and process digital financial innovations (Kombe, 2023). Product or service innovations involve new or improved financial products accessible via digital channels, such as mobile banking, digital payment systems, and online lending platforms. Mobile banking and digital payment systems have gained popularity, offering convenience and reducing the need for physical bank visits. Online lending platforms provide SMEs with easier access to credit. Additionally, agent banking partnerships with third-party agents make financial services more accessible (Kiveu, Namusonge & Muathe, 2019). Market innovations alter how financial services are offered and consumed, with digital wallets connecting bank and mobile money accounts. Process innovations use digital technology, including AI and blockchain, to streamline financial transactions and customer onboarding (Kamau & Oluoch, 2016). These innovations have expanded financial access for SMEs in Kenya, improving their financial performance, efficiency, and security. However, challenges such as implementation costs and training are also present. SMEs in Nairobi City Centre play a significant role in the local economy, contributing to job creation and economic growth. They operate across diverse sectors but face challenges like limited financial resources, lack of expertise, and market access difficulties. These issues hinder their growth potential (Awinja & Fatoki, 2021).

1.2 Statement of the Problem
Digital financial innovations have revolutionized how SMEs in Nairobi, Kenya, access, manage and utilize their finances. Digital financial innovations such as mobile banking and online payments have allowed businesses to access financial services from anywhere and anytime, thus providing them with greater...
opportunities to increase their financial performance (Moki, Kanini & Kinyua, 2019). In Kenya, SMEs account to 24% of the GDP (Mwangi, 2022). The SMEs also account to 90% of the private sector enterprises in the country and they are accountable for 93% of the labor force within the economy. According to Ali (2022), 41% of the SMEs which implemented digital innovations had a higher revenue growth compared to those which did not adopt digitization. The average revenue of the SMEs grew by 20% due to the adoption of the digital financial innovations (Mutune, 2023). The data shows that inclusion of digital financial innovation in the SMEs need to improve to gain more revenue growth. However, there is little information on the impact of these digital financial innovations on the financial performance of SMEs in Nairobi City Centre, Kenya.

According to Mwawasaa & Ali (2020), product innovation positively and significantly affects financial performance. Process innovation has a negligible and positive impact on financial performance. However, institutional and market innovation had a detrimental influence on financial performance. According to Wachira, Kalui, and Gathii (2021), digital financial services have a negative influence on financial performance. Additionally, Halima & Wepukhulu (2020) and Omwanza & Jagongo (2019) found that financial innovation significantly affects financial performance. Previous studies have found financial innovation's negative and positive effects on financial performance. Moreover, previous studies have majored in other financial institutions. The previous studies are based on insurance companies and commercial banks. The absence of certainty in the findings creates a gap in the current research. Moreover, the absence of enough studies on SMEs in Nairobi City Centre creates another gap to be filled by the study.

There is a limited understanding of the specific effects of digital payment systems. There is a lack of comprehensive understanding regarding the specific mechanisms through which these systems influence financial performance. The existing literature has provided mixed findings. Therefore, there is a need for more empirical research to identify and analyze the key factors and processes involved. Moreover, there is inadequate knowledge about the impact of mobile banking. Although mobile banking has gained significant popularity in Kenya, there is a lack of in-depth knowledge regarding its effect on the financial performance of SMEs in Nairobi City Centre. Studies also focused on the adoption and usage patterns of mobile banking, rather than investigating its direct influence on financial performance. Understanding the specific influence of mobile banking on SMEs' financial performance can provide valuable insights for both researchers and practitioners. However, there is a lack of comprehensive research examining its effects on the financial performance of SMEs in Nairobi City Centre.

Moreover, there are no previous studies on the combined impact of digital financial innovations. Previous studies have not comprehensively assessed the combined impact of various digital financial innovations on the financial performance of SMEs. SMEs may adopt multiple digital financial innovations simultaneously. Therefore, understanding their combined effects is crucial for developing knowledge on the connection between digital financial innovation and financial performance. As a result, the research seeks to address this gap by investigating the impacts of digital financial innovations on the financial performance of SMEs in Nairobi City Centre, Kenya. Therefore, it will help to understand the potential benefits and limitations of these innovations for SME development in the region.

1.3 Research Objectives

1.3.1 General Objective

The main objective of this research is to assess the effect of digital financial innovation on the financial performance of SMEs in Nairobi City Centre, Kenya.

1.3.2 Specific Objectives

The study's specific goals are as follows:

1. To examine the effect of digital payment systems on the financial performance of SMEs in Nairobi City Centre, Kenya.
2. To assess the effect of mobile banking on the financial performance of SMEs in Nairobi City Centre, Kenya.
3. To evaluate the effect of digital lending on the financial performance of SMEs in Nairobi City Centre, Kenya.
4. To examine the impact of customer payment technology on the financial performance of SMEs in Nairobi City Centre, Kenya.

1.4 Research Questions
1. What is the effect of digital payment systems on the financial performance of SMEs in Nairobi City Centre, Kenya?
2. What is the effect of mobile banking on the financial performance of SMEs in Nairobi City Centre, Kenya?
3. What effect does digital lending have on the financial performance of SMEs in Nairobi City Centre, Kenya?
4. What is the impact of customer payment technology on the financial performance of SMEs in Nairobi City Centre, Kenya?

1.5 Scope of the study
The study was limited to assessing the effect of digital financial innovation on the financial performance of SMEs in Nairobi City Centre, Kenya. The impact of product, market, and process innovations on the financial performance of SMEs were also key areas of the study. The study evaluated the effect of digital payment systems, mobile banking, online lending and agency banking on financial performance of SMEs in Nairobi City Centre. The research targeted 300 registered SMEs in the retail sector found in Nairobi’s city centre. The study took a duration of eight months to its ultimate completion.

LITERATURE REVIEW

2.1 Theoretical Review
The theoretical review of this study draws from three key theories: Diffusion of Innovation (DOI) Theory, Technology Acceptance Model (TAM), and Schumpeter’s Theory of Innovation

2.1.1 Diffusion of Innovation (DOI) Theory
The Diffusion of Innovation (DOI) Theory, proposed by Everett Rogers in 1962, outlines the process of how new ideas and technology spread through cultures. It consists of five stages that differ in terms of risk, uncertainty, time, and money required for adoption. This theory helps understand why some innovations are accepted more rapidly than others and has implications for marketing and business strategies. It can be applied to assess the adoption of digital financial innovations among SMEs in Nairobi, Kenya, identifying key influencers and factors affecting adoption rates. Critics argue that the theory oversimplifies the complexity of factors influencing innovation diffusion but acknowledge its relevance.

2.1.2 Technology Acceptance Model (TAM)
The Technology Acceptance Model (TAM), developed by Davis and Bagozzi in 1989, focuses on how people acquire and use technology. It emphasizes perceived utility and usability in shaping users’ attitudes and actual usage. It's useful for understanding how digital financial innovations impact SMEs in Nairobi by assessing user attitudes and their perceptions of technology’s value and ease of use. Critics argue that TAM doesn't consider all factors affecting technology adoption but is relevant for studying SMEs' perceptions of digital financial innovations.

2.1.3 Schumpeter’s Theory of Innovation,
Schumpeter's Theory of Innovation, introduced by Joseph Schumpeter in the early 20th century, suggests that economic growth results from creative destruction through new innovations replacing old ones. This theory highlights the role of entrepreneurs and their ability to bring new ideas, products, and technologies, leading to economic growth. Critics argue that it overemphasizes entrepreneurship and neglects other growth factors. However, it can explain how digital financial innovations disrupt traditional banking systems and create opportunities for SMEs.
2.2 Conceptual Framework

![Conceptual Framework Diagram]

2.3 Empirical review

2.3.1 Digital Payment Systems and Performance

Several studies examined the impact of digital payment systems on small and medium-sized enterprises (SMEs). Kwabena et al. (2019) focused on technology, organization, and environment to find that digital payment adoption significantly affects SME performance. Sakanko and David (2019) studied Nigerian SMEs and found that electronic payment systems, including ATM, internet payments, e-payment cards, and mobile banking, enhance financial performance. They suggested improving security and reducing charges. Daud et al. (2022) emphasized the positive influence of digital marketing, finance, and payment on Indonesian SMEs and recommended digital literacy. Frank and Binaebi (2019) observed mixed outcomes in Nigeria, with electronic payment methods having a positive association except for point of sales transactions. They suggested greater investment in electronic payment systems and improved internet infrastructure. Lastly, Thankgod, Alhassan, and James (2019) found that ATM had an insignificant contribution, while POS and internet banking significantly influenced SME profitability.
2.3.2 Mobile Banking and Performance
Several studies have explored the impact of mobile banking on small and medium enterprises (SMEs) in different regions. Muchiri (2018) conducted research in Nairobi City Centre, Kenya, and found that SMEs have adopted mobile banking, leading to increased customer base, improved business transactions, higher profits, and enhanced business efficiency. Bagudu, Mohd Khan, and Roslan (2017) focused on Nigeria and determined that SMEs benefit significantly from mobile banking, recommending its continued use for competitiveness. Uwamariya, Loebbecke, and Cremer (2020) examined how mobile banking can reduce transaction costs and default rates, promoting financial inclusion and sustainability for SMEs, particularly in emerging economies.

2.3.3 Digital Lending and Performance
Several studies have explored the impact of digital financial services on Small and Medium Enterprises (SMEs). Dong et al. (2020) investigated the influence of Internet finance on SMEs, finding a negative effect on liquidity but positive impacts on profitability and security, especially in city SMEs. Odhiambo and Ngaba (2019) focused on e-banking in Kenya, revealing that e-banking strategies improved SMEs' financial performance. Mbah and Obiezekwem (2019) found a positive association between electronic banking services and SME performance in Anambra State, Nigeria, emphasizing the need for improved security. Njoroge and Mugambi (2018) highlighted the benefits of mobile and Internet banking for Kenyan SMEs, though security risks were also noted. Policymakers were encouraged to leverage these findings for SME growth and financial performance improvements.

2.3.4 Customer Payment Technology and Performance
A series of studies explored the impact of payment system innovations and electronic banking technologies on the performance of banks in different regions. Mohammed, Ibrahim, and Muritala (2022) investigated Nigerian commercial banks, finding that real-time gross settlement (RTGS) negatively affected return on assets, while mobile payment, POS transactions, and internet payment had positive impacts. Mustafa (2018) highlighted the global growth of electronic payment systems and their positive influence on bank performance. Sakanko and David (2019) observed that e-payment systems improved the financial performance of microfinance banks in Niger state, Nigeria. Wachira and Ondigo (2019) showed a significant correlation between technological innovation and Kenyan commercial banks' profitability. Monyoncho (2016) discussed how various e-banking technologies in Kenya improved bank performance. These studies collectively emphasize the benefits of payment system innovations and electronic banking technologies on bank performance in different contexts.

2.5 Critique of Existing Literature
The theoretical foundation upon which this study is anchored is not limited to criticism based on their shortcomings in addressing critical elements that affect financial performance of SMEs. For instance, it highlights concerns about the oversimplification of innovation diffusion theory, particularly its failure to account for broader societal and economic factors impacting technology adoption. It points out that models like the Technology Acceptance Model (TAM) are criticized for their inability to explain user behavior and predict technology adoption accurately (Hai & Alam Kazmi, 2015; Lim, Osman, Salahuddin, Romle, & Abdullah, 2016).

Another criticism is the subjective nature of behavioral evaluation in TAM, with suggestions to use behavioral expectations instead of intentions. Additionally, it critiques the Schumpeter theory of innovation, emphasizing the importance of uncertainty rather than innovation in determining profits, and it challenges the notion that entrepreneurs don't bear risks (Napitupulu, 2017; Torres, & Gerhart, 2017).

The statement also introduces two studies on electronic payment systems and mobile banking in SMEs. The first study in Nigeria shows that electronic payment systems can significantly improve financial performance and recommends security enhancements and reduced charges. The second study explores how mobile banking can reduce transaction costs and defaults while promoting financial inclusion in Urwego bank (Sakanko & David, 2019).
However, it notes limitations in the scope and measurement of these studies, emphasizing that the current research focuses on financial performance in terms of revenue growth, return on equity, and return on investment.

2.6 Research Gaps

As much as many studies have been done relating to digital financial innovation and financial performance, many of such studies concentrated in the banking sector. For instance, Thankgod, Alhassan, and James (2019) studied the influence of electronic payments (ATM, internet banking, POS) on SME profitability. The study employed multiple regression and found that ATMs have no effect on the banks' profitability and are not statistically significant for that purpose. However, POS has a positive impact on bank profitability and is statistically significant for that purpose. Internet banking also has a positive impact on bank profitability. This study has a conceptual gap as it only addresses performance in reference to profitability, yet the current study looked at performance in terms of revenue growth, return on investment, and return on equity. At the same time, the study was based on the banking sector, which is different from the current study’s scope, hence the findings cannot be generalized to cut across both sectors.

Muchiri (2018) conducted a study to ascertain the impact of mobile banking adoption on the performance of small and medium-sized businesses in Nairobi County. The researcher’s aim was to determine the relationship between use of m-banking services and SME performance and used a descriptive survey approach to determine how the adoption of mobile banking affected the performance of SMEs in Nairobi County. The study considered 176 SMEs in Nairobi County. The study found that SMEs have continued to adopt mobile banking services because of its simplicity, affordability, convenience, security, accessibility, and diversity. The survey also showed that mobile banking has a larger client base since it makes payments simple, gives users more time to engage in other business operations, makes it simple to access bank funds, and facilitates more transactions, profitability, and operational effectiveness. This study is limited in addressing the effect of digital financial innovations conclusively in respect to financial performance of SMEs as it only addressed effect of mobile banking in terms of accessibility, convenience and security. The current study looked at mobile banking in terms of number of transactions, customers and revenue.

Consequently, Dong, Yin, Li and Liu (2020) examined the impact of internet finance on performance of commercial banks in China. The study focused on examining the impact of internet finance on the profitability, security, liquidity and growth as well as the comprehensive business performance of commercial banks. A critical observation points to a glaring contextual and conceptual gaps. For instance, the study explores internet finance with measures such as liquidity, security and profitability, whereas the current study explores internet banking system.

3.0 RESEARCH METHODOLOGY

The research design utilized a cross-sectional approach, suitable for assessing the financial performance of SMEs. The population comprised SME owners in Nairobi City Centre, with a sample size of approximately 95 businesses determined using a finite population correction factor. The primary research instrument was a questionnaire, distributed face to face, aimed at collecting data from the SMEs. A pilot study was conducted to refine the questionnaire, ensuring clarity and appropriateness of questions. Validity was assessed through content, criterion, and construct validity, while reliability was checked by delivering the questionnaire twice to the same sample to ensure consistent results. Data analysis involved descriptive statistics for summarizing the data, inferential statistics, including regression analysis, for drawing population-based conclusions. Findings were presented using tables, charts, and graphs, with a focus on examining the impact of digital financial innovations on SME financial performance. The study used the following linear regression model

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon \]

Where, \( Y \) = Financial performance
\( \beta_0, \beta_1, \beta_2, \beta_3, \beta_4 \) = coefficients
\( X_1 \) = digital payment systems
\( X_2 \) = mobile banking systems
Findings and Discussion

4.1 Descriptive Statistics
This study sought to establish the effect of financial innovations on financial performance of small and medium size enterprises in Nairobi city centre. The study used descriptive analysis to observe the trends, mean and dispersion of responses as relation to the objectives of the study. The study sought to establish the effect of digital payment systems, mobile banking, digital lending and customer payment technology on financial performance of SMEs in Nairobi city centre.

Table 4.1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital payment systems</td>
<td>95</td>
<td>2.80</td>
<td>4.40</td>
<td>3.7263</td>
<td>-.479</td>
<td>-1.119</td>
</tr>
<tr>
<td>Mobile banking</td>
<td>95</td>
<td>2.67</td>
<td>4.83</td>
<td>3.7754</td>
<td>.174</td>
<td>-1.411</td>
</tr>
<tr>
<td>Digital lending</td>
<td>95</td>
<td>2.80</td>
<td>4.80</td>
<td>3.8484</td>
<td>.152</td>
<td>-1.421</td>
</tr>
<tr>
<td>Customer payment technology</td>
<td>95</td>
<td>2.20</td>
<td>4.00</td>
<td>3.3916</td>
<td>.025</td>
<td>-.809</td>
</tr>
<tr>
<td>Financial performance</td>
<td>95</td>
<td>0.0868</td>
<td>0.4761</td>
<td>0.250881</td>
<td>0.322</td>
<td>-0.111</td>
</tr>
</tbody>
</table>

4.1.1 Digital Payment Systems
The minimum value of 2.80 and the maximum value of 4.40 for digital payment systems represent the range of responses among SMEs in the Nairobi City Centre. The minimum value suggests that there are SMEs with relatively lower adoption levels. The maximum value indicates that some SMEs have a relatively higher level of adoption. The mean score for digital payment systems is 3.7263. The results indicate that SMEs in Nairobi City Centre moderately adopt digital payment systems. The low standard deviation of 0.50534 suggests that the responses are relatively close to the mean. Therefore, it shows there was limited variability in adopting digital payment systems among the SMEs. The negative skewness of -0.479 suggests that the distribution of responses is slightly skewed to the left. Therefore, it shows that SMEs tend to adopt less digital payment systems than higher adoption. The kurtosis of -1.119 indicates that the distribution is platykurtic. The statistics show that it has thinner tails and is less peaked than a normal distribution. These findings also agree with the views of Frank and Binaebi (2019) studied how electronic payment methods affected the performance of SMEs and found that ATM, internet banking, and mobile banking had a positive association with the financial performance of small and medium enterprises. Kwapena et al., (2019) also had similar observation that attributed digital payment system affected the performance of SMEs. The research found that, along with organizational, technological, and environmental variables, the adoption of digital payment systems has a significant influence on the performance of SMEs.

4.1.2 Mobile Banking
The minimum value of 2.67 and the maximum value of 4.83 for mobile banking indicate a wider range of adoption levels than digital payment systems. The minimum value suggests that some SMEs have relatively lower adoption levels. The maximum value suggests that there are SMEs with significantly higher levels of mobile banking adoption. The mean score for mobile banking is 3.7754. Therefore, it suggests that SMEs in Nairobi City Centre have a moderate level of adoption of mobile banking. The standard deviation of 0.69606 indicates a moderate amount of variability in the adoption of mobile banking among SMEs. Moreover, the positive skewness of 0.174 suggests a slight rightward skew. The results show a slightly higher presence of...
SMEs with higher adoption of mobile banking. The kurtosis of -1.411 indicates a platykurtic distribution. The negative kurtosis indicates a platykurtic distribution. Therefore, the distribution is relatively flat and less peaked than a normal distribution. In conclusion, the findings conform with the observation made by Muchiri (2018) that mobile banking make businesses increase their customer base, improve business transactions, increase profits, and improve business efficiency thereby improving their financial performance.

4.1.3 Digital Lending
The minimum value of 2.80 indicates that SMEs have relatively lower levels of engagement in digital lending. The maximum value of 4.80 for digital lending shows that most had a higher engagement. The mean score for digital lending is 3.8484. The statistics indicate that SMEs in Nairobi City Centre have a moderate level of engagement in digital lending. The standard deviation of 0.71680 shows moderate variability in the adoption of digital lending among SMEs. The positive skewness of 0.152 suggests a slight rightward skew. The statistics show that SMEs may have a slightly higher presence with higher engagement in digital lending. The kurtosis of -1.421 indicates a platykurtic distribution. The results imply that the distribution is less peaked and has thinner tails compared to a normal distribution. Dong et al., (2020) also contend that internet financing negatively affects SMEs liquidity. The results also show that it positively influences their profitability and security and that, the development of Internet financing has encouraged SMEs to improve their performance. The researchers conclude that the impact of internet finance on different types of SMEs is heterogeneous, with the significant effect on performance of small and medium enterprises. Similarly, Mbah and Obiezekwem (2019) studied the association between electronic banking services and the performance of SMEs in Anambra State, Nigeria and found a positive association between the utilization of electronic banking services and the performance of SMEs.

4.1.4 Customer Payment Technology
Agent banking had a narrow range of responses. It had a minimum value of 2.20 and a maximum value of 4.00. The results suggest that most SMEs have moderate utilization of customer payment technology with a mean score 3.3916 and a standard deviation of 0.45092, an indication of closeness to the mean. The statistics indicate that SMEs in Nairobi City Centre have a moderate level of utilization of customer payment technology. This conforms with findings of Wachira and Ondigo (2019) who found that bank customer service representatives valued technology advancements. Furthermore, the findings showed a favorable and significant correlation between banks’ profitability and the implementation of several technological advancements, such as customer independent technology, customer assisted technology, and customer transparent technology. The low standard deviation of 0.45092 suggests relatively little variability in adopting customer payment technology among SMEs. The positive skewness of 0.023 indicates a very slight rightward skew. The results show that there may be a slightly higher presence of SMEs with higher utilization of customer payment technology than those with lower utilization. The kurtosis of -0.809 suggests that the distribution is slightly platykurtic but closer to a normal distribution. This is in line with the views of Mohammed, Ibrahim and Muritala (2022) who investigated the impact of payments system innovations on Nigerian commercial banks’ performance and found that RTGS had a negative influence on the return on assets for commercial banks in Nigeria, whereas mobile payment, POS transactions, and internet payment had favorable and significant impacts on performance.

4.1.5 Financial Performance
The minimum value of 0.0868 and the maximum value of 0.4761 for financial performance represent SMEs' financial performance range. The minimum value indicates that some SMEs have very poor financial performance. The maximum value suggests that there are SMEs with relatively better financial performance. The mean score for financial performance is 0.252081. Therefore, the financial performance of SMEs in Nairobi City Centre is at a relatively low level. The standard deviation of 0.0771795 is relatively low. Therefore, there was limited variability in financial performance among the SMEs. The positive skewness of 0.322 indicates a slight rightward skew. The results suggest a slightly higher presence of SMEs with better financial performance. The kurtosis of -0.111 suggests that the distribution is closer to normal (Charles, & Benson Ochieng, 2023).
4.2 Inferential Statistics
4.2.1 Correlation Analysis

The researcher used correlation analysis to measure the strength of the linear relationship between the variables of the study and computation of their relationship. For this study, Pearson correlation coefficient was used to measure the strength of the relationship between the independent variables; digital payment systems, mobile banking, digital lending and customer payment technology and the dependent variable, financial performance.

The Pearson correlation coefficient (r) was used to establish the degree of relationship between the variable. Pearson correlation coefficient (r) is a statistical measure of strength of linear relationship between paired data. It is denoted by letter (r) and is by design constrained as -1< r < +1. Positive values indicate positive linear correlation; negative values indicate negative linear correlation; 0 indicates no linear correlation; the closer the value is to 1 or –1, the stronger the linear connection. If the coefficient of correlation between two variables is more than 0.5, they are considered to be correlated. If any two predictor (independent) variables have a correlation, one of them must be eliminated from the analysis (Yule & Kendall 1991). As can be seen in table 4.7, none of the predictor variables have a coefficient of correlation greater than 0.5, hence they were all included in the model.

Table 4.2: Pearson Correlation

<table>
<thead>
<tr>
<th>Digital payment systems</th>
<th>Pearson Correlation</th>
<th>Mobile banking</th>
<th>Digital lending</th>
<th>Customer payment technology</th>
<th>Financial performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital payment system</td>
<td>1</td>
<td>.786***</td>
<td>.894**</td>
<td>.692**</td>
<td>.763</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.004</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Mobile banking</td>
<td>Pearson Correlation</td>
<td>.786**</td>
<td>1</td>
<td>.867**</td>
<td>.951***</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td>.000</td>
<td>.013</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Digital lending</td>
<td>Pearson Correlation</td>
<td>.894**</td>
<td>.867**</td>
<td>1</td>
<td>.833**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.045</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Customer payment technology</td>
<td>Pearson Correlation</td>
<td>.692**</td>
<td>.951**</td>
<td>.833**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Financial performance</td>
<td>Pearson Correlation</td>
<td>.763</td>
<td>.556</td>
<td>.486</td>
<td>.349</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td>.004</td>
<td>.013</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
</tbody>
</table>

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

The correlation coefficient 0.763 suggests a very strong positive linear relationship between financial performance and SMEs' utilization of digital payment systems in the Nairobi City Centre. The positive correlation indicates that as the utilization of digital payment systems increases, there is a tendency for financial performance to improve significantly.

The correlation coefficient of 0.556 also indicates a moderate positive linear relationship between financial performance and SMEs' adoption of mobile banking. The positive correlation suggests that as the use of mobile banking rises, there is a tendency for financial performance to improve moderately.

The correlation coefficient of 0.486 suggests a slightly stronger, but still moderate, positive linear relationship between financial performance and engagement in digital lending by SMEs. This positive
correlation implies that as SMEs engage more in digital lending, there is a tendency for their financial performance to improve, but the effect is moderate. The correlation coefficient of 0.349 shows a weak positive linear relationship between customer payment technology and financial performance of SMEs. This positive correlation suggests that as SMEs utilize agent banking services more, there is a slight tendency for their financial performance to improve, but the relationship is very not strong.

4.2.2 Regression Analysis
The study employed regression analysis to ascertain the relationship between the dependent and independent variables (Chemgorem, & Njeru, 2023). The model was thereafter put through a battery of tests to determine its level of satisfaction. The aim was to establish a linear relationship between the dependent variable and the independent variables.

Table 4.3: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.643&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.562</td>
<td>.440</td>
<td>.0768033</td>
<td>1.945</td>
</tr>
</tbody>
</table>

From the above Table 4.8, the R Square measures the proportion of variance in financial performance explained by the model's independent variables. R Square value is 0.562. Therefore, approximately 56.2% of the variance in financial performance is explained by customer payment technology, digital payment systems, digital lending and mobile banking. The high R-squared value of 56.2% suggests that the independent variables sufficiently predict the financial performance of Small and Medium Enterprises (SMEs) in Nairobi City Centre. The results imply that the independent variables explain the majority of the variability in financial performance. Moreover, the researcher observed that the remaining 43.8% relates to other variables not covered by this study.

Values between 1.5 and 2.5 are considered acceptable and indicate no strong autocorrelation. A score near 2 indicates that there is no positive or negative autocorrelation in the residuals. The Durbin-Watson statistic is 1.945. The value of 1.945 falls within this acceptable range. Therefore, it indicates no strong autocorrelation in the residuals of the regression model.

4.2.3 Analysis of Variance
The analysis of variance (ANOVA) test was used to determine the significance of the model in this study. This was done expressly to see if the variation in the independent variables could account for the observed variance in the outcome (Dean & Illowsky 2013). The outcomes were presented in Table 4.9 below:

Table 4.4: ANOVA<sup>a</sup>

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.029</td>
<td>4</td>
<td>.007</td>
<td>4.872</td>
<td>.002&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>.531</td>
<td>90</td>
<td>.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.560</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial performance
b. Predictors: (Constant), Agent Banking, Digital payment systems, Online Lending, Mobile Banking

The F-statistic is the ratio of the mean square for regression to the mean square for residuals. The F-statistic tests whether the predictors collectively have a statistically significant impact on financial performance. An F statistic greater than 1 indicates that there is some degree of variability among the group means being compared in the regression model. The F statistic is used to assess whether the differences among the group means are statistically significant. The significance level (Sig.) related with the F-statistic is 0.002. The ANOVA results indicate that F-statistic is 4.872 which is significant at p-value of 0.002, hence an indication
that the regression relationship was significant in predicting how the independent variables - digital payment systems, mobile banking, digital lending and customer payment technology affect financial performance of SMEs in Nairobi city centre. The findings show that the predictors have a statistically significant effect in explaining the variation in financial performance.

4.2.4 Regression Model Coefficients

The Beta coefficients is the size of the coefficient for each independent variable that gives the size of the effect that variable is having on the dependent variable. The sign on the coefficient (positive or negative) gives the direction of the effect. In regression with a single independent variable, the coefficient reveals how much the dependent variable is expected to increase (if the coefficient is positive) or decrease (if the coefficient is negative) when that independent variable increases by one. The results of the coefficients are shown in Table 4.5 below:

Table 4.5: Beta Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>3.861</td>
<td>.176</td>
</tr>
<tr>
<td>DPS</td>
<td>.449</td>
<td>.290</td>
<td>.264</td>
</tr>
<tr>
<td>MB</td>
<td>.223</td>
<td>.124</td>
<td>1.784</td>
</tr>
<tr>
<td>DL</td>
<td>.345</td>
<td>.119</td>
<td>2.154</td>
</tr>
<tr>
<td>CPT</td>
<td>.304</td>
<td>.165</td>
<td>.178</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Performance
b. DPS (digital payment systems), MB (mobile banking), DL (digital lending), CPT (customer payment technology)

The regression equation represents the relationship between the dependent and independent variable. The regression equation is:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon \]

The results in table 4.10 above, show that of the four independent variables; digital payment systems, mobile banking systems, digital lending systems and customer payment technology had a significant effect on financial performance of SMEs in Nairobi in city centre. Digital payment systems had the greatest effect on financial performance of SMEs in Nairobi, with \( B = 0.449 \). This means that for every one positive unit increase in digital payment systems would lead to a 0.449 units increase in financial performance of SMEs in Nairobi holding all other variables. This was followed by digital lending systems, with \( B = 0.345 \), meaning that if digital lending systems increases by one positive unit, financial performance of SMEs in Nairobi would positively increase by 0.345 units holding all other variables constant. The third variable that had effect on financial performance was customer payment technology with \( B = 0.304 \) which means that if customer payment technology is increased by one positive unit, financial performance of SMEs in Nairobi would increase by 0.304 units holding all other variables constant. Mobile banking systems had the least significant effect with \( B = 0.223 \) units and this meant that a one-unit positive increase in mobile banking systems would cause a 0.223 units increase in the financial performance of SMEs in Nairobi, holding all other variables constant.

The result also indicates that all the four independent variables; DPS, MB, DL and CPT had a p-value of less than 0.05, hence an indication that all the independent variables predicted the dependent variable significantly. Using the values of the coefficients Beta from the regression coefficient Table 4.10 the established multiple linear regression equation was obtained as follows

\[ 3.861 = 0.449X_1 + 0.223X_2 + 0.345X_3 + 0.304X_4 \]
The constant value from the regression equation is 3.861. The intercept represents the estimated financial performance when digital payment systems, mobile banking, digital lending, and customer payment technology are set to zero.

**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.**

### 5.1 Summary of the Findings

The primary objective of the research is to assess the effects of digital financial innovation on the financial performance of SMEs in Nairobi City Centre, Kenya. The summary of the findings examines the relationships between various digital financial services and the financial performance of Small and Medium Enterprises (SMEs) in Nairobi City Centre, Kenya. The study focused on digital payment systems, mobile banking, digital lending, and customer payment technology. The study aimed to ascertain whether these digital financial innovations impact the financial performance of SMEs in Nairobi city centre.

#### 5.1.1 Digital Payment Systems and Financial Performance

The research examined the impacts of digital payment systems on the financial performance of SMEs in Nairobi City Centre, Kenya. The analysis revealed a positive and significant linear relationship between adopting digital payment systems and financial performance. Moreover, this relationship was statistically significant, with a p-value of 0.004 which is less than the typical significance level of 0.05. Therefore, there is evidence to draw the conclusion that digital payment systems significantly affect the financial performance of SMEs in Nairobi City Center. Therefore, adopting digital payment systems significantly influence the financial performance among SMEs in the Nairobi City Centre.

#### 5.1.2 Mobile Banking and Financial Performance

The study also aimed to evaluate the influence of mobile banking on the financial performance of SMEs in Nairobi City Centre. The findings indicated a positive and significant linear relationship between mobile banking adoption and financial performance. The relationship was statistically significant (p-value 0.013< 0.05). Thus, there was sufficient evidence that suggests that mobile banking significantly affects the financial performance of SMEs in Nairobi City Centre. This is because the positive effect of mobile banking on financial performance is not statistically supported.

#### 5.1.3 Online Lending and Financial Performance

The research found a positive and significant linear relationship between digital lending systems and financial performance. The association was statistically significant because the p-value was less than 0.05. Therefore, it suggests that digital lending had a significant and positive effect on the financial performance of SMEs in Nairobi City Centre. Increased digital lending system is associated with a significant increase in financial performance. The results imply that their financial performance tends to improve as SMEs engage more in digital lending. The findings are relevant to Dong et al. (2020) study, which found that online lending positively influences their profitability. The study's findings also align with Odhiambo & Ngaba (2019), who found that Internet banking and online lending significantly and positively affect financial performance. Moreover, the study findings are also relevant to Mbah & Obiezekwem (2019), who found that electronic banking had a positive association with the performance of SMEs.

#### 5.1.4 Customer Payment Technology and Financial Performance

The research explored the effect of customer payment technology on the financial performance of SMEs. The analysis revealed a strong linear relationship between customer payment technology and financial performance. Even though, this relationship was statistically significant (p-value < 0.05), it moderately affected financial performance of SMEs. The study therefore, found that there was sufficient evidence to conclude that customer payment technology significantly impacts on the financial performance of SMEs in Nairobi City Centre. These findings suggest that SMEs that embrace customer payment technology, will have a potential avenue to improve their financial performance as most customers prefer cashless payment systems which are considered more secure, guarantee customer experience with a worldwide reach to global businesses.

### 5.2 Conclusion of the study

The finding implies that SMEs in Nairobi City Centre do not experience significant improvements in their financial performance solely by adopting digital payment systems. The findings suggest that other factors are
more influential in determining the financial performance of these businesses. Therefore, SMEs should consider investing in digital payment systems and focus on other strategies to improve their financial performance.

The findings indicate that mobile banking also does not significantly impact financial performance statistically. The results suggest that SMEs should not solely rely on mobile banking adoption to improve their financial outcomes. Even though mobile banking can provide convenience and efficiency in financial transactions, it may not directly translate into enhanced financial performance. Therefore, SMEs should explore a more comprehensive approach to financial management.

The statistically significant and positive relationship between online lending engagement and financial performance highlights an opportunity for SMEs in the Nairobi City Centre. Those SMEs that actively engage in online lending may experience improvements in their financial performance. The finding suggests that SMEs should explore and consider leveraging online lending platforms and services to access capital. The credit leads to business growth and improved financial results.

The lack of a statistically significant impact of agent banking on financial performance implies that SMEs may not see significant improvements in their financial outcomes solely by utilizing agent banking services. Therefore, SMEs should focus on other strategies that may directly and significantly influence their financial performance.

5.3 Recommendations

SMEs in the retail sector should recognize that various factors influence financial performance. While these digital tools may offer convenience, they are not guaranteed to boost financial results. SMEs should consider optimizing their cost structures, enhancing product offerings, and exploring different revenue streams. A well-rounded approach to financial management will help to mitigate risks associated with relying solely on one aspect of digital finance. The research found that digital lending has a statistically significant and positive impact on financial performance. Therefore, SMEs in the retail sector should invest in digital lending options that suit their business needs. Access to additional capital through digital lending platforms can facilitate business expansion. It also leads to investments in growth initiatives for the SMEs. Therefore, it is recommended for SMEs to assess the terms and conditions of digital loans to ensure they align with their long-term financial goals.

Moreover, the research found a significant effect of customer payment technology on financial performance of SMEs. Therefore, SMEs in the retail sector should integrate various customer payment technology like QR codes, P2P, etc. in their business organizations to enable them reach many global customers. SMEs can allocate resources to more effective financial strategies that constructively align with their business goals. Digital payment systems were found to be critical and significant due to its strong positive effect on financial performance of SMEs. Therefore, it is recommended that SMEs in the retail sector should assess adopting these systems. Since many customers are now informed, there is need for SMEs and any other business organization to embrace digitization of its services to offer customer efficiency, flexibility, accessibility and customer experience. However, they should be cautious not to blindly invest in digital payment systems without a careful cost-benefit analysis and consideration of customer preferences which are essential before implementing the systems. Moreover, SMEs in the retail sector should focus on optimizing their business strategy. It should focus on creating a well-rounded approach considering every facet of its operations. The approach would lead to improved long-term sustainability.

The regulatory authorities should implement policies that protect SMEs and consumers in their interactions with digital financial service providers. The initiative should include preventing fraud, ensuring fair lending practices, and securing digital transactions and customer information safety. Data privacy and security regulations have to safeguard sensitive financial information both for the business and the customer at large.
The regulators must ensure their data is protected when using digital financial services. The regulators should also create an environment encouraging innovation in the financial sector. Regulatory authorities should work with industry players to develop frameworks that support the responsible introduction of new digital financial services. Based on the findings, SME owners should prioritize improving their digital financial literacy to understand digital financial services. The initiative will enable them to decide which services most benefit their business needs. SME owners should not only rely solely on digital financial innovations but should develop a culture that fosters diversification of their financial strategies to include traditional and digital financial services to serve their customers well.

### 5.4 Suggestions for Further Study

Academics should conduct further research to explore the factors that influence the impact of digital financial services on SME financial performance. Future studies should focus on examining industry-specific effects. They should also consider the role of financial literacy and the long-term sustainability of digital lending. The studies should also consider using longitudinal data to track the financial performance of SMEs over extended periods. The studies will provide valuable insights into the lasting effects of digital financial service adoption. Future studies should complement quantitative data with qualitative research methods. They should consider using interviews and focus groups. These methods will help uncover the qualitative aspects of SMEs' experience of digital financial services adoption. Future studies should also consider conducting similar studies in different geographical areas within Nairobi. The studies will help identify regional disparities and their underlying causes.

### References


[6]. Charles, M., & Benson Ochieng, S. (2023). Strategic Outsourcing and Firm Performance: A Review of Literature. *International Journal of Social Science and Humanities Research (IJSSHR)* ISSN 2959-7056 (o); 2959-7048 (p), 1(1), 20-29. [https://doi.org/10.61108/ijsshr.v1i1.5](https://doi.org/10.61108/ijsshr.v1i1.5)


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