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**EFFECT OF ADOPTION OF FINTECH PAYMENTS ON FINANCIAL  
PERFORMANCE OF COMMERCIAL BANKS IN MERU COUNTY, KENYA**

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**Abstract**

This study aimed to probe the effect of financial technology (Fintech) payment on the performance of marketable banks in Meru, Kenya. Fintech had surfaced as a disruptive force in the fiscal assiduity, offering new ways of delivering fiscal services to guests. The study explored the extent to which marketable banks in Meru had espoused Fintech and the impact it had on their performance. The study involved a check of commercial banks in Meru, Kenya, to gather information on their relinquishment of Fintech, as well as their fiscal performance. The study was anticipated to give perceptivity into the benefits and challenges of Fintech relinquishment in the banking sector in Meru, Kenya. The findings may be useful to commercial banks, policymakers, and other stakeholders in the fiscal assiduity in developing strategies to enhance the relinquishment and use of Fintech in the region. Results on regression study designated that there was a robust optimistic association ( $R=0.89$ ,  $p$ -value of 0.000) between adoption of financial technology payment and financial performance of commercial banks. The findings further indicated that fintech payments have a significant influence on financial performance of commercial banks.

**Keywords;** *Fintech Payments, Financial Performance, Commercial Banks*

**INTRODUCTION**

Following the global financial crisis of 2008, the financial industry is going through unheard-of transformations, primarily because of technological advancements, modifications in consumer behavior, and regulatory changes. Industry confidence has increased as a result of the crisis, and regulators have enacted stricter regulations to stop the mistakes that caused the crisis from happening again. These strict regulatory requirements have further altered the role of technology in finance. Companies in the technology and telecommunications industries, including as Google, Samsung, Apple, Orange, and Safaricom, have joined the market to offer services that were previously supplied by commercial banks (Africinvest, 2016). These companies are exempt from these laws, therefore they are able to compete with commercial banks.

According to KPMG (2017), the term "fintech" refers to businesses that use technology to achieve a competitive advantage and bring about disruption within the financial industry. However, there is not one single definition of fintech that is acknowledged by everyone. In

2018, Kelvin & Sung attempted to define fintech by soliciting the opinions of 200 people, including students and business people. They found that people do not have a clear understanding of what FinTech is and that there is a high level of resistance to FinTech adoption/acceptance due to this lack of understanding. However, from the information collected, they define fintech as an interdisciplinary discipline combining finance, technology management and innovation management.

Fintech makes financial processes more efficient through the use of technological solutions in innovative ways. These are companies that promise excellence, exceptional customer-focused service, and demonstrate their ability to do it better than anyone else in the market. To date, fintech advancements in the use of digital technologies have disrupted banking services such as payments, lending, customer acquisition, deposit movement, insurance, financial advice, and more. (KPMG, 2017). Fintech is upending conventional company structures in banking, insurance, and asset management. Finance, peer-to-peer services, remittances, and trading platforms are key areas of growth in the banking industry, which accounts for the majority of fintech investment (PwC, 2016). The move from fintech 2.0 to fintech 3.0 is currently underway (Kelvin & Sung, 2018). In the USA, a new firm named Square Capital started as a provider of inexpensive payment device services enabling small businesses to accept cards payments in 2015. Taking advantage of its unique access to financial data and flows of the users it served, it developed a highly competitive suit for financial services and it was expected to lend \$ 600 million by 2016 to small and medium enterprises. SoFi, a credit market place founded in 2011 to offer digital unsecured loans had issued more than USD\$9 billion loans by 2016 and expanded to offering personal finance, billing, payments, insurance and even pensions, (Gayatri Murthy et al, 2019). In 2014 only 8% of the US population was using mobile payment services but this number was expected to rise to 65% by 2019 largely to be driven by Google wallet, Samsung pay and Apple pay. By taking advantage of their extensive customer base these global technology companies are entering payment and financial services sector in a more aggressive way, (Africinvest, 2016).

In 2017, there were 5,043 fintech overall business efficiency, divided into the financial markets, capital management, health coverage, and real estate sectors. Among the 2,001 total global fintechs, 2,001 are linked to banking and financial markets. Banking operations account for 7%, capital raising accounts for 12%, financial management accounts for 23%, deposit and lending accounts for 26%, and payments accounts for 33%. This indicates that, with 65% of all fintechs having fallen under the classification of finance and capital markets, the banking industry terms of banking activities, deposits, lending, and pay-outs the largest beneficiary of fintech investment. It's crucial to keep in mind that these are new businesses entering the banking industry and stealing customers from the established financial institutions, not investments in banks.

Fintechs have brought efficiency in the business operations and in the financial sector by greatly reducing the cost of intermediation and at the same time increasing access to financial services through creating alternatives to access the services. This efficiency has been linked to the ability of fintechs to reduce information asymmetry through application of technologies such big data analytics enabled by artificial intelligence. The traditional banking institutions have suffered greatly from information asymmetry and their legacy information systems are slow in integrating with the modern technology, (Vives, 2017). Taking advantage of this low pace of adopting to technology by conventional financial institutions, fintechs have disrupted the financial sector by offering the services in more creative and innovative ways (Africinvest 2016).

Didenko's 2018 study highlights Kenya and South Africa as notable forces in their regions, not just for financial inclusivity, where most adults have access to bank or mobile money accounts, but also as significant fintech hotspots. Kenya boasts one of the biggest success

stories in fintech history. Until recently, Nairobi and Johannesburg were the sole representatives from Africa in the global catalogue of fintech hubs, joined lately by Lagos. Over 30 fintech startups are already operating in Kenya thanks to the M-Pesa-created innovation environment and the inadequate and discriminatory policies of the official banking sector. Open business and regulatory environments, an entrepreneurial society, a robust internet infrastructure, and a mobile telecommunications infrastructure are further important variables. The emergence of fintechs in the nation impacted aspects of competition in the banking sector at the same time, where competition originated outside the sector. With M-pesa, the new entrant attacked the core business of the established commercial banks, including lending, payments, and deposits, by siphoning off sizable deposits from the traditional banking system. This significantly hampered commercial banks' ability to act as a middleman and the method for generating loans, which is dependent on deposits held by banks. Banks responded in a variety of ways, such as the release of applications for mobile banking and collaborative partnerships with telecom companies to provide banking apps (Africinvest, 2016).

### **Statement of the Problem**

The digital revolution, sparked by technological advancements, has touched all industries, and banking is no exception. Among the different regions of the world, Kenya stands out as a hotbed for innovation in the fintech space, bolstered by the proliferation of mobile technology and a favourable regulatory environment. The incursion of giants in tech and telecom such as Google, Apple, Safaricom, and Orange has further driven this disruption, introducing novel business models and practices that threaten to upend traditional banking methods. Among the different research conducted on the topic, Kiilu's 2016 study notably assessed the impact of fintech businesses on Kenya's banking sector's financial performance. The study suggested that fintech companies had a positive and significant impact on the sector's performance. However, it primarily focused on mobile payments, leaving out other banking operations that could potentially be influenced by fintech. A subsequent study by Kemboi in 2018 examined the effects of fintech on the financial performance of Kenyan commercial banks, focusing on mobile banking, online banking, and agent banking. It was found that fintech had a substantial positive influence on the financial performance of these institutions. This research, however, lacked specificity in its examination of fintech's impact on different aspects of banking, choosing instead to adopt a more holistic view. While these studies have been instrumental in providing critical insights, there is a clear gap in research related to how fintech influences specific facets of banking operations. Aspects such as lending, risk management, customer service, and financial planning are all crucial components of the banking ecosystem that require a more nuanced exploration of fintech's impact.

Continuing this examination, Okello's 2016 study investigated the effects of ATMs, agent banking, and mobile banking on the Kenyan banking industry. Okello found that retail electronic payments, a service made possible by fintech, positively influenced the financial performance of Kenyan commercial banks. Similarly, a study conducted by Ngumi A in 2013 considered the impact of banking innovation on the financial health of commercial banks in Kenya. Factors such as ATMs, debit and credit cards, internet banking, electronic funds transfers, and POS terminals were taken into account. It was found that these innovations had a significant impact on the performance of the Kenya Commercial Bank, boosting its revenue, return on assets, profitability, and customer deposits. Such studies reiterate the crucial role that fintech innovations play in enhancing the economic performance of banks. They also emphasize the need for traditional banking institutions to adapt and incorporate these technological advancements to stay competitive in the rapidly evolving financial landscape. However, there is a notable distinction between the approach taken by these researchers and the actual changes occurring in the fintech space. While the former is focused

on evolving internal processes, the latter is more about a revolution originating from external sources that are targeting the same market niche as commercial banks. Previous research in the country has either focused on one area or generally addressed the impact of fintech on these areas of activity. Consequently, the industry lacks comprehensive knowledge on how fintech payment influences its financial performance from the perspective of these different revenue sources.

### **Research hypothesis**

**H<sub>0</sub>:** Adoption of fintech payment has no effect on financial performance of commercial banks in Meru County, Kenya.

## **LITERATURE REVIEW**

### **Diffusion of Innovation Theory**

The idea of the diffusion of innovations was first presented by Everett Rogers in the year 1962. This theory investigates how innovation spreads within an organization. An S-curve is used as a metaphor for the invention process in this hypothesis. This hypothesis was subsequently elaborated upon by Schumpeter (1934), who described the long wave theory of economic growth. In the context of this discussion, an industry grows as a consequence of a transition from one business cycle to another. This indicates that economic progress is achieved via the processes of creative destruction, in which novel techniques or products do not come from the past, but rather demolish it.

According to Bower and Christensen (1995), the incapacity of incumbent enterprises to adapt to shifting markets or advances in technology is one of the most important patterns that has been recognized. According to the findings of this research, the incumbents that are being threatened by the rise of fintech are the conventional financial institutions or banks. Christensen, Raynor, and McDonald (2015) referred to "low-end footholds or new-market footholds" as the genesis of disruptive technologies. When major firms ignore innovations that better respond to certain of their customers' requirements in order to cling too firmly to their already profitable high-margin clients, this may become problematic.

### **Technology Acceptance Model**

The Technology Acceptance Model (TAM), proposed by Fred Davis in 1989, establishes a link between user acceptance of new technologies and their perceived usefulness (PU) and ease of use (PEU). Since Davis first introduced the model in his doctoral thesis, it has been extensively utilized in research due to its efficacy in predicting user intentions. According to TAM, PU and PEU are two key constructs used to determine users' behavioral intentions towards using a specific technology. Davis contends that PU and PEU are fundamental components in elucidating and forecasting the acceptance and adoption of specific technologies. The main goal of TAM, as the authors indicate, is to highlight the consistency with which external factors impact individuals' internal intentions, beliefs, and attitudes towards technology acceptance. In this model, external factors have a moderating effect on the key constructs of PEU and PU, shaping internal users' opinions about technology adoption and acceptance.

While the PU and PEU constructs form the core of TAM, Davis later expanded the model to include additional factors that could affect user acceptance of technology. For instance, the TAM2 model incorporates cognitively utilitarian processes (job significance, output quality, outcome demonstrability, and perceived simplicity of use) and processes of social influence (subjective standards, voluntariness, and image) to provide a more comprehensive explanation of technology acceptance. Similar to this, the TAM3 model takes into account system attributes (such as functionality and dependability) as predictors of perceived simplicity of use.

Despite its limitations, TAM provides a robust theoretical foundation for understanding the adoption of financial technologies in Kenyan commercial banks and beyond. By focusing on

perceived usefulness and ease of use, the model highlights the critical factors that can either facilitate or hinder technology adoption. Furthermore, the model's focus on the moderating role of external factors underscores the importance of understanding the broader socio-cultural and organizational context in which technology adoption occurs. The Technology Acceptance Model offers a comprehensive framework for studying and predicting the acceptance and use of fintech innovations.

### **Empirical Literature Review**

According to a study by Karthika, Neethu & Lakshmi (2022), the introduction of fintech boosts the inclusion of financial services, giving banks the opportunity to acquire new customers, increase customer deposits and service commerce financial payments and loans. Fintech innovations allow banks to recruit customers via mobile phones, enabling banks to acquire new customers without incurring the recruitment costs associated with traditional banking processes. Hupa & Shinde (2022) support these findings by stating that acquiring new banking customers using traditional methods is a difficult task. Fintech makes it easier to recruit new customers remotely by helping banks advertise, provide new customer registration forms, receive and process new customer registrations without face-to-face.

Acquiring and retaining satisfied customers is a strategy that banks use to improve their performance. According to Murinde et al. (2022), Safiullah & Paramati (2022) and Vives (2017), FinTech innovations enable banks to attract new customers, provide improved and convenient banking services and maintain a cohort of satisfied customers. These innovations promote healthy relationships between bank employees and customers through online belvedere. In addition, they improve information sharing and communication, thereby strengthening client-bank relationships. Mulinder et al. (2022) find that fintech innovations allow banks to attract high-end customers. The characteristics of bank customers are the main determinants of their influence on bank performance. Fintech enables banks to attract tech-savvy customers who have high demand for various banking services. These customers increase the volume and scope of banking activities, thereby improving the performance of the bank. Banks use technological innovations to ensure customer satisfaction and loyalty. Financial institutions achieve this strategic goal by providing banking services that exceed customer expectations and ensure customer protection.

A study by Safiullah & Paramati (2022) reveals that major banks are leveraging fintech innovations to protect their customers by offering innovative and competitive banking products and services. Additionally, they claim that banks are using fintech to improve banking services to attract and retain existing and new customers. Similarly, Vives (2017) argues that fintech enables banks to provide non-discriminatory banking services to banks and non-banks, as strong as tech-savvy and non-tech-savvy services, by offering a variety of fintech innovations to customers across different backgrounds country. According to Murinde et al. (2022) show that fintech enables banks to provide digital solutions that meet customer needs, thereby enabling banking institutions to improve their performance.

According to the findings of a research conducted by Anifa et al. (2022), advances in fintech have had a major influence not just on payment processing but also on other financial services. The purpose of the study is to develop an understanding of the significance of innovations in financial technology, notably peer-to-peer lending and payment systems, in the banking industry. Research by Safiullah & Paramati (2022) supports these findings by highlighting the role of fintech in developing mobile deposit and peer-to-peer lending. Unlike Anifa et al. (2022) focuses on adoption of fintech by banking financial institutions, and analysis by Safiullah & Paramati (2022) focuses on fintech as a challenger to banking financial association The consideration by Vives (2017) scrutinized the influence of fintech on the banking sector, in particular examining how the adoption of fintech by new fintech entrants and traditional banks affects the payment of banking services, loan and investment

portfolios and the asset management, among others.

## METHODOLOGY

Descriptive research survey methodology was used in this study. The technique was the best appropriate for this study since it enables the quick collection of both qualitative and quantitative data from original sources. The 38 commercial banks operating in Meru County served as the study's subjects. Due to the small population size, banks were categorized into three categories using the census technique, with primary, secondary, and tertiary banks being determined by the central bank. Primary data was gathered using a questionnaire. Using SPSS data analysis software, this study used descriptive statistics data analysis approach for data analysis. Regression analysis was used in the study to estimate the relationship between the variables.

## RESULTS AND DISCUSSION

### Descriptive Statistics for Fintech Payment

The participants were provided with statements concerning Fintech payment practices, and they were asked to rate their agreement level with each practice as applied by the bank. Their responses were then utilized to calculate frequencies, means, and standard deviations to facilitate interpretation.

**Table 1: Descriptive Statistics for fintech payment**

Statements (N =87)	SD	D	N	A	SA	Mean	Std. Deviation
Fintech payments have improved the efficiency of banking operations.	0.60%	0.00%	1.90%	34.70%	62.80%	4.59	0.597
Fintech payments have increased the speed of financial transactions	0.00%	0.60%	2.50%	44.20%	52.70%	4.49	0.582
Fintech payment platforms have increased the accessibility and convenience of banking services for customers.	0.60%	0.00%	0.00%	35.00%	64.40%	4.62	0.558
Fintech payment solutions have enabled banks to reach a broader customer base.	0.60%	2.50%	3.20%	40.10%	53.60%	4.44	0.733
Fintech payment systems have improved the competitiveness of banks in the market.	0.00%	0.00%	5.70%	43.20%	51.10%	4.45	0.602
Fintech payments have improved customer satisfaction with banking services	0.00%	0.00%	1.30%	45.10%	53.60%	4.52	0.525

As per the answers presented, majority of the respondents (96.75%) strongly agreed with different statements on influence of fitech payment adoption and performance of commercial backs as supported by an average collective score of 4.52 and 0.600 standard deviation. This showed that the adoption of fintech payment in commercial banks has improved the efficiency of banking operations as supported by 97.5% of the respondents agreed on the

statement. At 96.90% respondents agreed that Fintech payments have increased the speed of financial transactions with a mean of 4.49 and a standard deviation of 0.582, 99.4% of the respondents strongly agreed that Fintech payment platforms have increased the accessibility and convenience of banking services for customers with a mean of 4.62 and a standard deviation of 0.55. A substantial 94.70% of participants agreed that Fintech payment platforms have enhanced the accessibility and convenience of banking services for clients, evidenced by a mean score of 4.44 and a standard deviation of 0.77. Regarding the statement that Fintech payment systems have bolstered the competitiveness of banks in the marketplace, 94.30% of respondents concurred. Meanwhile, a resounding 98.7% strongly agreed that Fintech payments have uplifted customer satisfaction levels in banking services, supported by a mean of 4.52 and a standard deviation of 0.525.

These findings draw parallels with prior studies that have explored the transformative effects of technology on banking services. Wawira (2011) highlighted the beneficial impact of agency banking, a technological innovation that lowers transaction costs, thereby positively influencing the financial health of commercial banks in Kenya. This idea that leveraging technology can lead to cost savings is also echoed in Alizadeh, Chehrehpak, and Zamanifard's (2020) research on Bank Keshavarzi Iran. They reported that the application of information technology in banking contributes significantly to the efficiency of the financial system by reducing time spent by customers and employees, cutting down costs, and facilitating seamless network transactions.

Similar themes are found in a myriad of other studies. For example, Hernando and Nieto (2007) indicated that the introduction of internet banking services significantly improves bank performance by extending the reach and improving customer service. Research conducted by Sultan (2011) suggested that technology helps financial institutions enhance their service offerings, ultimately leading to increased customer satisfaction and loyalty. Mosheni and Tahmasebipur (2016) provided further insight, stating that the use of technology can create a competitive advantage for banks, as it allows them to serve their customers better, faster, and at lower costs.

In this context, it's worth mentioning that the benefits of fintech are not restricted to the banking sector alone. As stipulated by Chishti and Barberis (2016), fintech's scope has the potential to revolutionize all financial services by making transactions more accessible, convenient, and cost-effective. This suggests that our findings align with broader academic discourse on the subject, further validating the results of this study.

### **Descriptive Statistics for Financial performance of commercial banks**

This particular variable was gauged by posing questions related to the potential increase in income as a result of financial technology adoption and the possible overall profit boost due to the use of digital banking technology. The respondents were asked to describe the extent to which they think the bank's revenue has increased as a result of these services in order to determine the impact of electronic banking services on these earnings.

The majority of participants, 53%, felt that the bank's income increased moderately due to the implementation of digital banking services. 35% of the respondents believed that these services significantly enhanced the bank's income. Only 2% of the respondents thought that there was no increase in income, while 5% indicated that the income increase was substantial, and another 5% felt the increase was marginal.

In support of these findings, a study by Hassan, Marimuthu, and Johl (2015) established that digital banking services, such as mobile and internet banking, positively influenced the profitability of banks due to increased customer convenience, reduced transaction costs, and the ability to reach a larger customer base. Contrarily, some studies argue that the increased costs associated with the implementation and maintenance of digital banking services could offset the additional income generated. For instance, a study by DeYoung (2005) found that

while digital banking services can increase income through fees and cost savings, the initial costs, ongoing maintenance, and cybersecurity costs associated with these platforms could lead to a net decrease in profitability in certain cases. In addition, a study by Deloitte (2016) indicated that while fintech innovations have the potential to increase bank income, they also present new challenges, including the need for significant investments in digital infrastructure and security, as well as increased regulatory scrutiny. The research highlighted that these factors can create considerable costs, which may offset the potential income increase.

Participants were inquired about the extent to which they believed the bank's overall profits had risen due to the introduction of digital banking services, 58% of respondents perceived a moderate increase in the bank's overall profit due to the implementation of digital banking technology. 24% of respondents believed that the profits significantly increased, while 11% felt the increase was very significant. On the other hand, 6% of participants thought the profit increase was only marginal, and none of the respondents believed that there was no increase in profit. This suggests that the widespread use of digital banking technology, such as internet and mobile banking, has contributed to improved financial performance for banks. These findings align with the study by Kathuo (2015), which found that banks reported a surge in profits due to the usage of mobile banking technology. However, other researchers provide a different perspective. For instance, DeYoung (2005) suggested that the introduction of digital banking technology could have cost implications that may offset increases in profit. The study highlighted that the upfront investment, maintenance costs, and the need for robust cybersecurity could result in significant expenses, reducing net profitability.

Moreover, a study by Ayadi et al. (2019) argued that while digital banking could improve operational efficiency and reduce transaction costs, it might not necessarily lead to a substantial profit increase. They found that the aggressive competitive environment created by digital banking could lead to narrower profit margins as banks reduce fees and interest rates to attract and retain customers.

These varying views illustrate the complex interplay between digital banking technology and bank profitability, suggesting that effective strategic planning and management are critical to ensure that the benefits outweigh the costs.

### Regression Analysis

**Table 2: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.89 <sup>a</sup>	.792	.786	0.02926

a. Predictors: (Constant), Fintech payment

b. Dependent Variable: Financial performance

The correlation coefficient is 0.89 demonstrates that there was a considerable positive link between the adoption of Fintech payment and the financial success of commercial banks. Fintech payment is responsible for 79.2% of the differences in the financial performance of commercial banks. The other 20.8 percent of the variability are all accounted for by variables that were left out of this model.

**Table 3: Analysis of variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.972	1	75.972	549.678	.000 <sup>b</sup>
	Residual	11.748	85	0.138		
	Total	87.720	86			

a. Dependent Variable: financial performance

b. Predictors: (Constant), Fintech payment

The observed F-statistics have a p-value of 0.000, or less than 5% ( $F(1, 85) = 549.678$ ,  $p=0.000$ ). Thus, Fitech payment and the financial performance of commercial banks in Meru County are significantly correlated.

**Table 4: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.36	0.231		5.887	.000
Fintech payment	0.705	0.172	0.702	4.099	.000

a. Dependent Variable: Financial performance

The hypothesis;  $H_0$ : Adoption of fintech payment has no significant effect on financial performance of commercial banks in Meru County, Kenya is rejected. It follows that the performance of commercial banks in Meru County is significantly and favorably impacted by the fintech payment.

### Conclusion

The investigator scrutinized the impact of adopting fintech payment systems on the financial performance of commercial banks in Meru County. The results indicated that a significant majority of the respondents agreed vehemently with various statements regarding the impact of fintech payment adoption on the performance of commercial banks. The research concluded that there is a substantial and positive correlation between the adoption of fintech payment systems and the financial performance of commercial banks. In other words, the evidence suggests that the adoption of fintech payment systems does indeed significantly impact the financial performance of these institutions.

### Recommendations

There is a need to adopt fintech payment to improve the efficiency of banking operations and to increase the accessibility and convenience of banking services for customers.

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