

## INFLUENCE OF FINANCIAL TECHNOLOGY ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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### **Abstract**

**Purpose:** The purpose of the study was to establish the influence of financial technology (Fintech) on financial performance of commercial bank in Kenya listed in the Nairobi Securities Exchange.

**Methodology:** The independent variable for this quantitative study were digital loans, transactions and accounts, ATMs and bank agents while bank's financial performance was the dependent variable. Secondary quarterly data was collected for a period of five years. Regression analysis was used to establish the relationship between the variables under study.

**Findings:** The study findings pointed to a statistically significant influence of Fintech on financial performance of commercial banks. At 95% confidence level, the number of digital loans processed, digital transactions, digital accounts acquired, ATMs and bank agents were found to have 22.7%, 37.91%, 22.41%, 2.6% and 69.9% respectively influence on financial performance of the listed commercial bank in Kenya from 2014 to 2018.

**Implications:** The overall conclusion was that financial technology positively influences the financial performance of commercial banks in Kenya. Specifically, Fintech banking applications have changed the business model of commercial with banks adopting digital banking. The emerging technologies have also influenced alternative business channels (ABC) further shifting the customer traffic away from the branches thereby cutting down on operational costs.

**Value:** The study findings inform the regulatory framework needed to ensure the sector benefits the economy with minimal adverse disruptions. They inform banks how they can optimally employ Fintechs to enhance their financial performance. The findings add to the scholarly knowledge of Fintechs and their disruption on banking, and act as a reference for future studies.

**Keywords:** Financial Technology (Fintech), Financial Performance, Financial Disruptions, Incumbents, Financial Sector.

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## **1.1 Introduction**

The financial sector is undergoing unprecedented changes globally mainly driven by technological innovations, changes in customer behaviours and changes in regulations after 2008 global financial crisis. The crisis brought about trust concerns in the industry with regulators coming with more stringent regulations to avoid a repeat of what precipitated the crisis. The role of the technology in the financial sector has since changed in a greater way as a result of these stringent regulatory measures. Technology and telecommunication companies such as Google, Samsung, Apple, Orange, and Safaricom among others which are not subject to these regulations have come into the sector to offer services traditionally offered by commercial banks (Africinvest, 2016).

According to IMF (2019), Fintech refers to the technologically enabled financial innovation that could result in new application, business model processes or product with an associated material effect on financial markets, institutions and provision of financial services. Alt and Puschmann (2012) identified driving forces that led to emergence and growth of Fintechs other than global financial crisis, as the growing pace of innovative downstream IT solutions and development of digital services that were limited in scope and were customer specific in provision of financial services.

Fintech combines finance with technology or computer application that enables availing of financial services in a flexible and customer centric way with or without intervention of traditional financial institutions. This option of leaving financial institutions out in the provision of financial services leaves traditional financial institutions with no options but changing with the current technological changes (Parameshwar et al., 2019).

### **1.1.1 Technological Innovations and Financial Industry**

The technological innovations brought by the new entrants into the sector have completely transformed the business environment in the sector with enormous opportunities being created within and without the sector. Although innovative technologies such as the ATM and electronic trading have long been a part of financial services, the combination of a post-financial crisis regulatory environment and an exponential increase in technological innovation with technologies such as smartphones, artificial intelligence, and big data analytics, have hugely transformed the financial industry (PWC, 2017). These transformations made it easier for technology start-ups to enter the financial services industry and offer products and services directly to consumers and businesses, including incumbent financial institutions. Traditional financial institutions are increasingly investing resources in innovation in response to these developments (NEC, 2017).

The emergence of non-banks and new start-up businesses that exhibited high level of creativity and dynamism while offering focused financial services was also cited as having played a role in the financial technology development (Senyo & Ellis, 2020). There was also a change behaviour by customers towards online and multi-bank relationship that was fuelled by the diffusion of mobile devices and digital financial services. All these driving forces had their base on the failure of high investment in IT by incumbents to drive digital transformation of business processes and business models (Gopalana, 2012).

### **1.1.2 Financial Technology and the Role of Financial Sector in the Economy**

The new entrants unbound by the strict financial sector regulations have continuously and increasingly disrupted the industry resulting in instability in the sector's business environment. Denertzis, Meler & Wolff (2017) claimed that this has led to the redefinition of the role of financial sector in the economy from that of provider of products and services to that of an enabler, consequently shifting the importance of the industry from bank to banking. The new firms disrupting the industry are commonly referred to as Fintechs. These new firms have attacked the industry from different organizational fronts such as culture, ways of working, how problems are solved, customer engagement, product development and new ideas of leadership (PWC, 2017).

According to Deloitte (2017), there were 5,043 Fintechs globally by 2017 categorised into banking and capital markets, investment management, insurance and real estates. The banking and capital markets makes 2,001 of the total global Fintechs further broken down into banking operations 7%, capital raising 12%, financial management 23%, deposit and lending 26% and payments 33%. From this it can be seen that the banking sector in terms of banking operations, deposit, lending and payments are the main recipient of Fintech investment at 65% of all the Fintechs under the category banking and capital markets (Deloitte, 2017). However, it important to note these are not investment in banks but new firms coming into the banking sector and eating on the market share of the incumbent financial institutions.

Fintechs have a laser-like focus on customer proposition and they are ever ready to embrace and employ technology in a novel way thereby making their services more transparent, simple and personalized (Parameshwar et al., 2019). These aspects of Fintech have drawn customers from the incumbents to Fintechs and it is estimated that the traditional financial institutions are likely to lose one third of their current revenues to Fintechs. In Europe, the Nordic region banks are expected to lose 26% of their current business to new entrants into industry while the rest of Europe is estimated to lose 31% of the current business to new digital financial services providers (Invesdor, 2017).

The disruption caused by the Fintech in the financial sector is likely to contract the role played by banks in the economy and at the same time significantly reduce the bank's relevance in the economy. According to Senyo & Ellis (2020), the incumbents are at risk of losing their market share, decline in scale of operations that is accompanied by a fall in margins. This will be as a result of the possibility of banking services being incrementally added to non-financial services thereby disintermediating the incumbents out of the business. The technology also has the potential to simultaneously help the banks to improve on their services by making them better, faster and cheaper thereby making the incumbents even more essential to the economy (Accenture, 2014).

### **1.1.3 Fintech in Kenya**

According to Didenko (2018), Kenya and South Africa are the major Fintech centers in the region as well as leaders in financial inclusion, high mobile penetration and mobile money accounts. Kenya is home to one of the biggest success stories in the history of Fintech with Nairobi and Johannesburg being the only African cities in the list of global Fintech hubs. Nairobi is regarded as the foremost Fintech hub in Africa and many new Fintech enterprises choose to locate or launch their operations there (Aglianby, 2016). The mobile money platform M-Pesa launched in 2007, contributed to a dramatic increase in financial inclusion by providing access to financial services for the majority of the adult population in the country (Didenko, 2018).

The innovation environment forged by M-Pesa and the inadequacy and exclusionary practices of the incumbents in Kenya, open business and regulatory environment, entrepreneurial society, strong internet and mobile telecommunications infrastructure laid the foundations for Fintechs to grow in the country currently with over 30 Fintech companies. The emergence of Fintechs in the country changed the competition aspects in the banking sector with the competition emanating from outside the sector (Mujuka, 2018). The new entrant attacked the main market of the incumbent such as lending, payments and deposits with M-pesa moping huge deposits out of the mainstream banking system. The intermediary role of commercial banks and the credit creation process based on the deposits held by banks were threatened. The banks reacted using different strategies such launching of their mobile banking applications and partnering with telecommunication companies to offer mobile banking (Africinvest, 2016).

#### **1.1.4 Banking Sector in Kenya**

The sector has continued to grow reflecting the country's growth towards economic prosperity with a continuous evolution path moving from a purely manual system to computerized and highly automated operating environment. According to CBK (2018) report, the sector includes the Central Bank of Kenya as the primary regulator with 44 commercial banks, 31 locally owned and the remainder are foreign owned. The government has shareholding in three of the locally owned banks and 27 are commercial banks with one mortgage finance institution. The banks have branches, agencies and other outlets throughout the country. The sector also includes three

licensed credit bureaus, 14 money remittance providers and about 200 deposits taking licensed SACCOs (CBK, 2018).

### **1.1.5 Financial Performance**

Financial performance can be defined as the ability of an organization to realize a set of its predetermined financial goals/objectives such as profitability. It is a measure of the degree to which financial targets of an organization has been realized or exceeded and therefore, it shows the degree of accomplishment of a firm's financial objectives (Al-Matari, Al-Swidi & Fadzil, 2014). Performance measures are the quantitative/qualitative ways that are used to characterize and define performance. Performance can be defined as outcomes, end results and achievements both favorable and unfavorable arising from firm activities. Performance measurement refers to the process of progressive assessment to determine what has actually been achieved in relation to predetermined performance baseline (Mujuka, 2018). Performance is normally measured against essential strategic practices in terms of outcomes which vary with a range of continuum of categories of financial measures.

### **1.2 Research Problem**

The disruption in the financial sectors experienced globally and triggered by the entrance of new firms into the banking sector has equally hit the Kenyan financial sector. Fintechs in the country as is the case globally, takes advantage of the technological advancement to disrupt the conventional business models of the banking sector. Technology and telecommunications giants' corporations such Google, Apple, Safaricom, Orange have penetrated the financial market in a disruptive way. Using their high technological potential and exposure to customer data, they disrupt the industry by using this data to design products and services directed at the specific customer needs. This gives Fintechs a competitive edge over the traditional banks who do not have access to such data (Denertiz, Merler & Wolff, 2017).

Fintech capitalizes on inadequacies of traditional banking by providing better services. An empirical study by Omarini (2018) found out that retail banks are facing challenges of losing the

long-lasting bond they have had with their customers since Fintechs started to meet customer needs that incumbent were unable to meet within the traditional value chain. The banks in Kenya reacted by launching products that leverage on financial technology as a way of defending their market from Fintechs. This has been done through products such as KCB Mpesa, Mshwari, Cop cash, Pesa Pap as well as launching their own Fintech such as Finserve by Equity bank (Mujuka, 2018). This study seeks to establish how Fintechs have influenced the financial performance of commercial banks in Kenya.

### **1.3 Objectives of the Study**

The general objective of the study was to evaluate the influence of financial technology on the financial performance of commercial banks in Kenya.

#### **1.3.1 Specific Objectives**

The specific objectives of the study were

- a) To evaluate the influence of digital lending on the financial performance of listed commercial banks in Kenya.
- b) To analyze the effect of digital transactions on the financial performance of listed commercial banks in Kenya.
- c) To find out the influence of digital accounts on the financial performance of listed commercial banks in Kenya.
- d) To establish to effect of number of ATMs on the financial performance of commercial banks in Kenya.
- e) To evaluate the influence of agency banking on the financial performance of commercial banks in Kenya.

### **1.4 Study Hypothesis**

- H<sub>01</sub>:** Digital lending has no significant effect on financial performance of listed commercial banks in Kenya
- H<sub>02</sub>:** Digital transactions have no significant effect on financial performance of listed commercial banks in Kenya

- H<sub>03</sub>:** Number of digital accounts has no significant effect on financial performance of listed commercial banks in Kenya
- H<sub>04</sub>:** Number of ATMs has no significant effect on financial performance of listed commercial banks in Kenya
- H<sub>05</sub>:** Agency banking has no significant effect on financial performance of listed commercial banks in Kenya

## **2.1 Theoretical Literature Review**

### **2.1.1 Technology Acceptance Model**

Fintech is an important aspect in modern day banking that has changed the banking sector with more focus shifting to banking as opposed to banks. It has affected all the sector's stakeholders thereby making the ease of its acceptance by all, of key significance. Technology Acceptance Model (TAM) has been used by researchers to explain the behaviour of the users of new technology towards the technology. The model posit that the behaviour of the users will be determined by the perceived usefulness and the ease of use of the technology (Vukovic, Pivac & Kundid, 2019). Thus, a technology that is thought to be simple to use and useful to the user will positively affect the actual use of the technology. The model is useful to this study as the acceptance of Fintech to bank management, employees and customers is key for the technology benefits to flow.

### **2.1.2 Prospect Theory**

Developed by Kahneman and Tversky in 1979, it is a cognitive psychology theory that infers the behaviour of people in making decisions where gains, losses and final outcomes are concerned especially where risks and uncertainties are imminent. The decisions of the people are seen to be more influenced by deterrents than the motives of making a decision. Despite having its foundation in psychology and behavioral finance, the theory has been applied in other fields such information systems research to study risks associated with use of technology (Senyo & Ellis, 2019). In the light of security risk issues on Fintech, it is paramount to understand how these risks may affect the use of Fintechs products and services. This study uses the propositions of



prospect theory to understand how the perceived risks may influence Fintech adoption by both bank management, employees and customers.

## **2.2 Empirical Review**

According to World Fintech Report (2018), the 2008 global financial crisis changed the financial world rendering what previously worked for the sector less effective in delivering stakeholders expectations of the financial institutions. The aftermath of the crisis was marked by low interest rates, declining revenues, lost customer trust and loyalty as well as upward movement of operational budgets. The sector regulators tightened the rules further stretching the banks' capital and the focus of their leadership. The changing customers behaviour and expectations have even compounded the problem of the incumbents who have no option rather than turning to the technology to address the challenges posed by the operational environment. However, the legacy systems in place at the incumbents are not compatible with the new technology as most of them were stop gap solutions that are not scalable and cannot handle real time transactions.

The resultant changes in the financial sector landscape saw the emergence and entrance of new firms into the financial sector. These new entrants commonly known as Fintechs leverage on technology to touch on consumer pain-points resulting from the incumbents' inability to meet customers' needs in real time (Omarini, 2018). These firms target specific segments of institution value chain and provide better services and solutions consequently weakening the bond between the banks and their clients thereby resulting to lost revenue to the banks (Kotarba, 2016). Through technology innovation, process disruption and services transformation the new firms have managed to alter the business models in the financial sector by taking a customer centric approach in their service delivery (Gomber et al., 2017). The new firms have succeeded in disrupting the financial sector due to their adoption of sociotechnical technology characterised by products, services and infrastructure based on societal demand.

World Bank (2020) found innovations in technology and business models to have led to increased digital financial services that are likely to lower costs of providing financial services and result to increased transparency, security, speed and customer centric financial services. Technology employment was found to improve on rendering of financial services from account

opening, transaction authentication, service automation, credit worthiness assessment and lending processes. Services provided through digital platforms were found to be characterised by low marginal cost per account or transaction which in turn brought about efficiency and cost reduction. According to World Bank (2020), the new entrants have provided strategies to overcome constraints such as geographical barriers, informality and lack of documentation, size and volatility of consumer incomes as well as literacy and trust issues.

Thakor (2018) found that the new entrants are offering financial services in areas such as credit, deposit, capital raising services, payments, investment, and insurance among others. Basel Committee on Banking Supervision (2018) identified four market support services through which technology enabled Fintechs to financial services landscape. They found that Fintech concentration to be high in payments, clearing and settlement services, credit, deposit and capital raising services respectively findings that were in agreement with that of Thakor (2018). Credit, deposits and capital raising platforms were found to be key in supporting the Fintech disruption agenda. These platforms were found to disintermediate the banks by matching borrowers and lenders directly online without having to maintain any deposit to support their lending. These platforms were found to have gained much of the prominence after the global financial crisis of 2007.

Fintechs were also found to operate as shadow banks where they provided maturity transformation services without holding any deposit themselves. Their services mirrored those of commercial banks safe for deposit mobilization hence operating in a non-intermediated fashion. They were found to invest their own equity and unsecured financing as the sources of funds that are used to provide finances to small businesses and individuals in a faster way without collateral requirements. According to Earnest & Young (2017), in order for banks to achieve a return on equity of 12% the top global banks need to increase their revenue by 15% and reduce costs by 13.7%. Fintech was identified as one the technology needed in the banking ecosystem that will help drive down cost and innovate for enhanced customer services (Senyo & Allis, 2020). Fintechs and their solutions when embraced and adopted intelligently were found to offer banks a path back towards higher return on equity.

### 3.0 Study Methodology

The study entails a quantitative analysis of financial performance of commercial banks in Kenya owing to the influence of various Fintechs. The Fintechs, digital loans, transactions and accounts, ATMs and banks agents are the study's independent variables while financial performance is the study's dependent variable. Secondary data from regulatory reports together with financial reports of commercial banks listed in Nairobi Securities Exchange was reviewed and analyzed. Data was collected for a period of five years covering January 2014 to December 2018 with unit period of analyses being quarterly. Data was collected on bank earnings before tax, number of digital loans processed and banks digital transactions, number of digital accounts acquired, ATMs and bank agents.

The study used Stata 14 to undertake regression analysis to estimate the relationship between the variables under study. The study's regression model is outlined below:

$$Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + e$$

Where:

Y – Financial performance of commercial banks

X<sub>1</sub> – Number of digital loans

X<sub>2</sub> – Number of digital transactions

X<sub>3</sub> – Number of digital accounts

X<sub>4</sub> – Number of ATMs

X<sub>5</sub> – Number of bank agents

$\alpha_0$  – Bank performance without influence of Fintech

$\alpha_1$ -  $\alpha_5$  – Coefficients that depict the change in Y due to unit change in each Fintech variable

e – Error term

### 4.0 Results and Findings

Secondary data was collected from central bank of Kenya and the 11 commercial banks listed in the Nairobi Securities Exchange on a quarterly basis over a 5-year period from year 2014 to 2018 and analyzed using SPSS and presented in frequency tables. Descriptive and inferential statistics have been used to discuss the findings of the study.

**Table 1: Descriptive Statistics**

```
. mean profit digloans digtransactions digaccounts atms agents
Mean estimation                Number of obs   =                20
```

	Mean	Std. Err.	[95% Conf. Interval]	
profit	140753	1549.116	137510.6	143995.3
digloans	113896.1	6385.238	100531.6	127260.5
digtransactions	122572.2	402.6672	121729.4	123415
digaccounts	6239843	522836	5145535	7334152
atms	31173.2	447.0575	30237.5	32108.9
agents	48291.3	2409.33	43248.51	53334.09

From the findings, the study found that there was a mean of 31,173 ATMS banking among commercial banks listed in NSE, there was a mean of 48,291 agents, a mean of 113,896 number of digital loans, a mean of 122,572 number of digital transactions and finally the number of digital loans was found to be 6,239,843.

**Table 2: Correlation**

	profit	digloans	digtra~s	digacc~s	atms	agents
profit	1.0000					
digloans	0.4768	1.0000				
digtransac~s	0.6157	0.7609	1.0000			
digaccounts	0.4734	0.8830	0.7219	1.0000		
atms	-0.0509	-0.0557	0.0225	-0.0836	1.0000	
agents	0.2643	0.8949	0.6477	0.9151	-0.0061	1.0000

The study carried out Spearman correlation analysis. From the findings, it was established that financial performance of individual commercial banks and various variables, were strongly and positively correlated. The number of digital loans and financial performance as shown by correlation factor of 0.4768 were positively correlated. Financial performance of commercial banks and number of digital transactions were found to have a strong positive correlation as shown by correlation coefficient of 0.6157. The number of digital accounts had a positive correlation of 0.4734. The study also established that financial performance of individual

commercial bank and agency banking had a weakly positive correlation as shown by correlation coefficient of 0.2643. Finally, it was established that there was a weak negative correlation between financial performance of individual commercial bank and number of ATMS as shown by correlation coefficient of -0.0509.

#### 4.1 Panel Regression Analysis

##### 4.1.1 Hypothesis One

**H<sub>01</sub>:** Digital loans has no significant effect on financial performance of listed commercial banks in Kenya

**Table 3: Financial Performance and Digital Loans**

```
. reg profit digloans
```

Source	SS	df	MS	Number of obs	=	20
Model	207285963	1	207285963	F(1, 18)	=	5.30
Residual	704622789	18	39145710.5	Prob > F	=	0.0336
Total	911908752	19	47995197.5	R-squared	=	0.2273
				Adj R-squared	=	0.1844
				Root MSE	=	6256.7

  

profit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
digloans	.1156688	.0502659	2.30	0.034	.0100641 .2212734
_cons	127578.7	5893.547	21.65	0.000	115196.9 139960.6

Evidence from ANOVA statistics shows that there exists a significant relationship between number of digital loans and financial performance of listed commercial banks in Kenya as shown by significance value of 0.0336. At 95% confidence level, the significance value of 0.0336 is less than the alpha value thereby indicating that the variable has significant influence on the financial performance of the listed commercial banks in Kenya. The R<sup>2</sup> value of the independent variable was found to be 0.2273 indicating that 22.7% of the financial performance of listed commercial in Kenya can be explained by the number of digital loans. The study therefore failed to accept the null hypotheses and concluded that the number of digital loans significantly influences the performance of listed commercial banks in Kenya.

From the finding of the study the established equation was between financial performance and digital loans were:

$$Y = 127578.7 + 1157 X_1$$

As shown in the regression equation, financial performance of commercial banks would be at 4374325 if digital loans were held to a constant of zero.

#### 4.1.2 Hypothesis Two

**H<sub>02</sub>:** Number of digital transactions has no significant effect on financial performance of listed commercial banks in Kenya

**Table 4: Performance and Digital Transactions**

```
. reg profit digtransactions
```

Source	SS	df	MS	Number of obs	=	20
Model	345740056	1	345740056	F(1, 18)	=	10.99
Residual	566168696	18	31453816.5	Prob > F	=	0.0038
Total	911908752	19	47995197.5	R-squared	=	0.3791
				Adj R-squared	=	0.3446
				Root MSE	=	5608.4

  

profit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
digtransactions	2.368846	.714494	3.32	0.004	.8677494 3.869942
_cons	-149601.7	87586.1	-1.71	0.105	-333613.3 34409.84

The ANOVA statistics provided evidence that there is significance association between digital transactions and financial performance as shown by significance value of 0.0038. The P-value of less than 0.05 shows that the financial of listed commercial banks in Kenya are significantly influenced by digital transactions. The study also found R<sup>2</sup> of 0.3791 at 95% confidence level indicating that the number of digital transactions significantly influenced financial performance of commercial banks in Kenya. This means that 37.91% of changes in the financial performance of listed commercial banks in Kenya are related to the number of digital transactions. The study therefore failed to accept the null hypothesis that number of digital transactions has no significant influence on financial performance of listed commercial banks in Kenya.

From the finding of the study the established equation was between financial performance and digital transactions was;

$$Y = -149601.7 + 2.2368 X_2$$

As shown in the regression equation, financial performance of commercial banks would be at -14, 9601.7 if digital transactions are held to a constant of zero.

### 4.1.3 Hypothesis Three

**H<sub>03</sub>:** Digital accounts has no significant effect on financial performance of listed commercial banks in Kenya

**Table 5: Financial Performance and Digital Accounts**

. reg profit digaccounts

Source	SS	df	MS	Number of obs	=	20
Model	204328867	1	204328867	F(1, 18)	=	5.20
Residual	707579885	18	39309993.6	Prob > F	=	0.0350
Total	911908752	19	47995197.5	R-squared	=	0.2241
				Adj R-squared	=	0.1810
				Root MSE	=	6269.8

profit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
digaccounts	.0014025	.0006152	2.28	0.035	.0001101 .0026949
_cons	132001.5	4086.565	32.30	0.000	123415.9 140587

From ANOVA statistics, significant relationship was found to exist between finance performance of commercial banking listed in Kenya and digital accounts with a significance value of 0.0350. The two variables have a P-value of 0.0350 which less than the study alpha of 0.05 at 95% confidence level indicating that digital significantly influences the financial performance of the listed commercial banks in Kenya. The R<sup>2</sup> of the independent variable was found to be 0.2241 indicating that number of digital account accounts for 22.41% of the variation in financial performance of commercial banks in Kenya. The study failed to accept the null hypothesis and concluded that digital accounts have significant influence on the financial performance of listed commercial banks in Kenya.

From the finding of the study the established equation was between financial performance and digital accounts was;

$$Y = 132,001.5 + 0.0014 X_3$$

As shown in the regression equation, financial performance of commercial banks would be at 132,001.5 if digital accounts are held to a constant of zero.

#### 4.1.4 Hypothesis Four

**H<sub>04</sub>:** Number of ATMs has no significant effect on financial performance of listed commercial banks in Kenya

**Table 6: Financial Performance and Number of ATMs**

. reg profit atms

Source	SS	df	MS	Number of obs	=	20
Model	2358947.51	1	2358947.51	F(1, 18)	=	0.05
Residual	909549804	18	50530544.7	Prob > F	=	0.8314
Total	911908752	19	47995197.5	R-squared	=	0.0026
				Adj R-squared	=	-0.0528
				Root MSE	=	7108.5

  

profit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
atms	-.1762398	.8156838	-0.22	0.831	-1.889928 1.537448
_cons	146246.9	25477.11	5.74	0.000	92721.51 199772.3

Numbers of ATMs have no significant influence on the financial performance of listed commercial banks has shown by the ANOVA statistics with a significant value of 0.8314. The significant value of 0.8314 is greater than 0.005 which indicates that the number of ATMs has no significant influence on financial performance of listed commercial banks in Kenya. The study found that the R<sup>2</sup> to be 0.0026 indicating that the number of ATMs could only explain a very insignificant variation in changes in financial performance of commercial banks listed in Kenya. The study failed to reject the null hypotheses and concludes that the number of ATMs has no significant influence on the financial performance of listed commercial banks in Kenya.

From the finding of the study the established equation was between financial performance and number of ATMs were was;

$$Y = 146246.9 - 0.1762X_4$$



As shown in the regression equation, financial performance of commercial banks would be at 146,269.9 if number of ATMs were held to a constant of zero.

#### 4.1.5 Hypothesis Five

**H<sub>05</sub>:** Agency banking has no significant effect on financial performance of listed commercial banks in Kenya

**Table 7: Financial Performance and Number of Agents**

. reg profit agents

Source	SS	df	MS	Number of obs	=	20
Model	63723265.8	1	63723265.8	F(1, 18)	=	1.35
Residual	848185486	18	47121415.9	Prob > F	=	0.2601
Total	911908752	19	47995197.5	R-squared	=	0.0699
				Adj R-squared	=	0.0182
				Root MSE	=	6864.5

  

profit	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
agents	.1699655	.1461575	1.16	0.260	-.1370999	.477031
_cons	132545.1	7223.111	18.35	0.000	117369.9	147720.3

The ANOVA statistics revealed that the number of agents was not significant relation to the performance of listed commercial banks in Kenya as shown by significant value of 0.2601. The P-value was found to be 0.2601 indicating that the influence of number of agents on financial performance of listed commercial banks in Kenya is not significant. At 95% confidence level, the study found R<sup>2</sup> to be 0.0699 showing a weak relationship between number of agents and financial performance of listed commercial in Kenya. The study failed to reject null hypothesis and concluded that the number of agents has no significance influence on performance of listed commercial banks in Kenya.

From the finding of the study the established equation was between financial performance and number of agents was;

$$Y = 132545.1 - 0.1700X_5$$

As shown in the regression equation, financial performance of commercial banks would be at 132545.1 if number of agents were held to a constant of zero.

## **5.0 Discussion**

The study found that three of the variables had significant influence on the financial performance of commercial banks in Kenya. These variables include digital loans, digital transactions and digital accounts all which could be viewed as the latest Fintech solutions in the banking sector. These findings are in agreement with earlier studies on Fintech and banking sector such as Kotarba, (2016) who found that the emerging new entrants could lead to the loss of revenue to incumbents.

Thakor (2018) found that Fintechs were more concentrated in payment, lending and deposit and this would be in agreement with study findings where digital lending, digital transactions and digital accounts were found to significantly influence financial performance of commercial banks. According to World Bank (2020), an increase in digital financial services is likely to lower cost of providing financial services. Technology improved on delivering financial services such as account opening, lending, payment, transactions authentication among others. This supports the findings of the study where digitalization of loans, transactions and accounts were found to significantly influence financial performance of commercial banks.

## **6.0 Recommendations**

The incumbents need to transform the disruption moment into a positive market shock by acknowledging the need to adjust themselves out of institutional complacency. They must recognise the current challenges and opportunities presented by the new digital ecosystem to continuously improve on the customer experience. To match the experience offered by the new entrants or at least minimise the loss from innovations of the new players, the incumbents need to embrace financial technology innovations at all business levels.

## **7.0 Conclusions**

The study established that digital transactions positively influence the financial performance of listed commercial banks in Kenya. It was further established in the study that digital transactions and performance of listed commercial banks in Kenya had a strong positive correlation. The study concludes that digital transactions influence the performance of listed commercial banks in Kenya. The study also found positive influence of the financial performance of listed commercial banks in Kenya by the number of digital loans with a strong positive correlation providing the supportive evidence. The study established that a unit increases in digital transactions will cause the biggest variation in financial performance of commercial banks in Kenya followed by digital loans and digital accounts respectively.

The study established that the number of agents had the least positive effect on the financial performance of commercial banks listed in Kenya. There was weak positive correlation between number of agents and the financial performance of listed commercial banks in Kenya. The study concluded that the number of agents has no significance effect on the financial performance of listed commercial banks in Kenya. The study also found that the number of ATMs have negative influence on the financial performance of commercial banks in Kenya. An increase in number of ATMs will lead to a decline in financial performance of listed commercial in Kenya. However, the correlation between the two is weak and therefore the study concludes that a change in number of ATMs will have no significance change in financial performance of listed commercial banks in Kenya.

### **8.0 Areas for Further Study**

The study sought to examine the influence of Fintech on financial performance of listed commercial banks in Kenya. The study covered the period before COVID-19 and restricted itself to listed commercial banks in Kenya thus a further study covering other areas in the financial sector to find the effects of Fintech taking into account the effect of COVID-19 pandemic. A further study also should be carried out on the three variables found to significantly influence financial performance of commercial banks to establish their magnitude of their influence.

### **References**

- Africinvest. (2016). *Africa and the global Fintech revolution*. Africinvest.
- Al-Matari, E.M., Al-Swidi, A.K. & Fadzil, F.H. (2014). The measurement of firm performance's dimension. *Asian journal of Finance & Accounting*, 6(1), 24-49.
- Alt, R. & Puschmann, T. (2012). The rise of customer-oriented banking -electronic markets are paving the way for change in the financial industry. *Electronic Markets Journal*, 22(4), 203–215.
- Basel Committee on Banking Supervision. (2018). *Sound Practices: implications of fintech developments for banks and bank supervisors*. BIS.
- Central Bank of Kenya. (2018). *Bank supervision annual report 2018*. Nairobi.
- Deloitte. (2014). *Digital transaction banking: Opportunities and challenges*. Deloitte.
- Denertzis, M., Meler, S. & Wolff, G. (2017). Capital markets union and the Fintech opportunity. *Journal of Financial Regulation*, 4, 157–165.
- Didenko, A. (2018). Regulating Fintech: Lessons from Africa, *San Diego International Law Journal*, 19(2), 310-370.
- Earnest & Young. (2017). *Unleashing the potential of Fintech banking*. EYGM ltd
- Gomber, P., Kauffman, R. J., Parker, C. & Weber, B. W. (2018). On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services. *Journal of Management Information Systems*, 35(1), 220-265.
- Gopalan, S., Jain, G., Kalani, G. & Tan, J. (2012). Breakthrough IT banking. *McKinsey on Business Technology*, 26(Spring), 30–35.
- International Monetary Fund, African Department (2019). *Fintech in Sub-Saharan Africa*. IMF.
- Kotarba, M. (2016). New Factors Inducing Changes in the Retail Banking Customer Relationship Management (CRM) and Their Exploration by the Fintech Industry. *Foundations of Management*, 8, 69-78.
- Mujuka, D. A. (2018). Factors Affecting Financial Performance of Commercial Banks in Kenya. *International journal of academics & research*, 1(1), 20-37.
- National Economic Council (NEC). (2017). *A Framework for Fintech*. The White house Washington.

- Omarini, A. E. (2018). Fintech and the future of payment landscape: The mobile wallet ecosystem-A challenge for retail banks? *International Journal of Financial Research*, 9(4), 97-116.
- Parameshwar, H.S. et al. (2019). Fintech and Disruptions: An Impact Assessment. *Journal of Critical Reviews*, 6(6), 89-97.
- PWC Global Fintech Report (2017). *Redrawing the lines: Fintech's growing influence on financial services*. PWC.
- Senyo, P.K. & Ellis, L.C. (2020). *Unearthing antecedents to financial inclusion through Fintech innovations*. Elsevier ltd
- Thakor, A. (2019). Fintech and banking: What do we know? *Journal of Financial Intermediation*, 41. 100833. 10.1016/j.jfi.2019.100833.
- Vukovic, M., Pivac, S. & Kundid, D. (2019). Technology Acceptance Model for the Internet Banking Acceptance in Split. *Journal of Business Systems Research*. Vol 10.No. 2, 2019. 124-140.
- World Bank. (2020). *Digital financial services*. World Bank.