BINDURA UNIVERSITY OF SCIENCE EDUCATION



The effects of Financial Technology (Fintech) on the Financial Performance of Commercial banks in Zimbabwe

Dissertation

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DEDICATIONS

This dissertation is dedicated to my parents for their inspiration, financial support and unconditional love during my whole study period. A special thank you is also extended to my family members for their unwavering support through the good and trying times.

Thank you, guys; you are fantastic.

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ABBREVIATIONS

CBZ - Central Bank of Zimbabwe

FinTech - Financial Technology

ROA - Return on Assets

ABSTRACT

The study's goal was to determine how and to what extent the fintech sector affects the financial performance of Zimbabwe's banking sector. It also sought to review the growing body of theoretical and empirical research that has attempted to investigate the magnitude and effects of the fintech sector on the financial performance of Zimbabwean commercial banks. A causal research design was used in the study. The intended audience consisted of all eighteen licensed commercial banks in Zimbabwe. Secondary data sources were used to collect information on earnings before taxes, total assets, the number of registered mobile payment account users, the number of mobile payment transactions, and the transaction value. This was a longitudinal study, and the unit period of analysis was yearly. Data was collected for theighteen years from 2009 to 2021. The study applied correlation analysis and multiple linear regression equations, with the estimation technique being Ordinary Least Squares, to establish the association between the fintech sector and the financial performance of commercial banks.

When correlation analysis was conducted, the study established a significant positive association between all the predictor variables included in the study and the bank's return on assets with a significance value of 0.000. Before conducting the regression analysis, two variables were dropped because of the presence of multicollinearity. When correlation analysis was conducted, the study established a significant positive association between all the predictor variables included in the study and the bank's return on assets with a significance value of 0.000. When correlation analysis was performed, the study discovered a significant positive relationship with a significance value of 0.000 between all of the predictor variables included in the study and the banks' return on assets. As a result, all predictor variables were found to be significantly correlated. When correlation analysis was

performed, the study discovered a significant positive relationship with a significance value of 0.000 between all of the predictor variables included in the study and the banks' return on assets. Thus, increased uptake of mobile payments leads to increased banks' financial performance. It had a significance value of 0.000 which is greater than the critical value (α) of 0.05. It also had a T test value of 5.665 which lies out of range of the two tailed T test critical value of ± 2.04523 . The coefficient obtained implies that a unit increase in the number of registered mobile payment account users would lead to an increase in commercial bank performance by 1.206. The study concluded that that uptake of mobile payments and the banks' financial performance have a significant positive relationship. Thus, increased uptake of mobile payments leads to increased banks financial performance. The study recommended that the regulator, the Reserve Bank of Zimbabwe, should recognize the role that fintech plays in the economy and try to incorporate it in the financial system and develop a regulatory framework for it. It also recommended that managers in the financial sector should use the study findings to establish a proper link between services offered by the fintech firms and bank specific factors to ensure that banks do not lose market share. Investors can also invest in banks stock as the financial performance will be on an upward trajectory influenced by the fintech sector.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The effects of fintech firms are being felt mostly in capital markets and the banking sector. This research seeks to study their growth and development, their effect on the structure of commercial banks and the strategies of incumbents and future entrants. Businesses in the fintech sector have a strong track record of boosting individual and corporate welfare. However, they continue to be disruptive to the banking industry, where laws must be appropriately adjusted to ensure that new technological outcomes are achieved without jeopardising financial stability. Fintech, as defined by Block, (2020), denotes companies or representatives of companies that combine financial services with modern innovative technologies. In general, fintech seeks to attract customers by offering goods and services that are more user-friendly, efficient, transparent and automated than those now offered, Ndlovu, (2019). Thus, Fintechs are new technological innovations that strive to compete with existing financial companies in the delivery of financial services and the improvement of financial activities, Tyavambiza & Nyangara, (2020). Fintechs are a novel combination of technology and business structures that alter, disrupt, or improve financial goods and services, Zhu, (2018). Fintech firms include both existing and startup financial and technology firms that are attempting to eliminate or increase the use of financial services offered by traditional financial institutions, Juodelytė, (2020). Despite the rapid adaptation of commercial banks into the digital world, fintech competitors are slowly creeping into their traditional form of business. Mansilla-Fernández, et al (2018) based on knowledge obtained through bank and customer linkages, the new competitors can use complex information to obstruct the traditional links between the bank and the consumer. Many new rivals apply for banking licenses to minimise compliance costs and siphon off the banks' lucrative business Narayan, (2019). The capacity of fintech companies to capitalise on millennials' growing distrust of banks as they provide digital services that appeal to young people is what might make them profitable, Ndlovu, (2019). Traditional banks focus more on products, while new competitors focus more on consumers, Odhiambo, (2018).

1.1.1 Fintech Firms

According to Llewellyn, (2017), fintech companies are "those businesses disrupting the financial services sector by utilising technology to its fullest potential. These businesses excel at what they do, provide superior customer service, and have a track record of dominating a particular market Lumpkin, (2018). "Fintech" technological advances have so far been made in lending, financial advising, insurance, and payment systems, Yabara, M. (2018). As a result, these companies have been able to cut intermediation costs and raise financial access by expanding financial inclusion, Mishra, (2021). Yabara, M. (2018), asserts that this effectiveness is attributable primarily to Fintech's involvement in addressing information asymmetries, which is still a significant difficulty in the banking industry. Fintech companies also lack the legacy technologies needed to handle the effective operational designs of many cultures and this gives them higher innovative capacities than traditional businesses, Andrianova, (2017).

Mishra, P.K. (2021), said Peer-to-peer (P2P) platforms provide credit to individuals and firms investing in small businesses without the involvement of banks. Some of these platforms let lenders choose the borrowers, loan packages, and online auctions to issue financial, while others serve both borrowers and lenders White, (2021).

In Zimbabwe, various fintech companies have penetrated the market, offering multiple services. For example, the RBZ (2020) reported that the following money platforms registered with them carried out mobile money services, such as Ecocash, Onemoney and Telecash that are run by three mobile network operators (MNOs), namely Econet, NetOne and Telecel, respectively, plays significant roles in Fintech even though they are not conventional banks. To date, Fintech in Zimbabwe is primarily a story of digital payments. Digital payments increased from 38 million in 2012 to 367 million in 2016, driven by several factors, including the macroeconomic environment and a lack of cash. Then, with considerable help from other fintech firms like Paynow, E-transact, Zimswitch, Instapay, Zimbocash, and Bitmari, it surged to 1.96 billion in 2021, Makova, (2020).

Generally, the majority of consumers engage Fintech providers to refinance or consolidate current loans, while others use them to finance major purchases (such as vehicles or real estate), Makova, (2020). Borrowing for higher education by students is common in the United States and China, Mansilla-Fernández, (2019). On the other side, small and micro firms often seek funds for operating capital or investment initiatives on the business side Prior, & Santomá, (2020). Financing can also take the form of invoice trading, in which investors buy discounted claims on a company's receivables, Prior, F. & Santomá, X. (2020). In the United Kingdom, for example, it accounted for approximately 15% of comparable bank credit lending to consumers and small and medium-sized firms (SMEs) in 2016 and accounted for up to 36% of unsecured personal loans given in the United States in 2017. Smith, (2021). Estimated Fintechs mortgage originations amounted to 8-12% of the total in 2016 in the United States Prior & Santomá (2020). According to Smith, R.P. (2020)., Quicken Loans, a Fintech lender, was the single largest mortgage originator in late 2017. Fin-Techs make lending services and deposits available, allowing individuals to readily finance from private or peer-to-peer lenders, Smith, (2021). These financial technologies can reach borrowers who are frequently ignored by traditional banks by incorporating new forms of credit appraisal and new automated payment/money transfer mechanisms, Štreimikien (2019)

1.1.2 Financial Performance.

Commercial banks play an important function in preparing monetary assets for speculation by extending loans to various organizations and financial experts, Prior, F. & Santomá, (2020). Loaning is at the heart of the accounting industry, and advances are the most common resources, which account for the biggest share of working pay, Štreimikien, (2019). Loans, on the other hand, expose financial institutions to a higher level of risk. This entails balancing both the risk associated with a large loan book and the income generated by the loans Smith, R.J. (2021).

Streimikien, (2019), Financial performance is the achievement of the company's financial performance for a certain period covering the collection and allocation of finance measured by capital adequacy, liquidity, solvency, efficiency, leverage and profitability. It demonstrates how well financial goals are being accomplished. Andrianova, (2017), states that financial performance shows how a company uses assets to generate revenues and thus

directs the stakeholder in their decision-making. Frame, (2017), asserts that the banking industry largely depends on its financial performance, indicating individual banks' strengths and weaknesses. Moreover, the government and regulatory agencies are interested in how banks perform for regulation purposes.

Financial performance examines the factors that directly influence a firm's financial reports and statements (Omondi & Muturi, 2013). The primary appraisal method employed by external parties is the firms' performance (Demertzis, Merler, and Wolff, (2017). This clarifies why a company's performance is regarded as a yardstick. The firm's performance is determined by the degree to which its goals are met. The outcomes obtained from achieving a firm's internal and external goals are its financial performance. Performance has several names, such as growth, competitiveness, and survival, Bracking, & Sachikonye, (2016). Financial performance can be assessed using a variety of measures, including Net Interest Margin and Return on Assets (ROA). ROA is a measure that illustrates a bank's ability to employ its available assets productively, Demetriades, P.O. & Andrianova, (2017). On most occasions, profit after tax is commonly employed in measuring the financial performance of commercial banks (Adu-Asare Idun, & Aboagye, (2014). Bracking, & Sachikonye, (2016). stated that financial interrelation ratio; total loans to control deposits, bank portfolio composition, customer satisfaction and market size are other dimensions that may be utilized in the measurement of the financial performance of commercial banks. In addition, financial performance may be expressed through the measurement of external determinants which may include the legal and economic environment in which the bank operates and also checking at the internal factors derived from statements of financial position and statements of comprehensive income, Song, et al, (2014).

1.1.3 Fintech Firms and Financial Performance.

Fintech companies compete with conventional financial institutions by utilising cutting-edge technology (New technologies) and serving as intermediaries in financial services, Levine, (2007). The Zimbabwean market contains all the necessary circumstances for Fintech companies' growth and economic systems' development, Ndlovu, (2019). Fintech companies have cost-effective operations and thus a competitive edge since they have fewer regulations

than traditional banks and are more cost-effective, which stretches to enhancing the financial performance of the banking sector.

According to Makova, et al, (2020), the payments industry has undergone a rapid technological transformation that has increased financial inclusion and changed the trajectory of traditional banking systems' endeavours. The untapped financial market by the Zimbabwean banks is still significant, which provides an opportunity for fintech companies to venture in, Tyavambiza, & Nyangara, (2020). Globalisation, increasing customer needs, and the number of industries in the sector have led to higher levels of competition and market share, Weber, (2017). Collaborations with fintech firms are essential for Zimbabwean banks to improve their financial performance and maintain competitiveness.

1.1.4 Commercial Banks in Zimbabwe

In Zimbabwe, a commercial bank is an entity that offers financial services such as issuing money, lending money and processing transactions and creating credit, RBZ (2020). Zimbabwe has 13 registered commercial banks and these banks are continuously supervised by the Central Bank of Zimbabwe and regulated by the banking act. Zimbabwean's banking sector has undergone significant growth over the past few years regarding deposits, assets, products offering and profitability, Zivengwa, (2020). It also, over the last few years, witnessed significant growth in consumer lending and corporate lending Zivengwa, (2020). This is evidenced by the growth in demand for credit as the amount of gross loans increased by 23.125% in the year across all sectors RBZ (2021). The highest demand for credit was witnessed from personal/household, transport, communication, agriculture and trade sectors, Mashika, etal (2020). Commercial banks in Zimbabwe diversify their loan portfolios across economic sectors namely; agriculture, manufacturing, building and construction, mining and quarrying, energy and water, trade, tourism, restaurants and hotels, transport and communication, real estate, financial services and personal/household as well as geographical comprising of foreign and domestic loans (RBZ, 2015).

This growth is mainly attributed to the need to create efficiency and convenience in the Zimbabwean market through alternative banking channels, for instance, agency banking, internet banking, mobile banking and branch network expansion strategy in Zimbabwe and

across the Southern African community and the bank's resilience to lower their rates preceding the introduction of the Zimbabwe Bank's Reference Rate, Nyangara, (2020). Despite the current environmental rates, banks in Zimbabwe have attempted to keep their margins, Nyangara, (2020). According to the RBZ's prudential guidelines, monetary policies should be developed to achieve and guarantee overall price level stability and solvency, promote liquidity, and operate a sound market-based financial system. In order to reduce the risk of bank failure, Zimbabwean commercial banks undertook extensive reorganisation. In addition, the government of Zimbabwe's divestment initiative aims to boost intermediation capabilities, performance, and competitiveness in the banking sector (RBZ, 2021).

The South African Development Community (SADC) and Eastern and Southern African (ESAF) Banking Supervision Group Central Banks collaborated on a project to enhance bank supervision procedures, including licensing banks, taking enforcement action, creating and maintaining supervisory data, conducting off-site and on-site supervision, and performing risk monitoring, Ndlovu, (2019). The banking supervision process continues based on off-site and on-site surveillance, focusing more on risk-based management. Technology advancements have significantly increased the accuracy and timeliness of off-site data submitted to the RBZ. In 2018, risk-based supervision was implemented, but small banks needed to know the importance of having formal, documented risk management frameworks. While other commercial banks use restructuring as a survival tactic, the RBZ mandates that all banks that go through financial crises engage in restructuring to cut costs and increase financial performance (RBZ Supervision Annual Report, 2020). As of 31st of December 2020, the sector that deals with banking activities are the RBZ which regulates all the 13 Zimbabwe commercial banks

1.2 Research Problem.

Globally, the Fintech industry is quickly expanding. In the first half of 2015, it was about \$ 4.8 billion and also in the first half of 2018, approximately \$57.9 billion and in the first half of 2020 it was around 2 trillion dollars invested in Fintech entities throughout the Globally, Mishra, P.K. (2021).

The abrupt and widespread arrival of top digital internet firms, referred to as Fintech, has caused real upheaval in conventional banks Lumpkin, (2020). In theory, businesses like

Branch, Apple, Google, and Amazon have previously given fintech startups some thought but have not wholly entered the sector. However, since they have easy access to many client data and can communicate with them about financial services, they have a bigger potential. In addition, social media companies are currently using fintech financing to cross-sell their financial services to better understand their users, Mishra, (2021).

There were about 11 fintech companies at the end of 2021 Zimbabwe, (RBZ 2021). They provide various services such as making payments/remittances, lending/financing, crowd-funding platforms, and other services that were the banks' preserve. According to a study by RBZ (2017), Fintech poses a threat to the banking sector by taking part in their market share and hence their margins. This is because they now provide services to groups that banks traditionally did not, such as the unemployed poor and young individuals who lack financial stability and new businesses with bad credit ratings or no financial history. In addition, Fintech has also allowed people to manage their finances, as they can track their expenses Balyuk & Davydenko, (2020).

Several types of research have been conducted to determine how Fintech affects global banking. China is one of the leading economies in fintech adoption, claim Narayan, P.K. (2021). Through telecommunication companies, people can make deposits which would earn them higher interest than banks, as banks have interest rate ceilings. In addition, banks in China had no extensive branch networks, Narayan, (2021). Fintech was thus able to spread, According to Pesaran, Shin, & Smith, (2020), fintech firms provide one-third of all loans in the United States. According to Ongore, & Kusa, (2019), the rise of Fintech and other shadow banks results from strict bank regulations that increase capital requirements and legal scrutiny. According to Tyavambiza, & Nyangara, (2020), financial innovation by banks increased their profitability significantly in Zimbabwe. Bokosi & Makova, (2020) asserts that while banks always develop new products, the pace of innovation is influenced by factors such as ownership, operational history, and organisation size. It has been demonstrated that financial innovation increases economic growth and improves the bottom line of commercial banks, Ibrahim, (2018).

No study, however, has been carried out in Zimbabwe to establish whether the increasing, unregulated fintech sector is impacting the banking sector's profitability, particularly in Commercial banks in Zimbabwe. This study, therefore, addressed this gap.

1.3 Research Objective

- To investigate the effect of fintech firms on the financial performance of the Commercial banks' sector in Zimbabwe.

1.3.1 Specific objectives of the study

- To assess the effect of capital adequacy on the financial performance of commercial Banking Fintechs in Zimbabwe.
- ii. To assess the effect of the size of the customer base on the financial performance of commercial Banking Fintechs in Zimbabwe.
- iii. To assess the effect of the size of loans advanced to customers on the financial performance of commercial Banking Fintechs in Zimbabwe.

1.3.2 Research Questions

- i. What is the effect of the number of registered mobile payment account users on the financial performance of commercial Banking in Zimbabwe?
- ii. What is the effect of the number of mobile payment transactions on the financial performance of commercial Banking in Zimbabwe?
- iii. What is the effect of the transaction value on the financial performance of commercial Banking Fintechs in Zimbabwe?

1.4 Hypothesis to be tested:

 H_1 . The number of registered mobile payment account users do not significantly affect financial performance of commercial Banking Fintechs in Zimbabwe.

H₂: Number of mobile payment transactions do not affect the financial performance of commercial Banking Fintechs in Zimbabwe.

H₃: The transaction value do not significantly affect the financial performance of commercial Banking Fintechs in Zimbabwe.

1.5 Value of the Study

The study's findings will add to the body of knowledge already available on financial performance as it relates to the impact of introducing fintech companies as study variables. Additionally, the research result will provide vital literature on the theories and policies that

inform the study variables. The significance of financial intermediation and the need for organisations to be innovative and adapt to technology in order to be effective and remain competitive will be further illuminated by theories like financial intermediation, theory of innovation diffusion, technology acceptance theory and institutional theory.

The study methodology on stepwise regression will be helpful to researchers who might be keen on analysing complex relationships between the dependent and many independent variables.

This study will contribute to managerial practice on services offered by commercial banks, banks" specific factors and aligning banks to these aspects and managerial practices. Essentially, all organisational practices should get above average and establish an appropriate link between services offered by the fintech firms and bank-specific factors to ensure that banks do not lose market share to the former.

The report will be helpful to the Central Bank because the regulatory body may need to establish restrictions for fintech firms to acknowledge them as a legitimate economic force. As a result, Fintech and banks in Zimbabwe will compete on an even playing field.

1.6 Limitations

The findings of this study need interpretation with appropriate consideration of several limitations. First, since Fintechs is an emerging technology in the financial sector, few studies have focused on this area. This created a challenge in accessing empirical studies that have compared the interaction between Fintechs and the financial performance of commercial banks in Zimbabwe. Secondly, due to the sensitivity of sharing financial information with third parties, there was a limitation in accessing in-depth information on the interaction between lending Fintechs and the performance of commercial banks. This led to reliance on secondary data.

1.7 Scope of the Study

Three determinants of the financial performance of commercial banks in Zimbabwe were studied: the number of registered mobile payment account users, the number of mobile payment transactions, and the transaction value, by commercial banks. The study focused

on commercial banks in Zimbabwe during the study period of 2009-2021 and the aspect of 11 Fintech commercial banks.

1.8 Ethical considerations

The researcher undertakes to respect and observe ethical issues. This research tried to minimize the infringement of rights of participants by upholding the following oaths;

- 1.8.1 The research was done with the consent and approval of organisation officials and participants. No data collected without their prior approval.
- 1.0 Reason for the research was explained to all respondents and it was upon their will to take part in the study, they were not forced to participate.

1.9 **Definition of terms**

• For the purpose of this study the following terms are going to be defined as below:

1.10 Chapter summary.

This study consists of background of the study, problem statement, objective, hypothesis, significance of the study, assumptions of the study, challenges, definition of terms and theorganization of the chapter. This chapter has traced the The effects of Financial Technology (Fintech) on the Financial Performance of Commercial banks in Zimbabwe. The next chapter is the literature review which shall focus on what other authors have to say on the mentioned problem in order to come up with a solution.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The theoretical review in this chapter discusses the theories of financial intermediation, theory of diffusion of innovation, institutional theory and technology acceptance theory. The esmpirical review summarises concepts of bank restructuring and financial performance.

2.1 Theoretical Review

The theories summarised in this section are the theories of financial intermediation, the theory of diffusion of innovation, institutional theory and technology acceptance theory.

2.2 Theory of Financial Intermediation

Financial intermediation is the movement of funds from economic entities with surplus amounts to those who need funds. The theory of financial intermediation calls for financial intermediaries that rely on magnified transaction costs, huge monitoring costs, asymmetric information, and the presence of financial sector regulation. The theory depends on the idea of resource allocation and is based on perfect and complete markets. The theory also argues that the market has frictions, such as information asymmetry and transaction costs, which are critical to understanding and appreciating financial intermediation. Metron (1995) asserts that information asymmetries cause market imperfections, most of which produce certain types of transaction and monitoring costs. Through screening, financial institutions enable the lessening of unfavourable selection. By putting in place debtor monitoring mechanisms, they lessen moral hazards in financial markets. The theory claims that asymmetric information between economic units with excess and those with deficits also cause Financial market imperfections.

The second dimension of this theory focuses on the costs of affecting transactions. Financial institutions lower transaction costs when economic units trade directly with one another by leveraging economies of scale. Finally, the third argument is pegged on the regulation method to control savings and investments in the economy. For example, regulation may require financial institutions to maintain liquidity levels above specified thresholds and impose precise deposit-to-capital ratios (Andries & Cuza, 2009).

The financial intermediation hypothesis is critical in describing the relationship between restructuring and the characteristics of financial institutions, including commercial banks. The asymmetric information component of the theory suggests that where financial institutions exist, regulation on the provision of information makes it easier for financial market participants to access the financial market's data. This also implies lower costs for dealing with adverse selection and moral hazards, lowering the risk of non-performing loans and improving financial performance. Furthermore, transaction costs imply that increased size, technological advancement, and managerial competency lead to more financial services at lower costs (Merton, 1995). On the other hand, the theory's leading critics argue that many institutions that have issued various types of securities are required for the theory to hold. This criticism is mitigated by continuous time techniques for option pricing models, such as the Black and Scholes model and the general equilibrium theory of determining prices.

Furthermore, dynamic trading of financial assets in technologically advanced financial markets enables these markets to compete effectively even when financial securities and financial institutions are scarce. Both the fintech and commercial banks provide financial intermediation services. Fintech has embraced innovation and technology to provide financial services at lower transaction costs more conveniently and efficiently. They are also subject to far less regulation than commercial banks. As a result, they now have a competitive advantage over banks. Therefore, this research aims to determine this impact on Zimbabwe's commercial banks.

2.3 Theory of Diffusion of Innovation.

The theory of diffusion of innovation is widely pronounced and was advanced by Rogers (1995). The founder defines diffusion of innovation as: "... the process by which an innovation is communicated to members of social systems over time through specific channels. It is a unique form of communication in that the messages are about new ideas " (Rogers, 1995). Therefore, not embracing an innovation translates to rejecting a viable new idea. However, Rogers suggests several tools for measuring the rate of adoption of innovation, including relative compatibility, advantage complexity, trialability, and observability. According to Rogers (1995), these five characteristics influence innovation and are critical in explaining the rate of technology adoption. Diffusion of technology is a

fundamental process whereby the technological potentials of innovative initiatives are transformed to be productive. Different attributes of the economic environment where diffusion occurs could influence the diffusion rate, while the actual diffusion has feedback mechanisms on the environment. As a result, a thorough understanding of this process necessitates answering critical questions such as the factors that determine the various rates of diffusion, the identification of early technological innovation adopters, the factors that dictate the various diffusion rates, and the effects of diffusion on the economic environment. The diffusion of Financial Technology (Fintech) offers an excellent platform to examine these questions closely. If a commercial bank in Zimbabwe observes the importance of technological innovations and possesses the tools, it will adopt these innovations. The innovations" adoption will smoothen the banking institution's financial, operational and portfolio.

2.4 The Institutions Theory.

Institutions, according to the theory, are social structures with norms and expectations that have had to demonstrate a high level of resilience. Institutions carry out a wide range of activities. They have varying levels of jurisdiction, ranging from one systemic world to the next, with localised interpersonal relationships (Lounsbury, 2008). The institutional theory looks into the more profound attributes of the social structure. It aims to investigate the mechanisms that allow systems such as schemes, norms, routines, and rules to become ingrained as the accepted guidelines for social behaviour in organisations (Scott, 2004). Banks undergo restructuring in order to provide services to a variety of clients while remaining competitive. Organisations can change their structure and form to increase efficiency through restructuring.

According to Scott (2004), to survive in a competitive environment, organisations must follow the rules and belief systems of the environment because isomorphic institutions, whether through structure or procedures, including the firm's goods and services, tend to earn the organisation legitimacy. For example, MNCs doing business in different countries with different institutional environments face divergent pressures and are expected to use a restructuring approach that considers the country's circumstances, including their ownership structure. Pressures influence every economy's competitive strategy in the host and domestic institutional environments, which significantly influence such economies. According to Knetter (1989), firms in different economies respond differently to the same challenges (economic, political, and social factors), forming an institutional structure that confers benefits to firms for performing specific duties.

As a result, the institutional theory requires firms to be able to conform to their environments. The environment has now advanced to the use of mobile phones, which has significantly increased the convenience and cost of transactions. Social media and other internet platforms are also available, supplying big data that Fintech can use to lower information asymmetry while providing financial services. Banks must comply with the environment's current social structure and behaviours to survive and thrive.

2.5 Technology Acceptance Theory

Davis, Bagozzi, and Warshaw (1989) proposed the Technology Acceptance Theory (TAT) to investigate the conceptual model of the user's intention or the degree to which an information system or new technology has been completed. TAT is designed based on the perceived ease and usefulness of the new technology. Perceived effectiveness of technology refers to a person's belief in the ability of information systems or new technologies to improve job performance. The perceived ease of use of new technology (Baker et al., 2015). The TAT model emphasises how the perceived ease of use of new technology influences the perceived usefulness of technology. An external variable, such as the environment in which an individual lives, influences perceived effectiveness and ease of use. As a result, Technology Acceptance Theory is founded on two critical perceptual factors: perceived ease of use and perceived usefulness. Technology Acceptance Theory is applied highly to research involving information technology. Liu and Arnett (2000) analysed the critical variables to develop a lucrative website based on the TAT model.

An external variable, such as the environment in which an individual lives, influences perceived effectiveness and ease of use. As a result, Technology Acceptance Theory is founded on two critical perceptual factors: perceived ease of use and perceived usefulness. The researchers deliberated on whether or not the government of the Netherlands ought to provide the citizens with an electronic platform to access government services as other countries do. The study used TAT factors such as perceived risk, faith, and public

experiences. The empirical study revealed that e-government principles are based on citizens' complete trust in government firms and that citizens have a strong association with IT. According to the findings of the empirical study, Technology Acceptance Theory not only explains how users of new technology accept and adopt the technology, but it also ensures that Technology Acceptance Theory is suitable for describing the behaviour of online users" of technology (Pavlou, 2003; Horst et al., 2007). Technology Acceptance theory is a critical theory that underpins the current study on the effect of fintech firms on the performance of listed banks in Zimbabwe. Just like the acceptance and growth of the fintech companies, it is not just enough for banks to come up with innovative technologies for banking. Still, the bank's clients must accept and adopt the technologies. TAT is designed based on the new technology's perceived usefulness and ease of use. Perceived usefulness of technology implies a person's belief to enhance job performance via a specific information system or new technology. The ease with which a person learns to use or operate new information systems or technology is perceived ease of use of new technology (Baker et al., 2015).

2.6 Determinants of Financial Performance.

2.6.1 Capital Adequacy

According to Athanasoglou et al. (2005), capital is a significant variable in determining a bank's financial performance. Capital is the owner's contribution which supports the bank's activities and acts as a buffer against negative occurrences. In imperfect capital markets, well-capitalised banks must reduce borrowing to maintain a particular asset index. They typically face lower funding costs due to lower prospective bankruptcy costs. A well-capitalised bank has a signalling effect on the market that performs above average is expected. For example, Athanasoglou et al. (2005) discovered that capital contributions positively influenced bank profitability, reflecting the sound financial condition of Greek banks. Berger et al. (1987) also discovered a positive relationship between capital contributions and firm profitability.

2.3.2 Size

The size of a bank determines how much legal and financial factors influence a firm. Bank size is closely related to capital adequacy because large banks raise less expensive capital and generate massive profits. Furthermore, bank size positively correlates with the return on assets, indicating that large banks can achieve economies of scale that reduce operational costs and hence help banks improve their financial Performance (Amato & Burson, 2007). Magweva and Marime (2016) link bank size to capital rations claiming that they are positively related to each other, suggesting that as the size increases, profitability rises. A company's assets determine its size (Amato & Burson, 2007). It is argued that large firms have sufficient resources to undertake multiple projects with higher returns than small firms. Furthermore, firms with large total assets have more collateral to pledge to access credit and other debt facilities than their smaller counterparts (Njoroge, 2014). Lee (2009) established that a firm's total assets, as measured by total assets, influence the level of profitability recorded from one year to the next.

2.6.2 Bank Liquidity

Liquidity refers to an entity's ability to meet debt obligations due in the next twelve months with cash or cash equivalents; for example, short-term assets can be quickly converted into cash. According to Adam and Buckle (2003), liquidity results from the manager's ability to meet policyholder and other creditors' obligations without increasing profits from activities such as underwriting and investment and their ability to liquidate financial assets. According to Liargovas and Skandalis (2008), firms can use liquid assets to finance their activities and investments when external finance is unavailable). As a result, firms with greater liquidity can deal with unexpected or unforeseen contingencies and meet obligations that arise due to low earnings periods. Almajali et al. (2012) observed that a firm's liquidity could significantly impact its financial performance; thus, insurance companies should aim to increase their current assets while decreasing their current liabilities. However, Jovanic (1982) observed that an abundance of liquidity could sometimes cause more harm than good. As a result, he concludes that liquidity's effect on a firm's financial performance is ambiguous.

2.6.3 Macro-Economic Variables

Policymakers have prioritised the impact of macroeconomic variables on commercial bank financial performance, particularly bank risk. Using GDP growth to control cyclical output

effects likely to positively influence bank profitability; as the GDP growth rate slows, particularly during a recession, banks experience negative returns due to lower credit quality and increased defaults (Flamini et al., 2009).

Macroeconomic variables that impact the performance of banks include legislative laws, inflation rate, interest rate and economic growth level measured using Gross Domestic Product (GDP). Athanasoglou et al. (2005) argue that the GDP trend influences the demand for banks' assets. A decrease in GDP growth reduces credit demand, which reduces bank profitability. Furthermore, depending on the business cycle, a growing economy with positive GDP growth is high. As a result, credit is in high demand during the boom as opposed to the recession.

Without Citations, the study becomes shallow. revise

2.7 Empirical Review.

Studies in this section focus on bank restructuring and financial performance. Osoro (2014) studied the impact of financial restructuring systems on the Financial Performance of Zimbabwe's commercial banks. The research focused on thirteen commercial banks quoted at the ZSE that was in business from 2010 to 2020. The financial restructuring was measured using debt, equity, and dividend payout. The data was analysed using multiple linear regression in the study. According to the findings, financial restructuring positively impacts the financial performance of Zimbabwe's commercial banks. However, the effect was insignificant, explaining only 26.7% of the financial performance.

A study by Sachikonye, (2016), examined corporate restructuring and its impact on the Performance of Zimbabwe Commercial Bank's performance. The study employed a descriptive approach. The sample consisted of 100 commercial bank employees. Data was collected using a structured questionnaire and analysed using descriptive statistics. According to the research findings, the main drivers of restructuring are competition, budgetary cuts, new company strategy, changes in government policy, and public pressure.

Henry, & Stiglitz, (2010), use data from 193 institutions that conducted banking business in 58 countries to investigate the barriers to accessing banks' financial services. The study relied on primary data, and the indicators of bank access used were deposits, credit, and payments. The result was that bank size, and physical infrastructure accurately predicts

barriers. The role, however, of the microfinance institution Bonin et al. (2004) investigated whether banks' privatisation programmes in transition economies affect these banks' financial performance. Using the largest banks in six advanced countries, including Bulgaria, the Czech Republic, Hungary, Croatia, Romania, and Poland, the researchers discovered that income and balance sheet characteristics were comparable across the four bank ownership types. This study used stochastic frontiers to compute efficiency measures used in privatisation and ownership regressions with dummy variables per the bank type. The empirical findings accept the hypotheses that government-owned banks are least efficient while foreign-owned banks are most efficient.

Honohan and King (2009) investigated the impact of firm factors such as size (capitalisation and total assets), ownership, profitability, access to financial services, and years in the banking industry on the impact of firm factors. The number of branches on the outskirts of major cities was used to assess the bank's ability to provide financial services. Duration in the banking industry was calculated by counting the years since the bank was licensed. After-tax adjustments on extraordinary items, the bank's profits were used to measure profitability, and ownership of the firm was categorised as either foreign or local. In contrast, the firm's total assets were used to measure firm size. The regression results revealed that firm size is the most important determinant of access to financial services. However, this study did not look into the role of multinational banks in gaining access to financial services on a local and international scale.

Ndlovu, G. (2013) investigated specific firm factors and the modes of access to financial services used by Zimbabwean commercial banks. The dependent variable was bank branch access to financial services, while the independent variables were firm factors such as profitability, years in business, size, and ownership. The results revealed that firm-specific factors, including capitalisation, have a solid and positive relationship with financial services" access. However, the study did not relate the ability to access financial assistance to the number of deposits and the size of customer loans.

According to Al-Obaidan (2008), the essential characteristics of state-owned banks, whether agricultural, hybrid, or industrial, are their reliance on external donors and the government for resources at reasonable interest rates, a broader range of subsidy offerings than private banks, political pressure to lend to non-creditworthy and risky borrowers, and the provision

of a limited range of financial services. As a result, an economy with few public banks relies on private capital, which emphasises ensuring that most citizens have access to services.

Gianetti and Ongena (2009) studied the impact of positive growth implications of financial integration on small and young firms. The effect of differences in foreign bank lending on firm financing and growth was studied using panel data from 60,000 annual observations of firms listed and unlisted in Eastern European countries. Foreign lending has been found to stimulate growth in firm sales, assets owned, and debt utilisation, even though the effect is more favourable for smaller establishments. More specifically, young firms benefit more from the presence of foreign banks, whereas entities linked to domestic banks or the government suffer. Research findings suggest that foreign banks can help mitigate cub-connected lending problems and improve capital allocation.

Yildirim (2013) investigates the various firm characteristics influencing credit access by sampling 970 SMEs from nine provinces in South East Anatolia, the Mediterranean, and Turkey's zones. The findings revealed that the size of assets, the stability and volume of sales, the legal form, and the export rate are all critical determinants of satisfying bank services and products. These findings support the hypothesis that larger firms with large and stable sales have a more remarkable ability to access financial services and thus benefit more from credit services extended to their locals.

2.8 Conceptual Framework

To attain the study's objectives, different variables under investigation can be conceptualised as being in the association, as presented in Figure below. **Figure 2.1: Conceptual Framework**





2.9 Literature Review Summary

This chapter was looking at literature reviewed by other authors. It is organized as follows: introduction, effects of Financial Technology (Fintech) on the Financial Performance of Commercial banks in Zimbabwe. The following chapter will be looking at methodology framework that was used in research to address the objectives and the process by which the research was undertaken.

CHAPTER THREE

3.0 **RESEARCH METHODOLOGY**.

3.1 Introduction

This section discusses the research methodology used in the study. A detailed research design, study population, data collection methods, research instrument reliability and validity, and data analysis techniques are presented.

3.2 Research Design

A research design is a blueprint for carrying out a study with complete control over the variables that affect the validity of the findings. There are two types of research designs: experimental and non-experimental. A descriptive research design will be used for this study. The causal research design is preferred for this study because it expresses hypotheses explicitly and seeks to determine the cause-and-effect relationship between two or more variables (Cooper & Schindler, 2003).

3.3 Population

A population is defined by Cooper and Schindler (2003) as the entire group of individuals, happenings, or objects that share characteristics and adhere to a given specification. The 13 banks that makeup Zimbabwe's commercial banks were all counted in this study. These thirteen commercial banks are registered under the Banking Act of Zimbabwe.

3.4 Data Collection

Secondary data where used for the study period, which runs from 2009 to 2021, and the unit of analysis is yeary. Data were obtained from the Ministry of Finance and Rerseve bank of Zimbabwe (RBZ) (economic surveys, the financial inclusion report, banking supervision and banking sector reports, and the central bank's national payments system statistics).

3.5 Data Analysis

The collected Pannel data were checked for stationarity, multicollinearity and diagnostic tests (normality, autocorrelation, heteroscedasticity). before beginning the analysis. The longitudinal data were entered using E-Views. The Panel data were analysed using descriptive statistics, correlation analysis, and multiple regression analysis. Descriptive statistics, dispersion and measures of central tendency were used. Inferential statistics

include bivariate Pearson correlation and multiple linear regression. Tables with explanations were used to present the findings.

3.5.1 Analytical Model

The Panet data model shown below describes the relationship between study variables. The regression analysis model aided in the data analysis in this study. The consolidated ROA of Zimbabwe's commercial banks was the dependent variable, while the number of registered mobile payment account users, the number of mobile payment transactions, and the transaction value by Fintech firms were the independent variable.

 $Y = \beta 0 + \beta 1 X 1 + \beta 2 X 2 + \beta 3 X 3 + \varepsilon \dots 1$

Where:

Y is the average return on assets of the Commercial banks in Zimbabwe at t.

X1 is the number of registered mobile payment account users in quarter1-n

X2 is the number of mobile transactions measured in quarter1-n

X3 is the value of money transacted during quarter1-n

 $\beta 0$ is the constant term,

 β 1, β 2, and β 3 are the regression coefficients

 ϵ is the error term.

Period (t) is quarterly, from 2009 – September 2021

2.6 Method and data analysis

2.6.1 The Method of Estimation

The regression analysis is used to identify the direction and significance of relations between The effects of Financial Technology (Fintech) on the Financial Performance of Commercial banks in Zimbabwe. The regressions are performed by utilizing the Ordinary Least Square (OLS) and to estimate the regression coefficients. Each regression coefficient estimated by OLS coincides with the true value on the average and they have the least possible variance that is they are efficient so that regression analysis can produce best linear unbiased estimates (BLUE).

Pre estimation test

Correlation Analysis

The Logic behind the assumption of no multi-collinearity is that if two or more independent variables are correlated with each other, one of them should be dropped from the list of variables. In other words, the variable should be negatively correlated, that is if one variable increase the other should be decreasing. In order to check multi-collinearity among independent variables, a correlation analysis was performed. A suggested rule of the thumb was that if the pair wise correlation between two regressors is very high, in excess of 0.8 absolute, multi-collinearity may pose serious problem (Adam & Twenoboah, 2008). The worst consequence of multi-collinearity is that it increases the variances and standard errors of the OLS estimates. High variances mean that the estimates are imprecise, and therefore not very reliable. High variances and standard errors imply low t-statistics (Granger, 2001).

Stationarity Analysis

A stationary variable gives us green light to use stochastic models in analysing the dynamic behaviour of returns volatility over time. A unit root test examines whether a time series variable is stationary or non-stationary using an autoregressive model approach. The presence of a unit root in the data series was checked by employing the Augmented Dickey-Fuller (ADF) test (which is a parametric test) and the Phillips-Perron (PP) test (a non-parametric test). These tests are very common in the academic world and their application is very high in comparison to other tests. Estimating any volatility model using non-stationary data can result in spurious results where the standard errors produced are biased and might result in a model establishing a significant causal relationship between variables which in actual fact may not exist (Brooks 2008).

The researcher only considered the variable which are stationary at level, this implied that its integrated of order zero I (0) if the data is not stationary it should be differenced became integrated of order one, I (1) or until it is stationary. The evaluation of the results was guided by the critical values provided by Mackinnon (1996).

Arch tests.

One of the most important issues before applying the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) methodology is to first examine the residuals for evidence of heteroscedasticity. To test for the presence of heteroscedasticity in residuals of Commercia bank sector the Lagrange Multiplier (LM) test for ARCH effects proposed by Engle (1982) is applied. In summary, the test procedure is performed by first obtaining the residuals from the ordinary least squares regression of the conditional mean equation which might be an autoregressive (AR) process, moving average (MA) process or a combination of AR and MA processes (ARMA) process.

This legitimizes the use of Arch family models- autocorrelation, arch effects, skewness which are prevalent in developing nations Kim 2003, and Ng 2000 and in developed by Kim and Kon 1994.

If variables are normally distributed on estimation, the researcher will use EGARCH but if the tail is fatter of there is excess kurtosis now calls for estimation using Student-t or GED (fatter tails distributions) better than Gaussian (normal) distribution.

Diagnostic Tests.

The regression model of differenced value of the the number of registered mobile payment account users, the number of mobile payment transactions, and the transaction value (dependent variable) against ROA, and the error correction term was estimated. Diagnostic tests for the estimated model were done. In this test, if non-linear combinations of the explanatory variables do not have any power in explaining the endogenous variable, the model is correctly specified (Ramsey, 1969). The null hypothesis of the test is that the model is linear against an alternative.

Data presentation and analysis technique

The quantitative data will be presented using tables mostly to show r^2 , P (F-statics), adjusted r^2 and the Durban Wartson statics figures.

2.6 Summary of Literature Review

This chapter was looking at literature reviewed by other authors. It is organized as follows: introduction, evidence that Financial Technology (Fintech) affects the financial performance

of Commercial banks in Zimbabwe. The following chapter will be looking at methodology framework that was used in research to address the objectives and the process by which the research was undertaken.

4.0 CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter includes a presentation, interpretation and findings discussion. The chapter is divided into four sections. It will include descriptive statistics, correlation analysis statistics, regression analysis, and findings interpretation and discussion.

The study looked at the impact of the fintech sector on Zimbabwe's commercial banking sector's financial performance. The study was conducted for thirteen quarters, from 2009 to December 2021. Data on Return on assets, the number of registered mobile payment account users, the number of mobile payment transactions, and the value of the transactions were obtained from RBZ's websites. ROA is important because we can get it easy and it is avaiable yearly.

4.2 Descriptive statistics.

4.2.1 Non-normality of ZSE indices returns.

To fully analyse the distributional characteristics and probability distribution function of the return series on Commercia banks, measures of location (mean), dispersion (variance, and standard deviation), asymmetry(skewness) and concentration in tails (kurtosis) were calculated. Table 2 provides the descriptive statistics that is the unconditional distribution statistics for effect of Fintech on Commercial.

4.3 **Descriptive Statistics**

Descriptive statistics was undertaken to establish the frequency of occurrence of individual subjects or a collection of instruments to establish their associations. It provides a variety of variables, such as approximating the objectives and defining the set of attributes exhibited by the population. The descriptive research aided the generalisation of this study's findings.

	_MA_CCNTS	_MTRANS	VALUEMT	ROA
		572396462.724094		
Mean	6788102.833333334	1	44920652974.70374	3.276792325
Median	7245759	203358845.810435	4140143815.7297	2.4712805
Maximum	15567046	1938855307	345441000000	12.65756
Minimum	53868	194547	631361.7	0.6650299
		747291674.389609		
Std. Dev.	5876915.812007037	7	100297503624.2047	3.197139198523426
	0.146883819830633	0.96275238611365		
Skewness	8	88	2.524866213942689	2.322991141724502
		2.18243768711967		
Kurtosis	1.497244380028793	9	8.04419657475627	7.451822207931185
		2.18798838165619		
Jarque-Bera	1.1722869397336	7	25.47185833901002	20.70193617457565
	0.556469192122248	0.33487625922923		3.196183295151034e
Probability	7	54	2.943447132142119e-06	-05
Sum	81457234	6868757552.68913	539047835696.4449	39.32150790000001
Sum Sq.		6.14289331273229		
Dev.	379919534075601.8	1e+18	1.106554815657208e+23	112.4386896020852
Observations	12	12	12	12

Source: Author calculations using E-views 7

VARIABLES ARE: _MA_CCNTS- IS the number of mobile money account holders

_MTRANS- is the number of mobile money transactions

_VALUEMT- is the value of mobile money transactions

ROA- return on asset

From the findings in Table 2 above, the highest value for Return on Assets (ROA) is 12.7%, while the lowest value is 0.08%. The following measures of central tendency were exhibited; a mean of 0.665 and a median of 2.471%. Also, the standard deviation value depicts variability in the stock returns of ± 3.197 %. Data series is usually distributed if its skewness statistic lies in the range of -0.8 to +0.8 and its kurtosis statistic lies within the scope of -3 to +3. Though the ROA data series skewness has a skewness statistic that lies slightly out of the prescribed range, its kurtosis statistic lies intact within the specified range. In the conflict of the skewness and kurtosis statistics, the kurtosis statistic is preferred over the skewness statistic. Thus the ROA data series is normally distributed.

From the findings, the highest valu7245e for the number of registered mobile payment account users is 15,567,046 million, while the lowest value is 53,868 thousand. The following measures of central tendency were exhibited; a mean of 6, 788 million and a median of 7,246 million. The data in the series exhibit normal distribution because its skewness lies within the range of -0.8 to +0.8, and the kurtosis lies within the scope of -3 to +3. In addition, the value of the standard deviation depicts variability in the variable of 3,800 billion.

Further results from the findings indicate that the highest value of the number of mobile payment transactions quick ratio is 1,939 Billion, while the lowest value is 194,547 thousand. The following measures of central tendency were exhibited; a mean of 572, 396 million and a median of 203,359 million. Furthermore, the standard deviation value shows variability in the variable of \pm 747291674. The data in the series exhibits a normal distribution because it has skewness within the range of -0.9 to +0.9 and a kurtosis within the scope of -3 to +3.

The final results from the findings point out that the highest value of mobile payment transactions is 345.4 billion, while the lowest value is 631,361.7 Million. The following measures of central tendency were exhibited; a mean of 44.9 billion and a median of 4.1 Billion. Also, the standard deviation value depicts variability in the variable of $\pm 100,2$ billion. Data in the series has a normal distribution just because it

has skewness which lies within a range of -2,5 to +2,5, and a kurtosis a the range of -8 to +8.

4.4 Correlation Analysis

Correlation analysis was taken to study the relationship between the variables that lie between perfect positive correlation and strong negative correlation. Parson correlation was employed to analyse the level of association level between firm performance and liquidity, as well as the association between business performance and the control variables. The study used a Confidence Interval of 95 % since it is the most used in social sciences. A two-tailed test was used.

Table 4.2: Correlation analysis

	_MA_CCN		VALUEM	
	TS	_MTRANS	Т	ROA
_MA_CCN				
TS	1.000000			
MTRANS	0.902446	1.000000		
VALUEM				
Т	0.589383	0.703384	1.000000	
ROA	-0.199591	-0.018306	-0.102876	1.000000

CORRELATIONS

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

The study findings in Table 4.2 indicate that ROA is significantly correlated at the 1% significance level (hence, consequently also significant at the 5% significant level) to all the predictor variables included in the study. The findings imply a positive relationship between each predictor variable and ROA. All independent variable are logged beause of their natural logs. This is because their units are different.

The significant correlation at the 5% significant level between all the predictor variables indicates the presence of multicollinearity. Multicollinearity is a statistical phenomenon in which a perfect or exact relationship exists between the predictor variables. Thus, it will

result in incorrect conclusions about the relationship between the outcome variable and predictor variables. Since all the predictor variables are not significantly correlated at the 5% significance level, all variable can be retained. All independent variable are logged beause of their natural logs. This is because their units are different.

4.5 Regression Analysis

Using Pane data regression, the ROA was regressed against the dependent variable the number of registered mobile payment account users, the number of mobile payment transactions, and the transaction value.

A test to determine linearity was first introduced because linearity is a pre-condition to running a regression on a model. Linearity is present when the conditions of normality and homoscedasticity are met the normality test was conducted through skewness and kurtosis statistics in Table 4.1. Homoscedasticity was achieved by the use of a scatter plot diagram. For the data series number of registered mobile payment account users, the results are exhibited in Figure 4.1 below.

Figure 4.2: UNIT ROOT TESTS/ STATIONARITY TEST

The number of mobile money account holders IS is integrated with Order (1) at 95% confidence interval. The number of mobile money account holders is stationery after ingegrated for the secod time.

Null Hypothesis: D(LOGACCOUNTS,2) has a unit root Exogenous: Constant, Linear Trend

Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.940301	0.0009
Test critical values:	1% level	-5.835186	
	5% level	-4.246503	

10% level -3.590496

*MacKinnon (1996) one-sided p-values.

The number of transactions is integrated with Order (1) at 95% confidence interval. The number of mobile money account holders is stationery after ingegrated for the secod time.

number of mobile trans is intergrated of order 1

The number of mobile transactions is integrated with Order (1) at 95% confidence interval. The number of mobile money account holders is stationery after ingegrated for the second time.

Null Hypothesis: D(LOGTRANSAC) has a unit root Exogenous: Constant, Linear Trend Lag Length: 2 (Automatic - based on SIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.565948	0.0095
Test critical values: 1% level	-5.521860	
5% level	-4.107833	
10% level	-3.515047	

The value of transansaction is integrated with Order (0) at 95% confidence interval. This as well means value of transansaction is stationery in its own.

Null Hypothesis: LOGVALUE has a unit root Exogenous: Constant, Linear Trend Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented	Dickey-Fuller test statistic	-12.61712	0.0001
Test	critical		
values:	1% level	-5.295384	
	5% level	-4.008157	
	10% level	-3.460791	

*MacKinnon (1996) one-sided p-values.

The ROA is integrated with Order (0) at 95% confidence interval. This as well means ROA is stationery in its own.

Null Hypothesis: ROA has a unit root Exogenous: Constant, Linear Trend Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented	Dickey-Fuller test statistic	-6.855653	0.0012
Test	critical		
values:	1% level	-5.124875	
	5% level	-3.933364	
	10% level	-3.420030	

With the conditions of normality and homoscedasticity being met, it is evident that the data series is panel related to the response variables, ROA. Thus regression could be run on the model. The regression analysis was undertaken at a 5% significance level.

The critical values obtained from the significance level, F-test, and T-test were compared with those obtained in the analysis.

Table 4.3: Model Summary

Estimation Results

Dependent Variable: ROA Method: Least Squares Date: 11/12/22 Time: 15:05 Sample (adjusted): 2012 2020 Included observations: 9 after adjustments

	Coefficie			
Variable	nt	Std. Error	t-Statistic	Prob.
С	-7.019899	9.134395	-0.768513	0.4769
DLOGACCOU	NT			
Ν	-2.29E-07	3.40E-07	-0.675348	0.3294
DLOGTRANS	0.798124	1.170351	0.681952	0.4256
LOGVALUE	0.377310	0.367859	1.025690	0.3521
		Mean	dependen	t2.38951
R-squared	0.907931	var		6
Adjusted	R0.239452	S.D. dep	bendent var	1.42852

squared				6
		Akaike	info	4.06693
S.E. of regression	1.590387	criterion		5
				4.15459
Sum squared resid	12.64666	Schwarz criterio	on	0
		Hannan-Quinn		3.87777
Log likelihood	-14.30121	criter.		5
				2.17758
F-statistic	0.484823	Durbin-Watson	stat	8
Prob(F-statistic)	0.407404			

ROA.

R square, the coefficient of determination, indicates the deviations in the response variables resulting from changes in the predictor variables. From the outcome in Table 4.3 above, the value of R square was 0.907, a discovery that 90.7% of the deviations in ROA are explained by the variables the number of registered mobile payment account users, the number of mobile payment transactions, and the transaction value. Other variables not included in the model justify 9.3% of the variations in the financial performance of commercial banks.

Durbin-Watson statistic was applied to test for autocorrelation, which gave an output of 2.17, as displayed in Table 4.3 above. A rule of thumb is that test statistic values in the range of 1.5 to 2.5 are relatively normal. Values outside of this range could be cause for concern. Field (2009), however, suggests that values under one or more than 3 are a definite cause for concern. Therefore, the data used in this panel is serially autocorrelated because it meets this threshold.

Analysis of Variance

a. Dependent Variable: ROA

b. Predictors: (Constant),

Accounts

A model is significant if the significance value obtained from the study findings is less than the critical value of 0.05 or the F value obtained is greater than the critical value obtained from the F test tables. The critical value obtained from the F test tables was 2.97515399. The study indicates a significance value of 0.000, which is less than the critical value. The study also gives an F value of 32.091, which is less than the critical value. This implies that the model is statistically significant in predicting how the adoption of mobile payments affects the financial performance of commercial banks in Zimbabwe.

Coefficients

a. Dependent Variable: ROA

The Coefficients indicate the magnitude and direction of the relationship between the independent variables and the response variable. The Significance and T values are used to establish the significance of the relationship between the independent variable to the dependent variable. The values obtained are contrasted with the critical values. A confidence interval of 95% was utilised; hence, a significance value of less than the critical value of 0.05 is interpreted as a measure of statistical significance. A significance value above 0.05 indicates a statistically insignificant relationship between the dependent and the independent variables. The two-tailed two-tailed critical value of ± 2.04523 was obtained from the T-test tables. A T-test value that lies out of this range is significant.

From the results above, it is evident that the predictor variable number of registered mobile payment account users has a statistically significant relationship with ROA at the 5% significance level. It has a significant value of less than the critical value of 0.05 and a T value of 5.665, which lies out of the critical value range. The model coefficient indicates a positive relationship with ROA. The regression equation in the subsequent page was thus estimated:

 $Y = Y = -7.019899 - 2.29E - 07 + 0.798124X2 + 0.377310X3 + \epsilon \dots 1$

Where;

Y = The Average Return on Assets of the Banking Sector in Zimbabwe at t.

 X_1 = The Number of Registered Mobile Payment Account Users in Quarter 1-n.

X2 = is the number of mobile transactions measured in quarter1-n

X3 is the value of money transacted during quarter1-n

 $\beta 0$ is the constant term,

 β 1, β 2, and β 3 are the regression coefficients

 ε is the error term.

Period (t) is quarterly, from 2009 - 2021

4.6 Interpretation and Discussion of Findings

The study specifically sought to establish how the fintech sector impacts financial. Performance of the commercial bank sector in Zimbabwe. The effect of the independent variables retained in the study on the dependent variable was analysed in terms of strength and direction.

The descriptive statistics in Table above reveal that the response and all the predictor variables have a normal distribution. This is indicated by their medians being close to their means and the skewness and kurtosis statistics. However, we can deduce that the variables have changed dramatically, as evidenced by their range, which is the difference between the maximum and minimum statistics, as well as their standard deviations. The research data in Appendix III corroborates that the Zimbabwen populace has hugely used mobile payment services. This indicates that mobile payment has been designed based on perceived ease and usefulness technology as suggested by Davis, Bagozzi and Warshaw" s (1989) Technology Acceptance Theory (TAT).

Despite the competition from fintech firms, commercial banks" financial performance has been on the increase, as indicated by the data in Appendix III. This implies that the banks have embarked on restructuring strategies as suggested by findings by Osoro (2014) and Ithiri (2013) that financial restructuring has a positive impact on Zimbabwen commercial banks's financial performance. It could also signify innovation in the banking industry, as the study by Ngigi (2012) concluded that financial innovation in banks significantly contributed to its profitability.

The test for correlation in Table 4.2 indicates a significant correlation at the 5% significance level of commercial banks' performance to the predictor variables employed in the study, denoting uptake of mobile phone payment. Technology. The findings imply a positive relationship between each predictor variable and the response variable. The results from the correlation matrix that the three predictor variables used in the study exhibit multicollinearity indicate that the three attributes of mobile payment uptake variables denote the same phenomena, uptake of mobile phone payments, and they serve the same purpose.

In the regression analysis, the analysis of variance where only the retained predictor variables were included in the model, whose results are contained in Table 4.4, shows that the model developed is significant, as evidenced by the F and P values obtained when compared to the critical values. Thus, the model can be used to predict the future financial performance of commercial banks.

The model coefficients in Table 4.5 exhibit that the variable number of registered mobile payment account users has a significant positive relationship at the5% significance level to ROA. This implies that the uptake of mobile payments positively affects commercial banks' performance. The model developed implies that; the

constant -3.558 shows that if the predictor variable had a zero value, the dependent variable would equal the value exhibited by the constant. The predictor variable's number of registered mobile payment account users coefficient shows that a unit increase in the predictor variable would lead to an increase in the response variable by 1.206.

The study findings resonate with the survey conducted by Barako et al. (2013), which found that firm-specific factors, including capitalisation, have a strong and positive relationship with financial services access. Thus bank is not losing their foothold as the dominant financial services provider. It also agrees with studies by Ithiri (2013), Osoro (2014), and Ngigi (2012) that financial restructuring and innovation have a positive impact on Zimbabwean commercial banks' financial performance. Moreover, these factors may be enhanced by competitive pressures from fintech entrants into the financial market.

4.7 Summary

This chapter focused on the presentation, discussions and analysis of findings using quantitative techniques. Tables have been employed in the presentation and analysis whilst a model produced was used to analyse the effect of the variables quantitatively. The next and final chapter of this study will provide the conclusion and recommendation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This section looks at the summary of findings, conclusions, recommendations, limitations, and suggestions for further research.

5.2 Summary

This study aimed to determine the effect of the fintech sector on the financial performance of the banking sector in Zimbabwe. The unit period of analysis was yearly, and data was collected from 2009 to December 2021. Secondary data was obtained from; profit before tax, total assets, the number of registered mobile payment account users, the number of mobile payment transactions, and the value of the transactions. The study employed the use of correlation analysis and regression analysis to determine the effect of liquidity on firm performance.

The study established in the correlation analysis that the effect of the variables denoting the uptake of mobile payment solutions exhibits a significant positive relationship between each variable and the financial performance of the commercial banks. Due to the presence of multicollinearity of all the independent variables, one was picked because the inclusion of all of them signified redundancy. When the regression was conducted on the model consisting of the retained predictor variable only, it exhibited a significant positive relationship with commercial banks' financial performance.

5.3 Conclusion

From the above findings, it can be concluded that the uptake of mobile payment and Zimbabwen commercial banks' financial performance has a significant relationship. Globalisation, increasing customer needs, and the number of industries in the sector has led to higher levels of competition and market share. For Zimbabwen banks to enhance financial performance and remain competitive, forming collaborations with fintech companies is mandatory (Mutua, 2013).

5.4 Recommendations

The banking sector is crucial to an economy since it allocates limited resources from surplus units to deficit units. Therefore, policy recommendations are that the Central Bank, the financial sector regulatory agency, should recognise that fintech companies increasingly play a significant role in the economy and formulate regulations relating to them.

Liquidity has been established to influence the performance of firms quoted at the ZSE positively; through its various arms, the government can formulate rules, regulations and policies that revitalise the financial performance of agricultural firms. In addition, the firms can re-invest the excess profits by expanding their scope and employing more individuals. They can also give back to society by conducting Corporate Social Responsibility (CSR) activities.

Recommendations can also be given to the management of the financial institutions where they can enhance contribution to managerial practice on services offered by commercial banks, banks' specific factors and aligning banks to these aspects and managerial practices. Essentially all managerial practice should get to above average Furthermore, it leads to establishing an appropriate link between services offered by the banks and fintech firms and bank-specific factors to ensure that banks do not lose market share to the former. Recommendations can be made to investment banks, institutional investors, stock brokerage firms, and individual investors to enable them to beat the market and make above-average market returns. They can achieve this by investing in commercial bank stock as its financial performance is increasing with the advent of fintech firms.

5.5 Limitations of the Study

Due to time and cost limitations, the scope of the study has been limited to tweve years, from 2009 to December 2021. Thus, it has not been determined if the result findings would hold for a more extended period. Moreover, it is uncertain whether similar findings would result beyond 2017. Since the study employed secondary data sources, some of the data were not readily available, and it took a long time to obtain it. Furthermore, some of the data obtained could also not be used in its raw form; for example, the return on assets and the ratios had to be calculated. Thus, delays were imminent as data was to be edited and processed further before the researcher could compile it. Fintech firms also offer lending and other services, but this information was not readily available for analysis from credible sources like Central Banks as they are not regulated.

5.6 Recommendations for Further Research

The study findings contribute to the pool of knowledge available on the influence of the fintech sector on the financial performance of the banking sector. The findings also offer strength and/or criticism of existing theories. Therefore, this study is helpful to scholars and academicians since they can draw citations from it. The findings of this study can also be used as a foundation for future research by scholars, and from them, can be drawn a niche for further research.

The study settled on the following recommendations; first, many variables impact financial performance, apart from the fintech sector. Further research can be done to identify these factors. Second, the current study's scope was limited to 12 years; further research can be done beyond this time period to ascertain if the findings would hold. Thus, future studies may use a range of many years, for instance, from the advent of mobile payment solutions in 2006 to date, and this can be helpful to disapprove or

confirm the study's findings. Third, researchers in other Southern, African, and other global countries can study the impact of the fintech sector on the financial performance of commercial banks in these jurisdictions to ascertain whether the current study findings would hold.

Secondary data was solely utilised in the study; alternative research can be employed using primary data sources like in-depth questionnaires and structured interviews to be administered to key personnel in the commercial banks. These can then approve or disapprove of the current study findings. Linear regression and correlation analysis were used in this research, and further studies can incorporate other analysis methods like factor analysis, cluster analysis, and discriminant analysis

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Appendices

	_MA_CCNTS	MTRANS	_VALUEMT	ROA
		572396462.724094		
Mean	6788102.833333334	1	44920652974.70374	3.276792325
Median	7245759	203358845.810435	4140143815.7297	2.4712805
Maximum	15567046	1938855307	345441000000	12.65756
Minimum	53868	194547	631361.7	0.6650299
		747291674.389609		
Std. Dev.	5876915.812007037	7	100297503624.2047	3.197139198523426
	0.146883819830633	0.96275238611365		
Skewness	8	88	2.524866213942689	2.322991141724502
		2.18243768711967		
Kurtosis	1.497244380028793	9	8.04419657475627	7.451822207931185
		2.18798838165619		
Jarque-Bera	1.1722869397336	7	25.47185833901002	20.70193617457565
	0.556469192122248	0.33487625922923		3.196183295151034e
Probability	7	54	2.943447132142119e-06	-05
Sum	81457234	6868757552.68913	539047835696.4449	39.32150790000001
Sum Sq.		6.14289331273229		
Dev.	379919534075601.8	1e+18	1.106554815657208e+23	112.4386896020852
Observations	12	12	12	12

VARIABLES ARE: _MA_CCNTS- IS the number of mobile money account holders

_MTRANS- is the number of mobile money transactions

_VALUEMT- is the value of mobile money transactions

ROA- return on asset

CORRELATIONS

	_MA_CCN		VALUEM	
	TS	_MTRANS	Т	ROA
_MA_CCN				
TS	1.000000			
MTRANS	0.902446	1.000000		
_VALUEM				
Т	0.589383	0.703384	1.000000	
ROA	-0.199591	-0.018306	-0.102876	1.000000

UNIT ROOT TESTS/ STATIONARITY TEST

Null Hypothesis: D(LOGACCOUNTS,2) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.940301	0.0009
Test critical values:	1% level	-5.835186	
	5% level	-4.246503	

*MacKinnon (1996) one-sided p-values.

NB: number of mobile trans is intergrated of order 1

Null Hypothesis: D(LOGTRANSAC) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 2 (Automatic - based on SIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.565948	0.0095
Test critical values: 1% level	-5.521860	
5% level	-4.107833	
10% level	-3.515047	

Null Hypothesis: LOGVALUE has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 2 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.61712	0.0001
Test	critical		
values:	1% level	-5.295384	
	5% level	-4.008157	
	10% level	-3.460791	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: ROA has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.855653	0.0012
Test	critical		
values:	1% level	-5.124875	
	5% level	-3.933364	
	10% level	-3.420030	

Estimation Results

Dependent Variable: ROA

Method: Least Squares

Date: 11/12/22 Time: 15:05

Sample (adjusted): 2012 2020

Included observations: 9 after adjustments

	Coefficie			
Variable	nt	Std. Error	t-Statistic	Prob.
С	-7.019899	9.134395	-0.768513	0.4769
DLOGACCOUNT				
Ν	-2.29E-07	3.40E-07	-0.675348	0.5294
DLOGTRANS	0.798124	1.170351	0.681952	0.5256
LOGVALUE	0.377310	0.367859	1.025690	0.3521
		Mean	dependent	2.38951
R-squared	0.225343	var		6
Adjusted R	-			1.42852
squared	-0.239452	S.D. dep	endent var	6
		Akaike	info	4.06693
S.E. of regression	1.590387	criterion		5
				4.15459
Sum squared resid	12.64666	Schwarz	criterion	0
		Hannan-	Quinn	3.87777
Log likelihood	-14.30121	criter.		5
				2.17758
F-statistic	0.484823	Durbin-	Watson stat	8
Prob(F-statistic)	0.707404			

Diagnostic tests



The errors are normally distributed

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.978002	Prob. F(2,3)	0.4710
Obs*R-squared	3.552062	Prob. Chi-Square(2)0.1693	

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.634164	Prob. F(3,5)	0.2941		
Obs*R-squared	4.455690	Prob. Chi-Square(3))0.2163		
Scaled explained					
SS	1.089370	Prob. Chi-Square(3))0.7796		