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Threats and opportunities presented by FinTech on Zimbabwean commercial banks: An open innovation perspective.

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Declaration

I, Kudakwashe Aldridge Kunaka, do hereby declare that this dissertation is a result of my own study and research, except to the extent shown in the Acknowledgements, Bibliography and comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

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Student Signature	**Date**
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Supervisor Signature	**Date**

Dedication

A special dedication and appreciation go to my parents, work mates and friends who taught and encouraged me to think, understand and express. I sincerely feel that without their inspiration, able guidance and commitment I would not be able to sail through the determined process of this research study.

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ABSTRACT

Threats and opportunities presented by fintech to Zimbabwean commercial banks, is examined in this research. It also tried to look into other complementary wings and facets including Ecocash, One Money and Telecash, on how they are affecting the banking industry in Zimbabwe.

This research used a descriptive research design, which integrates both qualitative and quantitative data collection and analytic methodologies to address the research issue. The sample size for this study was comprised of almost every age group in the banking industry and fintechs. (Including supervisors and managers) The target sample was interviewed and asked a series of questions.

The data gathered and analysed reveal about the threats and opportunities of digital banking, mobile money and regulatory technology together with their relationship with fintech sector and the Zimbabwean commercial banks.

Further research in the banking sector and financial technology industry may be utilised to enhance the effectiveness and efficiency in the way business is conducted in the banking industry with the effect of technology. Given the scarcity of literature on the subject, this study also recommends that more research be done to examine the threats and opportunities presented by Fintech on Zimbabwean commercial banks.

CHAPTER ONE

1.1 Introduction

Introduction The financial technology (FinTech) revolution of the twenty-first century has altered how the financial markets function. This disconcerting technology has completely changed the way that financial services are provided and how the general public accesses them. The phrase "FinTech" keeps coming up in financial service providers' strategy meetings as they look for methods to take advantage of chances and lessen the risk it poses to the delivery of business services to their clients. FinTech, as described by Lee and Kim (2015), is the thriving sector created by the fusion of finance and technology. Lee and Kim (2015) further characterized it as a modernisation of financial service delivery that incorporates information technology, payment settlement, transfers, and asset management. According to the Financial Stability Board (FSB) (2017), it is also known as "the technologically enabled financial modernization that may produce the inventive business models, applications, processes, or products with a material impact on the financial markets and institutions and the delivery of the financial services."

Numerous managers have reiterated the rising cyber threats linked with the usage of these technologies to both FinTech enterprises and banks, even if FinTech has gained popularity for its effectiveness and cost-effectiveness. The Reserve Bank of Zimbabwe (2017) asserts that the potential of technological and system failure increases with the rapid adoption of new and developing financial technology. The RBZ advised banks and FinTech to focus appropriately on developing frameworks for managing cyber security risk that consider prevention, detection, monitoring, technological literacy, and strategies for disaster recover. The Basel Committee on Banking Supervision (2018) claims that as a result of the adoption of FinTech and new insights that disrupt bank business models, the type and scope of banking risks as they are currently understood may fundamentally alter over time. These technologies carry risks and difficulties, but they could also open up new possibilities for customers and the financial sector as a whole. This research aims to identify the opportunities as well as the risks associated with the development of technology for the Zimbabwean commercial banking sector. Below is a basic overview of the FinTech industry.

1.2 Background of the study

Currently, FinTech has industrialized to the point where it is an essential element of economic growth and the foundation of knowledge-based economies in terms of operations, the caliber of service provision, and fiscal intermediation. (Oluwagbemi, Abah&Achimugu, 2017). Therefore, taking advantage of financial information prospects has become essential for all developing nations, and Zimbabwe is no different. However, it is crucial to fully comprehend the dangers that these technologies represent.

The majority of experimental research demonstrate that knowledge-driven discovery is crucial to the long-term competitiveness of economies, industries, and businesses. (Philipon, 2018). Banks are extremely afraid as a result of the digital rise, and there is still no clear explanation as to what will happen to the financial sector. (International Trade Administration, 2016). What will be the future relationship between banks and fintech companies, and what impact will it have on how banking services are delivered, as well as on the profitability and market share of banks? The nature of fintech in the environment, as well as the scale of the people and enterprises, teach us the answers to these concerns. Big and small start-up fintech companies dominate this industry, and as a result, these two groupings present major and distinct challenges and opportunities. The banks are responding to these threats and opportunities in order to continue serving the wide range of needs of the people. Some have purchased these Fintech companies, while others are merging and others are forging tactical partnerships. (Erman, 2017). Through these methods, banks are incorporating FinTech features into their operating processes.

Due to the Big-Tech businesses' longer lifespans, banks face a greater problem. (Alt et al., 2018). Large fintech companies developed platforms that improve the client experience by providing exclusive real-time data on the products, sales, and customer satisfaction echelons of businesses by means of their platform. (Chuen &Teo, 2015). Additionally, they can observe returns and market positioning to roughly estimate the size of the companies' revenue-generating operations. These businesses also own data that may be utilized to compile consumer perceptions, preferences, and standards of living. Such information can be used for credit assessment, which is primary function provided by conventional banking. Big Tech's second benefit is their substantial client base and commitment to customer focused business practices. Unlike banks, which are frequently limited in their views on items like loans, savings, and mortgages, they may readily attach the more effectively and well organised customer-specific data. The aptitude to handle and utilize enormous sizes of data to produce persuasive information for advertising is the third real advantage. (Admati&Hellwig, 2013).

Additionally, the financial strength of these fintech companies gives them a competitive edge because they may use their financial resources to expand their financial intermediation businesses. (Panetta, 2018). Commercial banks in developing nations appear to be immune to these disruptive innovations when examining significant changes in the financial industry because they are also utilizing FinTech. (Mutua, 2010). The majority of financial modernisation, according to Mutua (2010), is focused on unbanked rural populations and unregulated informal markets.

Technology-enabled innovation in the financial services sector is expanding cumulatively and changing the banking industry and the likelihood of a FinTech environment in Zimbabwe in the future. (RBZ, 2017). The RBZ is examining the degree of technology use while also ensuring the dependability of financial markets and payment systems, investors' safety, and protection of overall fiscal market stability in light of the variances. For instance, the banking

industry and the private sector will devise strategies for protecting against the hazards connected with the FinTech revolution while utilizing the business opportunities from FinTech growths. (RBZ, 2017).

1.2.1 Zimbabwean banking sector

The reserve bank effectively controls the well-developed banking sector in Zimbabwe. There are thirteen (13) commercial banks, five (5) building societies, two (2) merchant banks, and one (1) savings bank in the banking sector.

Table 1.1: The stracture of the Zimbabwean Banking Sector

Type of Organization	**Number**
Commercial Banks	13
Building Societies	5
Savings Bank	1
Total Banking Institutions	**19**
Credit-only-Microfinance Institutions (MFIs)	203
Deposit-taking MFIs	6
Development Financial Institutions	2
Total non-banking organizations	**211**

Source: RBZ (2018)

The country's banking industry operates under a hybrid of monopolistic and oligopolistic conditions, with differentiated but otherwise similar goods and services (RBZ, 2017. Because of the widespread adoption of technology in the world, digital banking is now a platform that, in the opinion of the Reserve Bank of Zimbabwe, will provide opportunities for future economic growth. (Mangudya, 2017). Whether Zimbabwe is underbanked or overbanked is one important question. One might be tempted to think that Zimbabwe is overbanked in a nation with a projected populace of sixteen (16) million people and nineteen (19) banks and more than 200 microfinances, but the RBZ report from 2013 evaluations illustrates that only 14% of the population had access to recognized banking services, and the 2019 estimates show that 69% of the population could access recommended banking and financial facilities. According to the estimations from 2014, just 30% of grown-ups could access the prescribed banking facilities. This reduced infiltration rate might be accredited to formal banks' flop to reach Zimbabwe's rural population, which makes up 62% of the country's population.

Financial literacy and utilizing FinTech could be used to break into these markets. (RBZ, 2019). The location of ancient banks that prioritize major towns and neglect outlying places is the second factor stated by Chipika (2019). The results of the 2014 baseline investigation on the degree of financial exclusion are validated in the table below. The researcher aims to look into the challenges and opportunities that FinTech can bring in resolving this high financial exclusion rate in light of the financial exclusion rate which is high.

Table 1.2: The financial exclusion baseline

Baseline Level of Financial Exclusion in Zimbabwe

2014 CONSUMER SURVEY
- **23%** Financially excluded
- Only **30% of Zimbabwe's adult population made use of banking services** as at 2014
- Only **20% of the adult population made use of formal savings** channels

MSMES 2012 SURVEY
- Only **14% of MSME owners banked.**
- Only **18% of MSME business owners are formally served**, including both bank and other formal non-bank products/services.
- **57% of the MSME business owners** in Zimbabwe **are women**

Financial Service	Level of Financial Exclusion (2014)
Banking	70%
Savings and Investment	53%
Insurance & Risk Management	70%
Mobile Money	55%
Borrowing & Credit	58%
Capital Markets	99%

Source: Chipika (2019)

Pastoral Zimbabweans continue to be economically and socially marginalized. According to research case from Bangladesh and Kenya Equity Bank, it is possible to tap into the rural market by offering banks' assurance that they will develop effective distribution channels. The informal sector of the Zimbabwean economy, which currently accounts for up to 25% of GDP and is typically unbanked, is the other factor. (RBZ, 2017). Zimbabwe has the fewest deposit accounts per 1,000 people in the southern area, at 139. Accordingly, just 139 out of every 1000 persons have a deposit account, leaving 861 people outside the formal banking system. World Bank (2015), RBZ (2019), and Chipika (2019) have all identified fintech as a key enabler of the 2030 Sustainable Development Goal on financial inclusion.

1.2.2 FinTech business in Zimbabwe

The Financial Technology sector in Zimbabwe is rising alarmingly. Numerous new firms have entered the market over the last five years. The way people conduct their financial transactions has altered in Zimbabwe thanks to a number of enterprises, including Cassava,

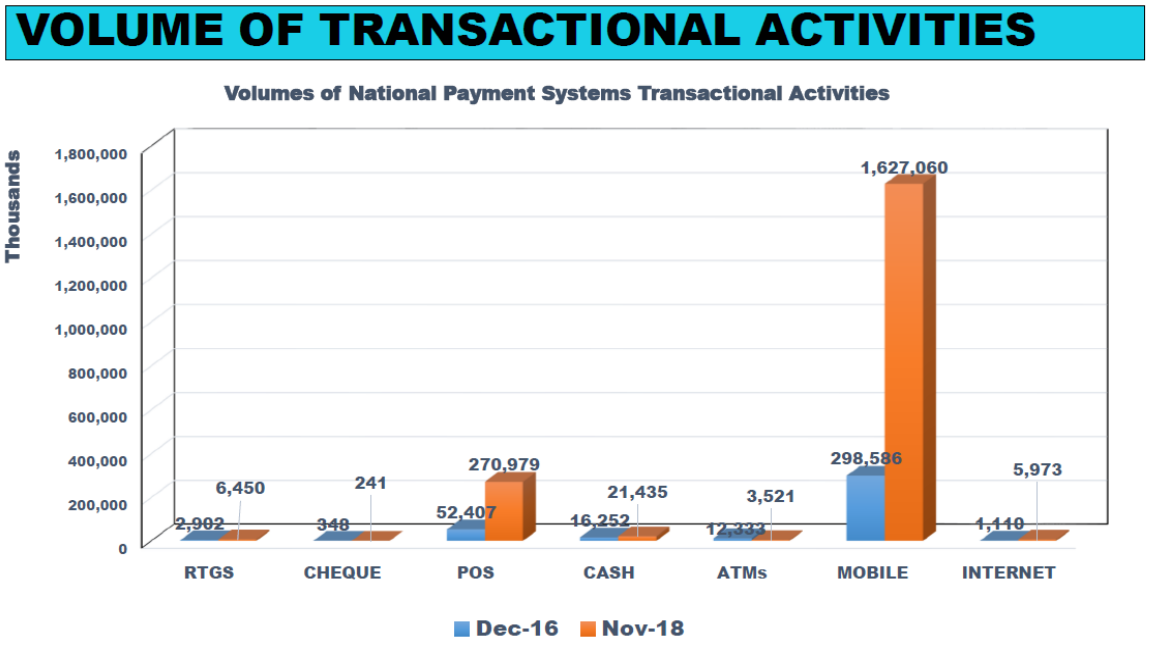
Paynet, Bitimari, Bitfinance, Telecash, One Money, GetBucks, E-Transact, Zimswitch, Instapay, Zapper, World remit, Zing, Hello Paisa, Paysave, and Paynow. The FinTech rebellion in Zimbabwe looks to be under the direction of CASSAVA. The table below lists the financial technologies that CASSAVA currently owns.

Table 1.3: Cassava Smartech

Source: Chipika (2019)

According to the RBZ research, the majority of transactions are now made via mobile devices, a 45% increase over 2016 as displayed by the following table. The table beneath displays the quantity of transactions made across numerous platforms. The basics that cover prevention, detection, monitoring, technical expertise, and retrieval plans are being built by supervisors tirelessly. (RBZ, 2017).

Table 1.3: Transactional activity volume



Source: Chipfika (2019)

In contrast to this fintech and banking background, the researcher aims to examine the threats and the benefits that fintech brings Zimbabwean commercial banks.

1.3 Statement of the Problem

FinTech is revolutionizing how individuals conduct financial transactions thanks to its rapid development. The emergence of FinTech has significantly altered financial processes, including those related to national currencies, the banking sector, the insurance industry, and a variety of other industries. (Philipon, 2018). Fintech companies are primarily distinguished by the modern trade models that correspond to them and rely on cutting-edge technological advancements. These typical traits help FinTech startups disrupt the established financial system's fiscal intermediation. Fintech companies focus on their key goals or targets while cutting costs and influencing technology like cloud networking and the construction of digital databases that enhance user experience.

The new FinTechs are not just unproven start-ups; they are also international behemoths like Google, Apple, Facebook, Amazon, and Alibaba. The local banking sector in Zimbabwe has noticed the emergence of FinTech companies as CASSAVA, Paynet, Pay now, Pay save, Telecash, Hello Paisa, and One Money, to name a few, and their influence on the banking system's disruption and complementarity has been evolving. These groups of competitors

present quite distinct opportunities and risks. FinTech also includes the application of numerous technologies and multi-layered algorithms that alert banks and FinTech companies to cyber security breaches, which have already established themselves as major commercial (financial) hazards in the modern world. For instance, the transmission of two spiteful software threads, WannaCry and NotPetya, over the interbank messaging service (SWIFT), resulted in a substantial money theft from the British National Health Service (BNHS), Moller-Maersk of Denmark, clients, and various central banks in 2017. (Nakaso, 2016).

The digital rebellion is still making it difficult for practitioners and intellectuals to predict what will happen to the financial business. The future of the relationship between the impact of banks and fintechs on the delivery of banking and financial services, as well as for the productivity and percentage of the market of commercial banks, remain major open-ended questions. Depending on the sort of FinTech being discussed, the answers to these questions vary.

1.4 Research objectives

- To ascertain the motivators for the development of FinTech
- To establish the chances or opportunities brought by FinTech commercial banks in Zimbabwe
- To discover the threats or risks presented by FinTech commercial banks in Zimbabwe
- To examine the policies being engaged by the commercial banks in Zimbabwe to handle this technology
- To determine the effects to the regulation of financial services sector by Fintech

1.5 Research questions

- What are the forces that led to the development of FinTech?
- What are the chances or opportunities brought by FinTech to the commercial banks Zimbabwe?
- What are the threats or risks presented by FinTech to the commercial banks in Zimbabwe?
- What are the policies being engaged by the commercial banks in Zimbabwe to handle this technology?
- What are the effects to the regulation of financial services sector by Fintech?

1.6 Assumptions of the Study

This study is predicated on the idea that commercial banks and fintech will make an effective model for examining the benefits and challenges presented by fintech to commercial banks in

Zimbabwe. In addition, it is anticipated that respondents will be truthful in their responses to the research tool questions

1.7 Justification of the study

The results of this study will be useful not just to the investigator but also to the regulator and other players in the financial services sector who might otherwise lack knowledge of the actual risks and possibilities posed by financial technology. Additionally, the Bindura University of Science Education's body of knowledge is anticipated to grow as a result. The findings of this study will aid banks and FinTech firms in developing strategies for countering these disruptive technologies that were made possible by fintech development. The research results will also help the creators of the regulatory policy framework to fully understand the relationship between commercial banks and fintech as well as any potential ramifications for the fiscal market stability parameter.

1.8 Scope of the study

The eleven commercial banks and FinTech firms in Zimbabwe will be the subject of the study. However, given that FinTech is a worldwide industry, some materials must be imported from nations possessing cutting-edge FinTech.

1.9 Limitations of the Study

Time and financial resources are the main restrictions that are likely to have an effect on this research. Because of this, the researcher plans to use effective data collection methods including information and communications technology. The second drawback of this study is the bias that could be introduced by using the "within-subjects" comparison method. This study would be replicated and improved in a broader survey where participants only receive one scenario along with more thorough questionnaires with more questions for each dimension.

1.10 Chapter Summary

The research topic and the researcher's reason for conducting the study were established in this chapter. In order for the audience to grasp the issue that motivated this research, the study's context was explained. The organization of the study, including the instruments used to conduct it, is another goal of this chapter. The goals of the research were identified, along with their methods of implementation.

CHAPTER TWO

Literature Review

2.1 Introduction

Existing literature, as said by Bryman and Bell (2011), serves as the foundation for the legitimacy and significance of the research and its goals. The conceptual framework examines FinTech from a broad angle, starting with concepts that encourage open innovation and cascading down to open innovation in the provision of financial services. Disruptive technical development, innovative business models, investments, tactical alliances, and new regulations and policies are all covered under open innovation in the fintech sector. The meaning of fintech provided a complete image of the study parameters, including the motivators of fintech, the possibilities, the dangers, and the threats' remedies, at the beginning of the chapter. Additionally, this chapter also included a brief history of financial technology.

2.2 An Overview of the Development of Fintech

The Automated Teller Machine (ATM), which was introduced in Britain in 1967, marked the advent of current technology in the banking sector. The financial services sector underwent a transformation from an analogue to a digital economy between 1967 and 1987 (Arner, Barberis, & Buckley, 2015). Mobile banking is one example of how banking services have evolved as a result of the switch from manual banking to automated teller machines. At the end 1980s, the financially services sector had mostly reformed into a digital market that relied only on electronic transactions between consumers and other businesses. Through innovative financial providing companies, the banking industry's innovation and development have improved commercial transactions and eliminated banking services (African Development Bank, 2013). In 2001, the USA witnessed the development of fintech as eight of its banks had more than one million custmers (Aglionby, 2016). Additionally, the first banks without customer service departments started operating in the UK in 2005, which made the usage of financial technology necessary and widespread around the world (Alt & Puschmann, 2012). Many banking activities were digitalized in the early 2000s, which was reflected in spending on information technology by using the financial services sector in particular (Dayadhar, 2015). Additionally, market regulators, in particular protection exchanges, are routinely storing an increasing amount of data using information technology. Arner, Barbaris, and Buckley (2015) claim that the World’s Financial Crisis marked a turning point in the history of the advancement of fintech since it rendered obsolete the use of actual banks, where clients used to go to the banks. The catastrophe has accelerated the growth of a new financial technology era (from 2009 to the present). Information technology was the most practical choice for resolving those issues because the market conditions changed, creating chances for new, innovative enterprises to enter the market (Dietz et al., 2016). It is fascinating to assess the IPO success of companies earlier and after the Global Financial Crisis because the Financial Technology sector has been evolving throughout and since the crisis (Foy, et al., 2015). The research's conclusions can help investors, businesses, market

participants, and even regulators because they will have a positive impact on some of their respective fields of expertise. For example, innovative start-ups are always a tempting target for competitors and/or investors, while on the other side, they are similarly interesting to the founders of the companies to deliver to the stock market. Additionally, a growing number of Fintech firms could conduct an IPO in a little while from now. If the founders, investors, and Lending Club itself had known which elements were influencing the extent to which the fintech enterprises are under-pricing, they should have received additional cash, just as in the case of the IPO of Lending Club, when there was a significant under-pricing. The determinants of the Fintech companies under-pricing may vary from the factors influencing the under-pricing of businesses in other industries, which are typically evaluated generally rather than on a specific sector.

2.3 Theoretical framework

The Open Innovation paradigm is based on a number of theories, according to Kutvonen (2016). Open innovation is based on the following theories: Relational View, Resource Dependence Theory, Game Theory, Organizational Learning, Knowledge-Based View of the Firm (Grant, 1996; Spender, 1996), Dynamic Capabilities (Teece et al., 1997; Teece, 2007), Organizational Learning (March 1991; Levinthal and March, 1993; Nonaka, 1994), and Organizational Learning. The utilization of organizational learning and dynamic capacities theories were prioritized in this research. These ideas were chosen because they describe how Financial Technology is created, how businesses build dynamic capabilities, and how they inspire organizational change in a constantly changing context. As a result, these beliefs stand out in our study when compared to other theories that support open innovation.

2.3.1 Dynamic Capabilities

According to Teeceet al. (2007), the Dynamic Capabilities hypothesis describes how wealth is created in contexts where private businesses operate in constant change. According to the theory, an organization's competitive age is shaped by its unique processes, assets that cover its knowledge assets and matching assets, and accepted evolution routes (Teeceet al., 1997). The Resource-Based View (RBV) is the source of this theory. Additionally, it closes the knowledge gap regarding how to foster competition that is sustainable in an RBV (Cavusgile et al., 2007). According to Teece (2007), developing dynamic talents may result in longer-term improved organizational performance. Dynamic Capabilities methodology used in this research aims to find out how wealth might be created and what impact it might have on Zimbabwean commercial banks. Consumers demand network and service harmonisation. Several information sources and participants in many products. New perspectives may be needed to address emerging problems. Existing financial service providers have a tendency of addressing new problems with their existing beliefs and knowledge, which prevents business leaders from taking full advantage of new opportunities. Additionally, having a strong balance sheet may make it difficult for incumbents to develop dynamic skills, but company executives who are able to do so regardless of legacy difficulties can have a significant impact (Teece, 2007). Capability transformation, learning, and transmission are now critically important (Cavusgile et al., 2007)

2.3.2 Organizational Learning

Businesses that operate in an atmosphere with frequent variations and work to develop dynamic capabilities need to be well equipped to generate useful data and process it to assist decision-making (Erman, 2017). The talents and competencies that an organization possesses are what fuel its transformation into an innovative organization. Individual attitudes and competencies must be noted as being crucial to the development of organizational knowledge building (Nonaka, 1994). Organizations experiment to alter their success based on their learning curves, successes, or failures. The technological status of an organization is now a factor in its success. Businesses use three different learning strategies when it comes to technology. These are, in turn, "adoption of search strategies, improving search competencies, and adopting their aspirations to learn what to hope for" (Levinthal and March 1981). Understanding how businesses generate information and how to transform and apply Open Innovation strategies in the FinTech industry are improved by organizational learning theory.

2.3.3 Open innovation in services

The life cycle of many products has been shortened by the technological advancement in mobile technologies (Erman, 2017). Through the use of open innovation concepts, several organizations now find it easy to enter the highly regulated industries because to new information technologies. Companies are now creating customized items in less time due to intense rivalry (Hidalgo & D'Alvano, 2014). Even well-known organizations are being compelled to offer customer-focused goods and services by the rapidly shifting consumer demands. According to Chesbrough (2010), product-oriented businesses fall into a commodity trap as a result of distributed information and manufacturing, lower shipping costs for manufactured items around the world, and shorter product shelf lives. Because financial technology lacks intellectual property protections, it is simpler for competitors to use reverse engineering to create similar products. The current situation compels businesses to abandon their product-centred approach (Chesbrough, 2010).

Open service innovation is a practical strategy for escaping this commodity trap. There are four steps in the open service innovation. In order to differentiate their offerings, organizations must first analyse the items or services they offer. This perception necessitates a paradigm shift in the company's culture and way of thinking. The innovation process, according to Silva (2014), can be divided into two major groups: innovation in back-end operations and innovation in front-offices. Since the adoption of specific strategies is required, the majority of corporations have divided their front-end and back-end operations. Back-end systems are more focused on efficiency and cost than front-end businesses, which deal directly with clients and need tailored solutions. Second, the creation process ought to involve the users. Thirdly, companies need to use open innovation strategies to boost invention, which helps cut down on the time and money needed for change. Finally, using infrastructure and platforms that are already in place can enable you to benefit from innovations made by other businesses (Chesbrough, 2010).

2.4 The Forces behind fintech

Globalization is transforming the entire planet into a little community where all business partners should be able to conduct banking and financial activities with ease. Globalization, convenience, client tastes and preferences, long distances, and financial inclusion are just a few of the elements that have fuelled the introduction and growth of financial technology (Dietz et al., 2016).

2.4.1 Digitalization of Financial Services

According to Russell et al. (2017), digitalization has significantly altered how many financial institutions, particularly those in the banking sector, interact with their customers and conduct business. Computers and phones have replaced the physical banks and their personnel as a result of digitalization because all of those tasks can be done at home (Foy, et al., 2015). In the past, consumers consolidated their financial needs at a particular city or neighbourhood close to where they worked, receiving assistance from the bank employees when making deposits, withdrawing money, and loan applications. According to Goyal & Vishal -Kuman, Ishank (2017), financial technology is unavoidable because clients can now quickly and easily obtain banking services online. This has led to increased customer comfort and convenience. According to PWC, 49% of consumers worldwide, in both developed and developing nations, now conduct their banking business on their cell phones and laptops when at home, at work, or even while traveling. The survey also stated that by 2027, it is anticipated that 20% of American banks' activity will have decreased, with several of them anticipating a decline of 8%.

Nowadays, consumers may evaluate the costs and quality of goods and services from dozens, if not hundreds, of companies online rather than being limited to the small number of companies with local branches (Adongo, 2015). While this makes it possible for more common businesses to compete with one another, it also makes it possible for completely new businesses with distinctive business models to enter the market, including peer-to-peer lending platforms and insurance companies that only operate online as well as crowdfunding and digital-only banks (KPMG, 2016). While these Financial Technology companies usually lack the magnitude of more established companies, they want to employ their agile structure and technology expertise to actively challenge the current status quo. According to an EY estimate, fintech is already used by 33% of people who use the internet regularly, many customers are adopting these FinTech products into their financial lives.

2.4.2 Rising Number of Payment Options

Even coffee shops these days choose to provide in-store services to customers using computers and mobile ordering options, while also accepting actual payment in hard cash, debit, credit, and present cards, along with mobile wallets on phones and wearables for digital payments, there are also money transfers through apps and, sometimes, a number of cryptic events (African Development Bank, 2013). Consider the Starbucks payment options, which

are listed on their website in the following order: cash, credit cards, gift cards, the Starbucks Mobile App, Apple Pay, PayPal, Chase Pay, and Visa Checkout. Financial technology plays a crucial role in enabling all of these payment methods to take place instantly while also providing confidentiality, dependability, and integration between the various accounting, inventory, and order fulfilment systems used by the company (Bach, 2011). Many businesses must partner with third-party financial technology companies that give point-of-sale hardware, cloud-based software, and repayments infrastructure in order to show the complex internet of payment preferences. The end result is that debt collection agencies are now firmly established as a crucial facet of running retail businesses all over the globe.

2.4.3 Capturing the Middle Class in the Emerging Markets

Since their initial software development and infrastructure buildout costs account for the majority of their costs, FinTech companies using digital-only methods benefit from platforms that are remarkably scalable (Ackley & Malady, 2015). Extra servers and storage for web hosting are inexpensive, but in the age of digitalization, these costs reduce travel costs and increase consumer convenience (Echchabi, 2014). In contrast, a standard tax preparation company would need to hire more back-office workers and establish a new, fully staffed branch of tax experts in order to accommodate enough new clients (Bach, 2011). What is this situation related to the middle class in developing markets? In the past, a lot of financial services businesses, such as banks, investment firms, and even tax preparers, did not want to employ the money required to expand their products to this demographic (European Investment Bank, 2013). Fintech firms are in a perfect position to assist them because the anticipated income may not be sufficient to pay the additional costs. Due of their highly scalable systems, it would still be beneficial to include a middle-class banking client who has a few thousand dollars in savings or requests a loan for a comparable amount. Incorporating this group may desire to significantly speed Financial Technology's growth, considering size and expansion of the growing markets middle class. In contrast to industrialised economies' growth rate of just 0.5%, the large variety of middle-class clients is expanding in China and India at a rate of 6% annually. Approximately 156 million people worldwide fall into the intermediate category each year. Providing financial services to the unbanked may potentially generate $380 billion in annual income, according to Accenture. FinTech businesses, in our perspective, are in the ideal position to take advantage of this chance (Ionescu, 2012).

2.4.4 Expansion beyond Traditional Financial Services

To supplement their main offerings, several FinTech companies are looking into additional technologies and services. Blockchain and crypto-assets are one area that is getting a lot of interest; at now, agencies that make up one-fourth of the Global X FinTech ETF (FINX) are dynamically involved in some form regarding blockchain (Kama & Adigun, 2013). Numerous of these businesses picture blockchain as disruptive technologies with significant growth potential and are advancing this field by utilizing their skills in the programming, payments, or market structure (Bach, 2011). Some Financial Technology businesses are also expanding into industries that are more peripheral to their primary company, such as payment processors that offer software for marketing, operations, and human resources. These

businesses think that because of their big clientele, proficiency in software creation and understanding of the needs of small businesses, they are in a good position to provide a wider choice of goods to assist in the management (Kamau, 2011).

2.5 Opportunities and threats

The effectiveness of financial technology is also improved by new technologies like "BlockChain" (Peters & Panayi, 2016; Wood, 2015). The restrictions governing the banking industry have led to the emergence of numerous microfinance institutions that provide comparable services while utilizing fintech. As Peters and Panayi (2016) claims, by lowering counterparty and agreement risks, cutting the contract cycle from three days to two days will be advantageous for many markets. Block Chain technology may also lead to nearly speedy settlement. A competing viewpoint on FinTech claims that advancements in the field have not translated into lower intermediation costs (Philippon, 2015). According to Buchak et al. (2017), despite the fact that FinTech lenders have higher activity costs than non-FinTech lenders, they have an advantage due to the ease and speed of the application process. For the purpose of providing a thorough analysis of the predicted effects that capture the possible challenges and opportunities that Financial Technology presents for the financial marketplaces and banking industry, we looked at reports and research done by the significant organizations interested in the financial marketplaces and establishments in addition to available studies. While some of these articles (BCBS, 2017) concentrated on the broad potential and difficulties posed by fintech, others (IOSCO, 2017) concentrated on specific FinTech company segments.Although the current research primarily focuses on the banking sector, they acknowledge that FinTech will only have a little impact on banks and financial markets. It depends on a range of aspects as the local environment, management, and global environment change, considering that industry does not have an equal distribution of the advantages of opportunities and the degree of exposure to dangers. The key difference between banks is how well they can use fintech to create strategic value.

2.6 Opportunities for Financial Technology.

Numerous academic studies and reports have described various ways that financial technology might benefit the banking industry and how banking services can be enhanced (Financial Stability Board, 2017). The benefits of financial technology to the banking industry are as follows.

2.6.1 Greater access to capital

Financial technology has made it easier for many enterprises in the service sector to get money than it was in the past when banks were the only sources (Karpowicz, 2014). A number of banks, particularly in industrialized nations, have been able to easily draw investment from around the globe and provide services on a global scale as a result of the

advent of technology (Kenyoru, 2017). Banks like Barclays and Standard Chartered, according to the European Investment Bank (2013), were able to acquire adequate capital when they began working with banks in other nations, quickening their expansion because of fintech. In studies on how technology affects bank expansion, it was projected that banks who successfully adopted financial technology have benefited, with ABSA bank acting as an excellent example due to its affiliation with Barclays bank. Additionally, financial technology has led to the mobile networks providing services that were previously only available through banks, increasing the capital structure of the banks through partnership between these service providers and the banks (Ackley & Malady, 2015).

2.6.2 Financial inclusion

In areas where financial technology can reach outlying areas, digital banking has increased access to financial services by underserved communities (Adongo, 2015). FinTech platforms are shifting to corporate and executable orders and focusing more and more on large deals. The opportunity also includes the presence of new asset categories. For instance, many experts in Distributed Ledger Technologies (DLT) are aware that one advantage of DLT is the ability to "tokenize" for securitization resources that are hard to source, manage, and supply, such as supplies, energy products, works of art, real estate, and private equities, making them available for sale and as collateral (Dietz et al., 2016).

2.6.3 Improved and more customized banking services

Banks can gain from the expertise of financial technology start-ups to improve their contentious offers and supply them in a flexible and economic way (Russell et al., 2017). To help customers understand the world of finance and improve and customize the customer experience, banks may, for instance, white-label Robo-advisors (KPMG, 2016). According to Ncube (2015), Steward Bank and additional banks have effectively cooperated with Eco-Cash and are obtaining the rewards because Eco-Cash transactions occasionally result in financial gains for them. Additionally, the organizations can collaborate with these financial service providers to take advantage of technology. He emphasized further that there is no longer a need for people to wait in line to withdraw money from banks, which is advantageous for both customers and banks.

2.6.4 Cost Benefit

This is because fintech businesses provide cheaper transaction fees, quicker banking services, and occasionally even execute transfers and payments at reduced rates, like with cross-border transfers (KPMG, 2015). Financial technology businesses can also offer quicker financial services at a fair and practical price. As a result of lowering counterparty and risks of settlement and accelerating the settlement process from three days to two, blockchain technology have the possibility to lead to very rapid settlement (Kenyoru, 2017). Potentially excellent impact on financial stability brought on by heightened competition: The entry of new competitors into the banking services market to compete with established banks ought to

gradually fragment the market and lower the systemic danger associated with firms of systemic scale (Kamau, 2011).

2.6.5 Regulation Technology

Businesses can use contemporary, cutting-edge technology to comply with rules and fulfill regulatory objectives (such prudential duties like reporting and consumer protection). By giving banks more fantastic ways to enhance their acquiescence and risk management, regtech can help banks (Kamau, 2011). It might also be the capacity to operate in a regulated environment and lower the costs of adhering to regulations or responding to them (Aglionby, 2016).

2.6.6 Improvement in Security

Regarding one of the major trends in financial technology, security is integrated into the blockchain through block-level encryption and the connections amid the blocks. Moreover, with current technological capabilities, considering that a blockchain's nodes differ more from one another than they do from a central database (Karpowicz, 2014). Additionally, Financial Technology platforms include a number of methods to safeguard anonymity and stop data leakage (Karpowicz, 2014). It's crucial to understand that the clear advantages of financial technology shouldn't come at the cost of customer safety, security, and soundness. To ensure that new growing shipping channels and offers being provided by financial organizations utilizing fintech are protected, the level of risk management, control requirements and protections that banks and bank managers maintain must be the same (Russell, et al., 2017). Although the excellent statutory authorities of jurisdictions allow for sufficient flexibility in banking standards and expectations, it is nevertheless vital to sustain the strict requirements for the banking industry's safety and soundness as well as its consumer goals (BCBS, 2017).

2.7 Threats

Like any trend, Fintech encompasses not just benefits and possibilities but also a variety of hazards that cross a number of industries and regularly combine strategic risk factors (Goyal & Vishal -Kuman, Ishank, 2017). Concerns regarding operational risk, acquiescence, the liquidity and volatility of funding sources used by financial institutions, and the intense rivalry are the key sources of hazards and threats associated with FinTech (Lim & Ting, 2012). The following risks are connected to financial technology, mostly in the banking industry.

2.7.1 Market share rivalry

Risks to profitability at male or female banks are increased by the potential of swift unbundling of bank offerings to non-bank fintech or BigTech enterprises (African Development Bank, 2013). If new competitors can employ innovation more effectively and offer solutions that are substantially less expensive and better satisfy customer expectations,

existing financial institutions run the risk of losing a sizable portion of their market share or profit margin (Echchabi, 2014).

2.7.2 Risk of platform failure, fraud, or abuse by some of its users

There have been a few instances of platform fraud. The actions of those showing (and procuring) securities on the platform could be fraudulent (European Investment Bank, 2013).

2.7.3 Extreme operational threat – systematic dimension

The development of fintech increases the IT reliance between market participants and market set-ups, particularly where offerings are concentrated in a small number of dominant players. This should lead to a systemic crisis if an IT risk match occurs (Echchabi, 2014). The advent of fintech companies into the banking sector increases system difficultness and presents new participants that may not have the necessary skills and knowledge to manage IT hazards (Ionescu, 2012).

2.7.4 Extreme operational chance idiosyncratic dimension

The distribution of financial contributions can become more complex due to the development of contemporary products and services, which makes it more difficult to control and run operational risk (Mbutor & Uba, 2013). Additionally, legacy bank IT procedures might not be adequately adaptive, or application techniques like trade management might not be suitable (Echchabi, 2014). This type of vulnerability is mostly attributable to the dependence on Robo-advisers, which aim technological matters such faults in algorithms, excessively complex algorithms, excessively simplistic algorithms, and static consumer information (Dayadhar, 2015).

2.7.5 Increased challenges in complying with regulations, especially those related to AML/CFT (counter-terrorist financing) duties

The rising level of mechanization and dispersion of the good or service among banks and financial technology firms may lead to less transparency regarding the means transactions are carried out and who is in charge of acquiescence (Alt & Puschmann, 2012). Platforms may claim that they will carry out regulated activities anymore since they only offer matching, statistics, and execution-only facilities (Dayadhar, 2015), which raises the possibility of carrying out unauthorized operations and standard solicitation. Aglionby (2016) notes that many FinTech systems may not be standardized and contain much fewer components than securities traded on open markets.

2.7.6 Risks associated with liquidity and the volatility of bank financing sources

Thanks to the use of contemporary technology and aggregators, consumers now have the choice to frequently move between extraordinary mutual funds to receive a greater return (KPMG, 2015). Whereas this can boost productivity, it might also reduce client faithfulness and raise deposit volatility. This could lead to increased liquidity risk for banks in the future (African Development Bank, 2013).

Fig 2.1: Risks and Opportunities

	Risks	Opportunities
Impact on consumer sector	A. Data privacy B. Data security C. Discontinuity of banking services D. Inappropriate marketing practices	A. Financial inclusion B. Better and more tailored banking services C. Lower transaction costs and faster banking services
Impact on banks and banking system	A. Strategic and profitability risks B. Increased interconnectedness between financial parties C. High operational risk – systemic D. High operational risk – idiosyncratic E. Third-party/vendor management risk F. Compliance risk including failure to protect consumers and data protection regulation G. Money laundering – terrorism financing risk H. Liquidity risk and volatility of bank funding sources	A. Improved and more efficient banking processes B. Innovative use of data for marketing and risk management purposes c. Potential positive impact on financial stability due to increased competition[15] D. Regtech

Source: BCBS.

2.8 Solutions to Threats

Despite the expanding Financial Technology wave and competition in the international financial and banking sector, old-style institutions have not yet wearied the prospects for developments alongside these lines (Mackenzey, 2015). As was already said, the FinTech project presents a variety of challenges for the established banks and well-known financial service providers. FinTech, according to many bank executives studying it, offers a chance to "pump" new life into the conventional banking system as an addition to the services provided to retail consumers. This can be acquired via partnerships, provider subcontracting, project capital investments, and acquisitions, among other methods. The benefits of FinTechs outweigh the drawbacks for these institutions (Lines, 2016). Additionally, partnerships between banks and certain FinTech start-ups help these businesses grow as well as give them access to global payment networks and the client bases of the banks. This makes it easier for FinTech businesses to enter the market and gives them a chance to win over clients' trust (Juengerkes, 2016). According to Mackenzey (2015), banks must fundamentally "open up" in terms of how they make use of relationships and and how they let other companies use their competences. The banks who are best placed to adapt their business replicas and identify new payment sources for their consumer while maintaining a sound financial position will approach this task carelessly.

Several institutions recommended banks to act right away in order to fully capitalize on the potential and reduce the threats that FinTech businesses offer for the banking enterprise or the hazards connected with using Fintech solutions in banking activity (Kama & Adigun, 2013). They concentrated on the necessary steps that the management of the banks must take, including acquiring high-quality governance structures and threat management procedures and supporting the growth of FinTech, all while minimizing the risk of unintentionally impeding advised innovation in the financial sector. BCBS (2017) identified 10 significant findings, and ten recommendations for dealing with fintech were made based on these findings. Companies should evaluate the new and growing risks posed by novel products and business models in light of their current regulatory, oversight, and licensing frameworks in addition to assessing the possibility of new technology to enhance their strategies and techniques.

Utilize data-driven analytics and insights throughout the whole bank. Competitor FinTech firms are opening new fronts in the battle for market share in areas including client acquisition, client servicing, credit provision, relationship-deepening via cross-selling, and client retention and loyalty. These firms use data analytics, large customer ecosystems (like Facebook, Google, and Apple), or some of the more sophisticated modern financial institutions. One of the biggest moats in the banking industry that is still in place is the availability of deposits. Banks are being pressured to go through significant, radical restructuring in order to keep up with the ubiquitous availability of new and enormous records (and the fact that banks no longer have a monopoly on such information, which they have developed and leveraged over centuries). The success of a bank in the future depends on creating a thorough data ecosystem that offers access to customer data both inside and outside the bank, a 360-degree view of client behavior, a solid analytics and information infrastructure, and the use of these to drive scientific (rather than case law-based) decisions on a variety of tasks, from customer acquisition to servicing, cross-selling, and collections. Instead of a general distribution, provide a well-planned, segmented, and integrated consumer knowledge. Banking's era of subjugated by physical distribution is fast coming to an end. Customers now more than ever anticipate greater real-time, cross-channel capabilities (such as reputation inquiries and problem-solving), according to the rise of mobile devices and shifting tastes among demographic organizations. Physical distribution will always be crucial, but much less so, and banks will need to work on providing products with appealing designs and seamless unusual customer experiences, as well as develop digital marketing skills on par with industry heavyweights like E-commerce. Banks are currently in a customer-acquisition battle with non-banks as well as other banks (Adongo, 2015). To address the skills gap that presently exists between e-commerce participants and banks in advertising and marketing, banks must become leaders in digital media, content marketing, client lifecycle management, and marketing. Finding, hiring, and defending digital advertising geniuses will need a significant investment of time and money (Goyal & Vishal -Kuman, Ishank, 2017). actively lowering, digitizing, and streamlining operations to mitigate the possible financial advantage of attackers. Banks successfully electrified fundamental processes following the demise of the dot-com boom (Karpowicz, 2014). They must now be digitalized. For banks, this will take several years because it will include integrating a few legacy systems and maybe re-platforming to allow for easily digitized procedures (Alt & Puschmann, 2012). There are

opportunities for simplification, digitisation, and streamlining across a wide range of banking operations (Mbutor & Uba, 2013).

Utilize and deploy the upcoming technologies as quickly as possible, from cloud to agile to mobile. The science agenda has grown even more complicated and demanding for banks and bank CIOs. The tagline "mobile-first" is no longer just a gimmick; rather, it is the straightest request banks might make of their clients regarding the means they need to communicate with their service providers (African Development Bank, 2013). Banks must improve both their internal processes and cultures and their technology capabilities in order to protect customer data against breaches (Bach, 2011). Third, banks must increase their velocity to keep up with the speed of innovation in the banking industry, which includes software development using techniques like agile and non-stop delivery (African Development Bank, 2013). Finally, versions of processing and storage technology that are significantly quicker, more agile, and significantly less expensive are now standard. Banks aim to transition to such platforms in order to quickly replace and update legacy systems (European Investment Bank, 2013). In order to deliver the next wave of scientific agility and seamless client experiences, many banks may opt to employ a "two-speed architecture" paradigm, which builds more flexible scientific layers on top of current systems while still drawing on and interacting with those structures. Both their issues and impending replacement are present with such structures. Banks must travel a challenging but necessary path in order to develop their next-generation technology capabilities, including offering virtually scalable utility structures with a focus on mobile, addressing the ongoing cybersecurity threats they face, mastering agile shipping, and modernizing their infrastructure (Echchabi, 2014). In light of the digital environment, reconsider previous organizational designs and selection privileges. The usual enterprise map of a bank will show a matrix of products and channels, with physical distribution frequently leading in terms of volume and scope (Aglionby, 2016). The owners of the channels and goods that FinTech attackers are most likely to target are given authority by the P&Ls that go along with these matrices (African Development Bank, 2013). Typically, these attackers concentrate on customer metrics that are also connected to their financial performance. Contrarily, the majority of banks have cultures that emphasize consensus and take time to align (African Development Bank, 2013). Banks must include tactics into their current P&Ls that allow for quicker adaptation to external changes and support cultural norms that promote hasty decision-making. Banks should carefully examine the best configuration to support the aforementioned imperatives (Dietz et al., 2016).

2.9 Empirical evidence

2.9.1 Financial technology in India

Unlike the financial services industry which no longer supports the general market and small enterprises, India, like China, has a world-class IT sector. A strong technology zone that is

focused mostly on cutting-edge software and technological know-how has grown over the past few decades (Alt & Puschmann, 2012). As a result, a tech ecosystem has been developed that includes the knowledge and resources necessary to back the increasing FinTech sector. This ecosystem now includes payment innovation, digital miniature business and retail loans, non-public financial management, and insurance. Laws that prohibited unlicensed firms from performing banking functions while maintaining tight requirements for acquiring a banking license held India's tech sector back. However, new regulations that went into effect in 2014 will let IT firms compete. The majority of fintech companies have already purchased and applied for licenses (Bach, 2011). Infrastructure has seen significant advancements, most notably the development of digital identities that can be linked to bank accounts, which has opened the door to limiting on-boarding client costs and continuous acquiescence (Ionescu, 2012). These advancements in law and technology open the door for traditional and non-traditional businesses to increase the availability of financial solutions.

2.9.2 Financial technology in Kenya

Kenya is noted as an early user of mobile money in Quadrant IV under Quadrant I due to Safaricom, the country's major mobile network provider, which introduced the M-PESA mobile money system in 2007 (Dietz et al., 2016). Mobile transactions, which hit a record $33 billion in 2016 and accounted up 67% of all transactions traced by the National Payments System, are changing Kenya's repayment system. M-Shwari, a service by Safaricom and Commercial Bank of Africa (CBA) that uses the M-Pesa network to instantaneously provide credit score and loan products into a phone handset, was launched in November 2012. By 2014, M-Shwari had rapidly grown; it had been able to receive $1.5 billion in deposits and disperse $277.2 million in loans. With respect to the total number of bank bills, CBA's share climbed from 7% in 2012 (1.1 million accounts) to 37% (12.9 million accounts), and its market share of deposits increased from 4.7 percent in 2012 to 6 percent in 2015. Between 2012 and 2015, Kenya saw the opening of 19 million new bank accounts; about 12 million of those were due to CBA, and the remaining 5 million to Equity Financial Institution. While M-Pesa provided CBA with a growth channel, the banking sector appeared to be regaining value addition in the financial services market.

2.9.3 Financial technology in Bangladesh

Global Fintech investment increased to 37.9 billion dollars in 2019 over 962 deals, according to KPMG. With only 3.6 billion dollars invested over 102 agreements, Asia Pacific saw much less investment than other continents ('The Pulse of Fintech H1 2019', 2020). Peer-to-peer lending, Robo-Advisory, online identification, internet banking, mobile payments, and crowdfunding are a few of the Fintech technologies in the financial sector that have received the most investment, according to Patrick Schueffel (2016). Due to its rising economic potential and GDP growth rate, Bangladesh has recently been a top candidate for investment. Bangladesh is gradually transitioning from its typical traditional industrial sector to non-traditional industry as a result of fintech, according to Ahmed (2019). The finance sector is one of many Bangladeshi industries that lacks modern technologies.

2.9.4 Financial Technology in Zimbabwe

Fintech in Zimbabwe's banking sector has emerged as a key area on which initiatives for the near future should be based (KPMG, 2015). Since non-funded revenue lines, which are fueled by innovative goods, have a considerable impact on bank profits, it has grown to be a highly potent revolutionary force. The paucity of currency in banks and the inability of banks in Zimbabwe to perform financial services were both issues that were resolved by the development of financial technology (African Development Bank, 2013). In order to mitigate the negative impacts of cash shortages, banks have also created innovative technologies as swiping and Eco Cash Link (Russell et al., 2017). As Mushayavanhu (2018) claims, the chief executive of FBC Bank, every firm in the banking sector must implement financial technology to thrive in the present atmosphere of globalization, where it is the only practical alternative.

A number of banks said at the closure of their fiscal years that they needed to concentrate on fintech because it boosts competitiveness, enhances service quality, and is essential for survival in a cashless society. In order to increase efficiency and satisfy changing customer demands, financial technology must be used, according to ZB Financial Holdings Chief Executive Mutandagayi (2018). Financial declarations from Agribank show that non-interest income boosted from US$12 million in 2017 to US$16 million in 2018, a 35% rise. Malaba, (2018) recognized that the growth was because of fintech delivery methods and electronic banking (E-channels), and he vowed to creating a plan to increase non-funded e-channels-related income.

In order to provide consumers more control over their accounts, Stanbic Bank's chief executive officer, Joshua Tapambgwa, stated in 2018 that the bank's online and mobile banking technology are always being upgraded. We are continuing to push for a customer-centric way of thinking in our innovations, which has led to the development of solutions that are simple to use and useful (Tapambgwa, 2018). In 2018, Nkala, the chairperson of FBC Holdings, made a statement on the organization's belief that digital revolution, investing in ICT competences, and firming our acquiescence and risk control frameworks will continue to be our company's primary enablers going forward.

Further, Metbank committed to improving service delivery via "the upgrade of e-banking and financial inclusion commodities," while NMB increased its investments in digital ways to improve service conveyance and support the boosted transactional volumes brought on by the expanded consumer base. The cost of digital growth is high, and banking institutions need to invest in training both their personnel and consumers to make it more effective. This will allow them to fully utilize the revolution and keep up with changing consumer demands and market disruptions (African Development Bank, 2013).

2.10 Chapter Summary

The opening parts of the chapter provided a background on financial technology before reviewing the literature that was relevant to the topic. Additionally, the advantages and the theoretical frameworks used in this study were discussed. The rules were based on the objectives. The methodology of the research being studied will be the focus of the ensuing chapter.

CHAPTER THREE

Research Methodology

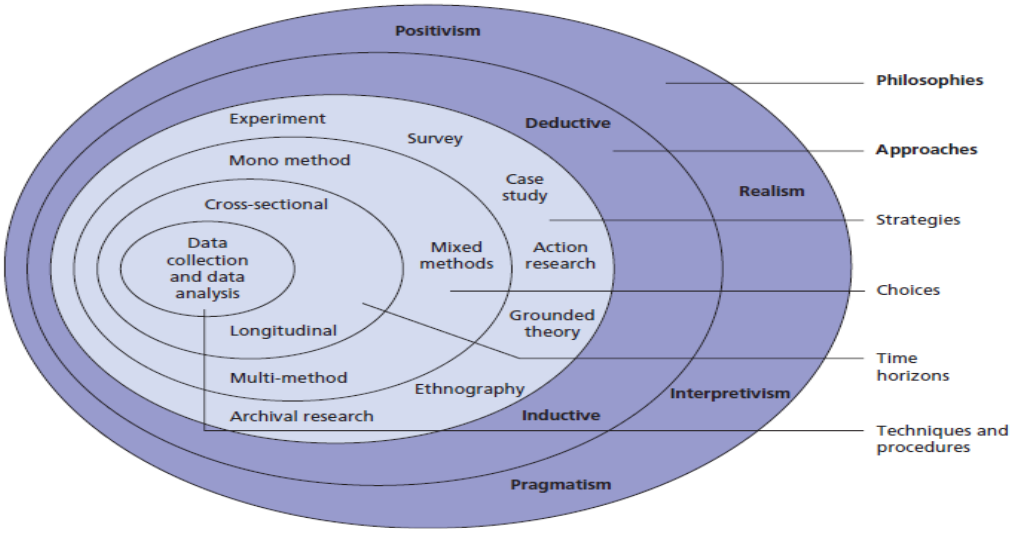
3.1 Research Introduction

According to Saunders et al. (2012), research is the systematic, methodical procedure used to uncover concealed information in order to advance knowledge. The phrase "systematic" is based on logical connections as opposed to general opinions, claims Sounders. Various techniques and approaches are used or applied during the research process. Research methodology, according to Bryman and Bell (2015), is the analysis and justification of the particular approach or methodologies used in the current research. According to Mackenzie and Knipe (2006), methodology is the entire approach to a study that is connected to the paradigm, whereas method refers to systematic modes and processes utilized for data collection and analysis. The methods used in the research design, data gathering, and analysis techniques, as well as potential research challenges are all covered in this chapter.

3.2 Proposed Methodology

Saunders et al. (2012) created a figure that, like an onion, shows the research's several levels. The research onion was used to build and map this study's research technique. Choosing a suitable research approach, relevant tactics and philosophies, as well as the techniques employed for data collection and analysis, was required.

3.4 Research Onion



Source: Saunders et al (2012)

3.3 Philosophy of Research

The philosophy of research is focused on the growth of knowledge in a certain area and includes significant presuppositions about how researchers see the world (Mugenda, 2008). These presumptions support the study plan and the methodologies that were selected to support it. The academic studies are typically motivated by an epistemic crucial, or the urge to produce knowledge, since philosophy is concerned with worldviews (Yegon, 2015). Epistemology is derived from the Greek term episteme, which denotes knowledge or the process through which we learn something. According to Blumberg et al. (2011), research is conducted within larger scientific paradigms. Furthermore, they contended that the scientific method can be either subjective or objective, and that various fundamental presuppositions about ontology, epistemology, human nature, and methodology define the two main philosophical slants in science (Holden & Lynch, 2004). According to Bhattacherjee (2012), an epistemology is the perspective that using either an objective or subjective approach to social reality is the best way to comprehend the world. This comprises many research methodology philosophies. According to Bryman and Bell (2007), descriptive epistemology refers to a philosophical viewpoint that can be identified through study and may be described. According to Saunders et al. (2012), the key question is not so much whether the study should be philosophically contingent as it is how well it holds up when compared to different ideologies. This study aimed to outline the philosophical viewpoint about the risks and opportunities that FinTech posed to the commercial banks in Zimbabwe. Positivism, realism, and interpretivism are the main three epistemological stances (Bryman & Bell, 2007).

3.3.1 Positivism/ quantitative

August Conte, a French philosopher, originally used the term positivism (1798–1857). The philosopher combined rationalism and empiricism into positivism, a cohesive philosophy. Yegon (2015) posited that ideas can be developed through reasoning, but they can only be verified through observations, and that this relationship between theory and observation is circular. Positivism is in favour of using natural sciences to explore social reality and other subjects. Positivists hold that it is possible to see and explain reality from an objective point of view, and they do this by noticing the world neutrally and objectively, unearthing patterns and generic laws, forming hypotheses, and testing those hypotheses (Yegon, 2015). They also advocated for the separation of phenomena and the requirement that observations be reproducible. This typically means altering reality using variations in a single independent variable in order to look for patterns and develop linkages between specific elements of the social environment (Bhattacherjee, 2012). A portion of a quantitative methodology was used

in this study because it had the goal of examining the risks and opportunities posed by FinTech to Zimbabwean commercial banks.

3.3.2 Interpretivism/phenomenology/qualitative

Since some aspects cannot be fully understood in terms of math or numbers, interpretivism has stood the test of time. Certain risks and opportunities brought on by FinTech cannot be measured objectively in this study. Positivism has been criticism for defining "laws" in a fashion that is akin to physical objects, which is problematic given how complicated business management and society are. The researcher also employed interpretivism to analyse the benefits and challenges that fintech poses for Zimbabwe's commercial banks due to the shortcomings of positivism. This complements their analysis of the positivism approach. Epistemology positivists are referred to as interpretivists. The phrase encompasses the opinions of authors who have criticized the use of a scientific based model in applications and are prompted by various logical traditions (Yegon, 2015). Supporters of interpretivism emphasize the need of considering human diversity in our capacity as social agents (Saunders et al., 2012, p. 137). According to interpretivist theory, it is impossible to fully comprehend the social world by using the same logic that governs natural research. Fundamental concepts of interpretivism, according to Blumberg et al. (2011), include the following: study is motivated by interests; the social reality is formed with a meaning from individuals; and the investigator is part of what is observed.

Interpretivism holds that only personal engagement and interpretation may fully comprehend reality. The interpretive stance is founded on the notion that phenomena must be investigated in their natural environments and that scientists cannot study phenomena without having an impact on them. Yegon (2015) defined realism as the notion that the scientific and social sciences can and should start with the collection of evidence, explanation, commitment, and view that there is an external reality to which scientists direct their attention.

Anti-positivists opposed positivism by associating it with quantitative research techniques like surveys and experiments, which lack any explicit philosophical commitments (Bhattacherjee, 2012). In contrast, anti-positivists used qualitative techniques like unstructured interviews and participant observation. Additionally, Cohen et al. (2007) assert that positivism can't be used to examine human behaviour because of the way in which human nature is deeply complex and social phenomena are elusive and intangible in comparison to the natural world's regularity and order.

According to Bhattacherjee (2012), the anti-positivism placed a strong emphasis on the necessity of studying social behaviours using interpretive techniques based on an awareness of the meaning and objectives that individuals attach to their own individual activities. Conversely, positivism criticizes the qualitative approach, contending that settings, situations, events, conditions, and interactions cannot be replicated to any appreciable extent and that generalizations to contexts other than the one under study cannot be made with any degree of

assurance (Yegon, 2015). Furthermore, because qualitative data is subjective in nature and has a singular context of origin, it is challenging applying established standards of validility and reliability, and the process of gathering, analysing and interpreting the data is time-consuming (Tichapondwa, 2013). Rafik (2014) stated that combining qualitative and quantitative methods would result in a strategy that was the best of both worlds.

Given the foregoing, the research used a pragmatic paradigm, which allowed for neutral, objective observation, the establishment of general relationships and common laws, and the development of theories that can be tested (quantitatively). Subjective interpretations are used in studying human perception, which is difficult to do using positivism (qualitative). A multi paradigm approach is appealing for including viewpoints that provide the appropriate context for addressing and posing potential solutions to one's study issues (Creswell, 2014). This gave the researcher the chance to unbiasedly evaluate the risks and benefits posed by Financial Technology on the efficiency of Zimbabwe’s commercial banks.

3.3.3 Justification of using a pragmatic paradigm

The argument is in line with the application of phenomenology, which includes its capacity to understand the meanings individuals attach to things and its role in the creation of new theories. While positivism research, on the other hand, enables the researcher to identify the relationships between variables, it frequently falls short in terms of examining the causes of those relationships (Creswell, 2014). The variables underlying the general connections can be explained through a qualitative investigation. When conducting the study, the researcher chose to use multiple methods (as opposed to a single method), combining positivism's quantitative and qualitative phenomenology techniques with primary data as well as secondary data. This was accomplished by the use of a multi-model study (a subset of many approaches), in which certain data that is mostly qualitative was "quaint sized" (Saunders et al., 2009) so it might be examined by quantitative techniques. Since the researcher did not intend to test any specific theories, phenomenology was prioritized in this study over positivism. Following this conversation, the researcher was persuaded that using a pragmatic paradigm would give respondents a chance to express

3.4 Research design

The research design or plan is described as a "road map" which links the empirical information to the study's goals and, eventually, to its findings and recommendations. According to Creswell (2014), the research design is also known as the sorts of inquest in the qualitative, quantitative, and mixed methodologies approach that give particular guidelines for the study design's procedures. According to Cooper and Schindler (2011), a study plan or design aids the investigator in allocating scarce or limited resources by ensuring the adoption of the proper methodology. The plan for data collection, measurement, and analysis is established by the research design (Cooper & Schindler, 2011). Casual comparative research, correlational research, explanatory research, descriptive research, and exploratory research are all examples of research designs. A study design offers a chronological way for data to be

gathered, combined, and analysed to fulfil research objectives in the most reliable and thorough way, as can be seen from the definition above.

3.4.1 Descriptive research analysis

The descriptive survey is a technique for collecting data that includes interviewing or balloting the group being researched or investigated Orodho (2005). As Kombo and Tromp (2006) claims, descriptive research studies are not simply restricted to results that are factual but frequently resulting in the creation of crucial knowledge principles and the resolving of key issues. As a result, it can't be properly classified as either quantitative or qualitative but instead applies both elements to the same study. A descriptive study aims to generate statistical data about the risks and opportunities that FinTech poses to Zimbabwe's commercial banks. As stated by Bijpai (2011), findings from illustrative studies are regularly incorporated into the production of significant knowledge principles and can act as a direct source of useful data that can help banks and the government prepare for and address issues facing the sector. Descriptive researches include measuring, classifying, analysing, comparing, and interpreting of data after data collection (Yegon, 2015). According to the viewpoints advanced above, a descriptive study is the most appropriate type of study for this investigation since it will provide information on the current state of Fintech in the nation, as well as the potential and challenges it poses to commercial banks.

3.4.2 Justification of adopting a descriptive research analysis

This particular type of research was selected because, according to Bijpai (2011), it offers a direct source of helpful information about how people perceive things and aids in problem-solving and planning. A descriptive study, according to Cooper and Schindler (2011), enables an in-depth analysis of phenomena or characteristics related to the subject population, including who, what, when, where, and how of a topic; estimates of the proportions of the population that have these features; determination of bivariate or multivariate relationship between variables; cross-tabulation of information; muscle of relationship or magnitude of relationship; and how the relationship is determined between variables. Another researcher who looked into how FinTech was affecting Japanese commercial banks was Nakaso (2016). Both of these researchers employed a descriptive research design.

In the research, descriptive study was used in an effort to describe the particular behaviour as it manifests in the atmosphere. As stated by Mugenda (2008), the goal of a descriptive study is to identify and describe things as they are in order to identify current conditions, highlight current needs, and highlight the current status of a phenomenon. The method's adaptability since it allows one to consider various aspects of an issue being studied (Kothari, 2009). Descriptive studies provide information for future action, making them appropriate for this study because future action is required to respond to these trends in the FinTech industry (Sekaran, 2010). With descriptive research, one can examine a topic's who, what, when, where, and how in greater detail than one could with other types of research.

Given the foregoing, a descriptive study will aid in determining the present level of Financial Technology usage and the challenges and benefits that are brought to Zimbabwe's commercial banks. The geometric data generated by a descriptive study aid in pinpointing the most potent Financial Technology factor that is transforming how individuals interact and access financial services.

3.5 Research strategy

When selecting a research strategy, it will be crucial to consider the perceived relationship between theory and research that the research question implies as well as the epistemological consideration (Rafik, 2014; Bhattacherjee, 2012). Quantitative and qualitative research strategies differ significantly in each of these areas. While the positivism paradigm relies on survey research, phenomenological research techniques also use interviews, focus groups, case studies, action research, and ethnography. In a study that used a combined paradigm to develop a new strategy, the tactics from the two paradigms can be blended. In light of the foregoing, a survey strategy was employed in the research.

3.5.1 A Survey study

A survey study is a specific kind of field research that entails using a questionnaire to gather information from a sample of constituents chosen from an established group. This gave the researcher a thorough awareness of the risks to commercial banks as well as their prospects. Surveys are legitimate both internally and externally, and they rely on some kind of random sampling technique to generate a sample that is representative of the particular community being studied and to create findings that may be applied to a larger population. A survey study's versatility, in addition to its confidentiality, effectiveness, economy, and ease of administration, makes it a better source of primary data (Creswell, 2014). They are therefore a really clever way to learn what people do, believe, and require, and no other research approach can offer this wide range of capacity, ensuring a more accurate sample to acquire focused data. It is simple and useful to study a representative sample in the field. By choosing representative samples that are simple to reach, survey research has become increasingly effective thanks to the use of probability theory to sample selection (Creswell, 2014). Results from such a sample can be securely extrapolated to the full population. The anonymity of survey studies encouraged a high response rate and a high degree of honesty from the respondents. Additionally, they provide flexibility because it is simple to combine them with other methods to create richer results.

3.6 Research Choice

The second component or onion layer is research options, which relates to the methodologies employed; in this research, qualitative as well as quantitative investigation methods were selected. The distinction between statistical data and non-statistical data, according to Saunders et al. (2012), is one method for separating quantitative from qualitative research.

3.6.1 Qualitative Research

In-depth interviews, participant observation, and subject videotaping are only a few examples of the core approach to exploration and analysis known as qualitative approaches (Blumberg et al, 2011). Denzin and Lincoln (2005) assert that qualitative research has its roots in an interpretive philosophy where the researcher seeks to infer meanings from and make sense of the social and subjective components. Figures are less common in qualitative research than words and ideas. The ardent proponents of this approach argue that social factors can be explained verbally rather than numerically (Bryman & Bell 2015). The research's design is comparable to a wide range of approaches that have the same ontological and epistemological foundation. Case studies, action research, grounded theory, and semi-structured interviews are a few of the techniques used. In the quantitative approach, closed-ended questions were used, making some of the data unavailable for collection. Interviews were conducted to gather all the information that closed questions might have missed in an effort to close the information gap. The questionnaire also included closed-ended questions to allow for the collection of extra data.

3.6.2 Quantitative Research

Positive psychology serves as the foundation for quantitative research, which is typically employed in highly structured studies. It is also used to describe planned and well-organized data collection methods (Saunders et al. 2012). Additionally, Bryman and Bell (2015) stated that quantification is frequently emphasized in the collection and analysis of data in quantitative research. Quantitative research studies significantly rely on quantitative data, such as numbers and statistics, according to Blumberg et al. (2011). In this study's design, questionnaire- or highly structured interview-based experimental and survey studies are primarily used.

For the sake of this study, the research chose to use several methodologies (as opposed to one method), namely a synthesis of both primary and secondary data, as well as the quantitative and qualitative phenomenological techniques and methodologies of positivism. This was carried out in the manner of a multi-model study (a subset of many methodologies), in which certain information, which according to Saunders et al., is mostly qualitative, as ‘quaint sixed’ so that it could be examined using qualitative approaches. Since the researcher did not intend to test any specific theories, positivism was prioritized in this study over phenomenology. Due to time constraints, questionnaires with closed-ended, focused questions were also used. The respondents received the surveys and had been given plenty of time to answer manually or via email.

3.7 Target population

According to Bijpai (2011), the target population is a group of things that handle the data needed by the investigator and from which conclusions will be derived. According to Cooper and Schindler (2011), the population parameters for the target population are the summary terms like incidence percentage, mean, and variance. The choice of respondents is based on

the type and quantity of comparisons that will be conducted, as well as the analysis that will be required (Yegon, 2015).

The most knowledgeable groups of people were the managers of commercial banks, managers of fintech companies, and experts. As a result, the investigator had to select a representative from each group. The investigator was able to undertake a cross-sectional examination of how Financial Technology on Zimbabwe's commercial banks because the targeted respondents were bank bosses, bank staff, fintech managers, and industry experts. The choice of bank managers and workers was made with the intention of learning more from those who are more knowledgeable about how FinTech is affecting their organizations. Since they are leading the FinTech revolution, FinTech managers were selected. Since experts are the primary sources of information with an unbiased assessment of the commercial bank's prospects in a world of big data and digital technology, experts were also targeted.

3.7.1 Sampling techniques

Despite the use of a survey approach, respondents must be selected by sampling. The population was divided into levels using a stratified haphazard sampling technique. It was reasonable to divide the heterogeneous population into similar status (classes) using stratified haphazard sampling. Bank managers, bank staff, FinTech bosses, and experts are among the several groupings. This method helped create a group of representatives from which conclusions about the entire group could be drawn.

3.7.2 Judgemental/ purposive sampling

Following stratification of the populace, judgmental sampling was used to choose the respondents. By choosing individuals who the researcher believes would be suitable for the study, a representative sample of the population is drawn. The difficulty that some people have in comprehending the variable understudy. Judgmental sampling was used since some of the measures needed some level of financial literacy. When some members of the populace make better subjects than others, it is advantageous because it allows the researcher to select participants with availability and attitudes that are appropriate for the research, even though it has some components of bias.

3.7.3 Sample Size

According to Bougie (2010), it serves as the list of components from which prospective responders are selected. The sample size used to generate the primary data is displayed in Table 3.1

Table 3.1: Sample size

Targeted population	Targeted respondents
Bank managers	35
Bank employees	30
FinTech managers	25
Total	90

Source: primary data

According to table 3.1, 75 questionnaires were distributed to the respondents in order to collect the data. The 10 specialists were selected from various financial backgrounds, and the researcher conducted in-depth interviews with each of them.

3.8 Research instruments

Data were gathered for the study using one sort of research instrument. Yegon (2015) described a research instrument as a device used in social science to collect data. To gather data, the investigator used the primary sources as well as the secondary sources.

3.8.1 Questionnaires

A questionnaire, as defined by Monette et al. (2011), is a technique for gathering data for survey research that comprises recorded questions that respondents answer on the questionnaire form itself, independently of an interviewer. Questionnaires were the main research tool used. Information regarding how FinTech affects commercial banks was structured in accordance with the study's objectives. They were developed specifically for the goal of obtaining data on the benefits and drawbacks that FinTech brings for Zimbabwe's commercial banking system.

3.8.2 Justification of using questionnaires

Kothari (2009) claims that using questionnaires has the benefits of being easy to obtain for large samples, affordable when the universe is vast, and lowering interviewee bias. The administration of questionnaires is noticeably easier, faster, and less expensive. Furthermore, surveys provide ample time for participants to complete them and reply without interfering with their everyday activities. Additionally, they offered the researcher sufficient time to examine the responses without making rash decisions. Researchers can efficiently manage answer variation and gather a variety of data by using closed-ended survey questions. But for

respondents with busy schedules, questionnaires were less effective because they were impossible for them to finish in time.

3.8.3 Construction of questionnaires

How a questionnaire is designed affects the reliability, validity, and rate of response of the data obtained. The design of the survey's questionnaire, the thoughtful design of the questions, the purpose of the questionnaire is clearly stated, then pilot testing can all help to achieve high response rates, reliability, and validity.

The respondents were instructed to answer the questionnaire in an anonymous manner, and each was given a covering letter to complete. The covering letter included the aim of the research and crucial details for filling out the questionnaire. It was intended to consider every aspect of the risks and opportunities that FinTech poses to Zimbabwe's commercial banks.

Close-ended questions, checklists, and a five-point Likert scale were all used. It was organized in accordance with the study's goals and research questions in order to gather information specifically on the potential advantages and disadvantages of Fintech for Zimbabwean commercial banks. The first part of the questionnaire was designed to ask generic questions and get answers on the respondent's age, status, job, and educational background. The second part of the survey attempted to gather data on people's perceptions on the potential benefits and risks of FinTech for Zimbabwean commercial banks.

3.8.4 Pilot study

In order to find the most efficient technique to conduct a larger investigation, researchers often conduct a pilot study, which is small-scale explanatory research (Simon, 2011). The goal of the pilot testing was to determine whether the research instruments were accurate and appropriate (Cooper & Schindler, 2011). A pilot study was conducted to detect and address questionnaire flaws using data from two emails sent to respondents in the sector and a small sample of students at the University of Zimbabwe. This made it easier to create queries that were clear to understand. During the process, corrections were suggested, and changes were made as a result.

3.8.5 Administration of questionnaire

The questionnaires were distributed using two techniques. The questionnaire was distributed to the respondents via the mailing method. Calls were made to obtain consent prior to emailing the questionnaire. Because it allows the researcher to send questionnaires to various respondents without having to pay for travel or printing costs, mail delivery was very effective and less expensive for the researcher. However, the costs associated with making follow-up and initial calls to inform the respondents of the emails were slightly higher. The

completion of some questionnaires took up to three weeks, while for others it just took one week. Follow-ups were conducted by calling or stopping by the offices. This technique worked well, and several respondents answered the questions while waiting. Even though it was effective, data collection took a long time.

3.9 Secondary data

To make accurate conclusions on the effect of FinTech on Zimbabwean business, secondary data was gathered. As a result, the firms' financial statements were examined to offer secondary data to supplement primary data. For the aim of this study, journals, books, RBZ publications, as well as newspapers had also been examined.

3.10 Data processing and analysis

Using numerical codes in SPSS V21, the acquired data was first cleaned, sorted, and coded. Data analysis is the way of collection, modelling, and unearthing raw data in order to get relevant data that can be utilised to produce findings, projections, and decision-making information.

3.10.1 Descriptive analysis

Prior to doing a factor scrutiny, a descriptive analysis of each data set (questionnaire parts) was conducted. The mode, standard deviation, and mean scores were employed as descriptive statistical devices. The usage of themes and similarities was employed to analyse the interview-derived information.

3.10.2 Van Gruenen, Viviers and Venter Scale

In order to analyse the mean scores and standard deviations, the researcher employed the key from Van Gruenen, Viviers, and Venter (2011). In order to gauge the participants' observations in each questionnaire section, the following scales were used:

Mean scores varying from $1.0 \leq M < 1.8$: Very Poor

Mean scores varying from $1.8 \leq M < 2.6$: Poor

Mean scores varying from $2.6 \leq M \leq 3.4$: Neutral

Mean scores varying from $3.4 < M \leq 4.2$: Good

Mean scores varying from $4.2 < M \leq 5.0$: Optimized

3.11 Validity

In order to produce scores that effectively reflect the real variables examined, an empirical measure must accurately reflect the concept it is designed to measure. This is known as validity. For all researchers who collect educational data, validity is of utmost importance. One can use a variety of validity metrics, including contemporaneous validity, criteria validity, face validity, and content validity. This study created the questionnaire with the goal of achieving face validity.

3.11.1 Face validity

Face validity assesses whether a research questionnaire appears genuine to a respondent who should fill it out at first sight following a cursory evaluation. Accordingly, face validity describes what a questionnaire's items actually measure as opposed to what the investigator intends it to quantify initially (Kumar, 2011). According to the widespread consensus, each question in the survey should have a rational relationship to a goal. We took this into consideration when creating our questionnaire, and every question has a clear connection to the study's goals. To assess the reliability of the research apparatus, the researcher employed a suitable probability sampling for the investigation. The sample can be generalized because each sample precisely reflected the population's genuine situation. The researcher made sure that the questionnaires and interviews used questions that were drawn from the research objectives and research questions. The questionnaires were double-checked to ensure that biases in the question formulation had not crept in.

3.12 Reliability

Salkind (2012) lists faithful as a synonym for reliability, along with dependable, consistency, stable, trustworthy, and predictable. Reliability, according to Delport and Roestenburg (2011), is concerned with how accurately test results are measured. The research takes Salkind (2012)'s suggested techniques into account to boost the reliability of measures, as follows,

- Increase the number of observations or items
- Remove everything that’s confusing
- Increase the measurement’s resolution
- Standardize the circumstances in which the test is administered
- The instrument’s level of difficulty is moderate
- Reduce the impact of external events
- Systematize instructions
- Maintain regular scoring practices and
- Utilize replications, pilot studies, and pre-tests (Salkind 2012).

A pilot study was undertaken to evaluate the investigation instrument's dependability in light of the aforementioned, and changes were made to the research instrument to increase its reliability. The dependability and internal consistency of the research tool were evaluated using a Cronbach alpha coefficient.

3.12.1 The Cronbach alpha coefficient

Utilizing the Cronbach's Alpha test, which was designed to guarantee the research instrument's internal consistency, comprehensiveness, and reliability. According to Sakarana and Bougie (2010), internally consistency refers to the degree of relationship between several measurement construct and components. The inter-item correlations provide the foundation for the Cronbach alpha. The internal consistency of the items is excellent and the alpha coefficient will be very near to one if they have a significant correlation with one another. How susceptible to random error the scale is referred to as reliability. Kumar (2011) suggested an alpha coefficient of 0.7 as a minimum. In order to determine how closely your scale's elements, quantify the same underlying property or create, you can use Cronbach's alpha. The Cronbach's alpha scale has values ranging from 0 to 1, with higher values signifying greater dependability. Due to the huge sample size (more than 30), the researcher then used Kolmogorov to check the data for normality.

3.13 Limitation of the study

Limitations are factors that are beyond the researcher's control yet may affect the study's results. All studies have certain inherent limitations, but it's important to be aware of them and do your best to reduce their influence on the study's conclusions. The following limitations were discovered in the current study. First, Zimbabwe's fintech industry is still in its infancy when compared to that of wealthy nations. By selecting responders using a deliberate sampling strategy, this was reduced. Second, a low level of trust in the legal system that was reduced by guaranteeing the confidentiality of the data gathered. Thirdly, when using strong statistical methods to analyse the data, it is thought that ordinal scale data does not give the researcher the level of precision required for a study. However, the utilization of interviews also aided in acquiring data that the Likert scale question might not have addressed.

3.14 Elimination of bias

Reduce the investigator's involvement during the completion of the questionnaires by allowing respondents to do so without interruption in order to remove bias in the study. Keeping silent about your views or opinions regarding the research instrument's question.

3.15 Ethical considerations and aspects

The phrase "research ethics" denotes a social code that expresses ethical integrity and consistent ideologies. It also alludes to custom or character. When conducting research, ethics is concerned with what is appropriate and inappropriate. All investigations are subject to

ethical considerations, regardless of the research designs, sampling, methodologies, and method(s) used (Gratton & Jones, 2010). The study has several ethical issues that are inherent, including participant anonymity, data confidentiality, and informed permission. All the aforementioned ethical principles are followed by the research investigation.

3.15.1 Confidentiality

The right to professional privacy and the secrecy of the information gathered were expressly promised in writing in the cover letter. The data, which was maintained in the strictest of secret, were the only things the research had access to. Paper questionnaires were maintained in a secured filing cabinet, while electronic questionnaires were saved on a computer with a password.

3.15.2 Research Ethics

The researcher made sure that the respondents wouldn't be identified. Anonymity is secured when the subject's identity cannot be associated to the private responses; confidentiality and anonymity are related issues. This was accomplished by omitting any inquiry on the respondents' identities or places of employment. The researcher protected the subject's identity by maintaining the confidentiality of private information in cases when respondents disclosed their identities or the companies they work for.

3.15.3 Informed consent

Prior to removing the surveys, it was initially acquired from respondents. In order to guarantee that a person provides their informed permission in a way that’s clear and obtrusive manner, researchers must first obtain permission from the subject before beginning any research. For respondents, there was no possibility of unusual stress, embarrassment, or loss self-esteem.

3.16 Chapter summary

The chapter provided an overview of the research's philosophy, design, tactics, approach, and data source. Further explanation of the data analysis process, including descriptive analysis, factor analysis, and one sample t-test, was provided. As directed by this chapter, the following chapter concentrates on the presentation, analysis and interpretation of data.

CHAPTER FOUR

Data Presentation, Interpretation and Analysis

4.1 Introduction

While the preceding chapter concentrated on the research method, this chapter provides, interprets, and analyses the data that was gathered. For display, tables and bar graphs were employed. Additionally, means and standard deviations were employed for the study of quantities. The material gathered through interviews was analysed using thematic frameworks. In order to allow comments based on in-depth answers from the conducted interviews, some of the closed question results were combined with interview responses. However, some of the interviews were examined independently. The rules were based on the upcoming goals.

4.2 Response rate

In particular, the legitimacy and veracity of the study results depend greatly on the response rate when analysing academic research. According to Brett (2012), it is crucial to take into account the sample's response rate to the questionnaires and interviews in order to ensure the reliability and applicability of the research findings. The response rate is shown in Table 4.1.

Table 4.1: Data Response Rate

	Issued	Returned	Response rate
Questionnaires	90	85	94.4%

Writer's Computation

$$\textbf{Data Response rate} = \frac{\text{Returned Questionnaires}}{\text{Issued Questionnaires}} \times 100\%$$

For data presentation and analysis, a rate response of 94.4%, or 85 of the 90 questionnaires given, were returned. The response rate complied with Leedy's (2009) guideline, which said that 60% of respondents was sufficient to determine the conclusion. Stat Pac Inc. (2014) proposed that the recommended rate of response could increase confidence.

4.3 Demographic variables

In this study, the analysis of the demographic data was crucial since it affected the significance, applicability, and dependability of the findings. Table 4.2 displays the demographic factors that were significant in this study.

Table 4.2: Demographic Variables

Characteristics	**Category**	**Valid Percentage**
Gender	Male	70.6
	Female	29.4
	Total	**100.0**
Age	20 - 30 years	41.2%
	31 - 39 years	41.2%
	40 years and above	17.6%
	Total	**100.0**
Duration(time) of service	1-5 years	35.3%
	6-10 years	41.2%
	+10 years	23.5%
Industry	Bank	64.7%
	Fintech	35.3%
	Total	**100.0**

Writer's Computation

In this survey, men made up the majority of respondents, making up 70.6% of the population, while women made up 29.4% of the respondents, as indicated in Table 4.2. The Fintech sector, where men made up the majority of respondents, as well as the majority of senior bank employees that answered to questionnaires, contributed to the dominance of male respondents. In order to get diverse viewpoints from various age groups, the distribution of the questionnaires took into account all age groups as well. According to the statistics gathered, 17.6% of the people over the age of 40 received the questionnaires, while 41.2% of those between 20 and 30 and 41.2% of those between 31 and 39 received them. The analysis of age groups was crucial since it helped the researcher get viewpoints from older age groups who were there during the transition from the beginning of Fintechs as well as from younger technocrats who are known as "information age/digital age" pioneers. Additionally crucial to the validity of the findings was the respondents' prior experience in the banking and fintech sectors. According to the data, 35.3% of respondents had between one to five years' experience, 41.2% had between six to ten years' experience, and 23.5% had experience of at least ten years. Analysis of respondents' expertise level was crucial since it affects how well they comprehend the potential and risks presented by Fintechs.

Regarding the final demographic factor, the banking industry accounted for 64.7% of respondents, while fintech industry accounted for 35.3%. Only five important Fintech companies (determined by posted revenue) were distributed with questionnaires, although the populace of banks was far larger, which is why the results also reflected this distribution.

4.4 Analysis of Reliability

In order to evaluate the veracity of the data acquired about the risks and possible benefits that Financial Technology presents to Zimbabwe's commercial banks, a reliability test was carried out. The Cronbach's alpha reliability statistics for the research's variables are presented in Table 4.3.

Table 4.3: Reliability Statistics

Factor dimension	Cronbach's Alpha	N of Items
Motivators of Fintech in Zimbabwe	.772	6
Digital Banking	.892	11
Mobile Money: Dangers	.829	8
Mobile Money: Opportunities	.939	5
Regtech: Opportunities	.840	6
Regtech: Danger	.752	3

Writer's Computation

The Cronbach alpha was used to indicate how well each item, measure, or assessment agrees with the others and how free of measurement error it is; this information is displayed on Table 4.3 above. The Cronbach's Alpha was calculated for this investigation. Since the least value of the alpha for the six (6) variables applied to measure the dangers and opportunities posed by FinTech to Zimbabwe's commercial banks was 0.75, it was determined that the alpha was suitable for further analysis and that all the items together formed a scale with a respectable level of internal consistency and reliability. Nunnaly (2008) theorized that a Cronbach's alpha of above 0.7 is recommended for extra investigation, and the results are in line with what he considered.

4.4.1 Data normality test

The Kolmogorov-Smirnov test was the most appropriate to check the normality of the data because the sample size was big. When the sample size is greater than 30, the Kolmogorov-

Smirnov test should be used, according to Ghashemi (2012). The Kolmogorov-Smirnov test indicates that the data come from a normal population when the significance value is larger than 0.05. In order to check for normalcy, a hypothesis test was carried out using SPSS, as shown below.

Table 4.4: Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov[a]	
	Statistic	Sig.
Motivators of Fintech in Zimbabwe	.111	.200*
Digital Banking	.113	.102*
Mobile Money: Dangers	.110	.200*
Mobile Money: Opportunities	.115	.150*
Regtech: Opportunities	.112	.200*
Regtech: Dangers	.108	.200*

Writer's Computation

The data was normally or evenly distributed because all of the found significance values were higher than 0.05. The data that generates a p-value greater than 0.05 is regarded as following a normal distribution, making it eligible for additional tests that depend on the normality of the data, according to Costello and Osborne (2005). The researcher continued to evaluate the means obtained as mentioned below after determining that the data was normally distributed and useful.

4.5 Presentation and Analysis of Data

4.5.1 Motivators of Fintech in Zimbabwe

Finding the motivators of fintech in Zimbabwe was one of the study's goals or objectives, and the findings are shown in Fig. 4.1.

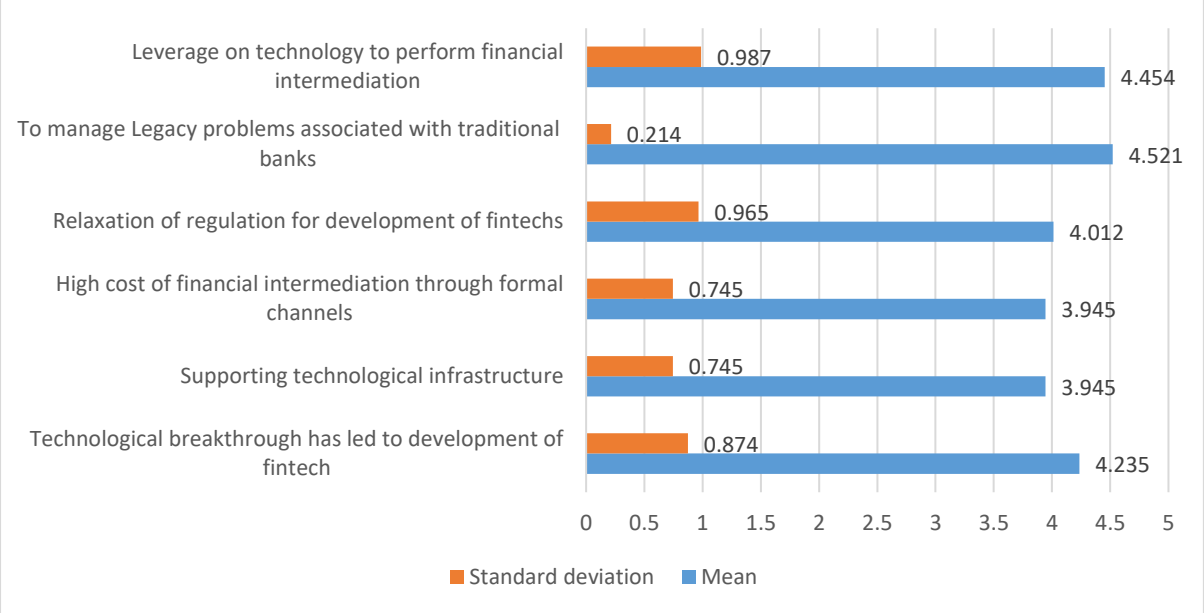


Fig 4.1: Motivators of Fintech in Zimbabwe

Writer's Computation

**- (The scales below were used to measure the respondents' observations on motivators of Fintech)*

Mean scores ranging from $1.0 \leq M < 1.8$: Very Poor

Mean scores ranging from $1.8 \leq M < 2.6$: Poor

Mean scores ranging from $2.6 \leq M \leq 3.4$: Neutral

Mean scores ranging from $3.4 < M \leq 4.2$: Good

Mean scores ranging from $4.2 < M \leq 5.0$: Optimised)

Van Gruenen, Viviers and Venter (2011) provided the key which was used.

The first question in the section on the factors influencing the development of fintech in Zimbabwe asked whether a technological advance had contributed to the growth of the industry there. A positive response was received, as evidenced by a mean score of 4.24 and a standard deviation of 0.87, which indicates that it had. The results of the follow-up interviews showed that the development of new financial instruments and services provided by financial institutions in Zimbabwe was a result of the country's technological advancement. A mean

score of 3.95 and a standard deviation of 0.75 in the results further demonstrated the importance of supporting technological infrastructure as a driver of Fintech. These findings supported the literature by Adongo (2015), who hypothesized that the adoption of Fintech was a result of the speed at which technology is changing the world and a strong supporting infrastructure. The same results were reached through interviews, where the vast majority of respondents said that supporting infrastructure and technology advancement should be the main motivations. According to one of the interviewees,

"Globalization, which pushes for the creation of a global village, encourages the use of technology in all facets of service delivery, which encourages Fintech while also fostering sound technological infrastructure".

The study went on to explore if the high cost of obtaining financial intermediation through official channels also served as a motivator. A more evenly distributed response rate was attained, with 47.1% disagreeing, 47.1 agreeing, and 5.8% neutral. Furthermore, a mean score of 4.01 and a standard deviation of 0.95 revealed that the high rate of Fintech acceptance in Zimbabwe is demonstrably improved by the loosening of restrictions governing their development. According to the results of the interviews, regulation is behind and is thus restricting the growth of Fintechs. According to Alt and Puschmann (2012), countries with less restrictive regulations on technology development have a higher rate of technological advancement. An answer given during an interview that stated the following was used to support this point:

"Normally, the government and the organizations that have the power to regulate the adoption of technology should refrain from being overly strict with businesses who are attempting to do so because this kills the momentum''.

According to Dayadhar's (2015) research, the high cost of utilising official channels was a seen as a barrier to the uptake of Financial Technology. An optimal mean score of 4.52 indicates that the results on the question of whether managing the legacy of traditional banks pushing Fintech are necessary were good.

With a mean score of 4.55 and a standard deviation of 0.99, it was determined that using technology to undertake financial intermediation was indeed a motivator. According to study conducted in South Africa in 2017 by KPMG, the requirement to manage the legacy has led to numerous banks embracing financial technology to compete with Fintech firms and other banks.

4.5.2 Digital banking at Commercial banks in Zimbabwe

Table 4.5 lists the conclusions from the opportunities and threats of digital banking that were discovered. What that means is explained below.

Table 4.5: Threats and Opportunities of Digital Banking

Statement	Mean	Standard deviation
A bank's customer base grows as a result of digital banking	3.847	0.548
Commercial bank's transaction costs are reduced via digital banking	0.211	0.784
Customer proximity is increased via digital banking	4.101	0.254
For commercial banks, digital banking boosts productivity	3.374	0.745
Bank profitability has greatly increased as a result of digital banking	3.415	0.987
Real time transactions are now possible for commercial banks thanks to digital banking	4.421	1.232
Decreased search and market costs, which are primarily related to ATMs and Smart Cards	2,987	0.995
As a result, online banks have been created	3.154	0.365
It has diminished the significance of a larger branch network	3.965	1.001
It has permitted extended banking hours	4.213	0.874
It has made customer's lives easier	4.121	1.222

Writer's Computations

The focus of this research's part was on the advantages and disadvantages of digital banking in Zimbabwe's commercial banks. The mean score of 3.85 and the standard deviation of 0.55 found on the question of whether digital banking expands a bank's customer base indicate that it does. This might be the case due to the financial inclusivity and ease provided by digital platforms. In addition, as illustrated by a mean score of 2.31 and standard deviation of 0.78, the respondents disagreed that digital banking reduced transaction costs for commercial banks. The commercial banks in Zimbabwe have increased their customer base by digitalising the majority of banking operations and attracting clients who are located far from their physical locations. Although Echchabi and Hassanuddeen (2014) emphasized that transaction costs are inherent to the bank, they hypothesized that digital banking encourages convenience, expanding bank client bases. Additionally, the results showed neutrality regarding how productivity and profitability were impacted by digital banking, as seen by mean scores of 3.37 and 3.41, respectively. Uncertainty exists on how digital banking affects the efficiency and financial success of banks in Zimbabwe. According to Dietz et al. (2016), digital banking alone does not significantly affect productivity and profitability, but it does increase the importance of banks in the market.

An average score of 4.42 and a standard deviation of 1.23 further demonstrate that real-time transactions for commercial banks have been made possible by digital banking. According to an average score of 2.99 and a standard deviation of 0.99, respondents were undecided about whether digital banking decreased the expenses connected with search and markets, which are mostly related with ATMs and Smart Cards. The findings demonstrate that using digital

banking has improved real-time transactions rather than lowered transaction costs for Zimbabwean commercial banks. On whether digital banking resulted in virtual banks, a neutral answer was also achieved, as evidenced by a mean score of 3.15 and a standard deviation of 0.37. Moreover, as demonstrated by a mean score of 3.97 and 4.21, respectively, the results showed that the need of a larger branch network was diminished and long banking hours were permitted by digital banking. The results of the interviews verified this, with all interviewees using Standard Chartered Bank Zimbabwe as an example, which has largely shut down its branch network in favour of delivering its goods and services mostly online. This outcome is consistent with Goyal and Vishal's (2017) assertion that the use of digital banking has decreased the need to open numerous locations for convenience while also allowing for 24-hour access to banking services.

The interview questions that followed on the topic of possibilities and challenges included: "What impact does digital banking have on the performance of commercial banks in Zimbabwe?" People had varying responses, with some arguing for beneficial outcomes and others for negative effects. Numerous respondents claimed that the rise of Fintech firms and digital banking had made commercial banks the target of severe rivalry. The opinion of Respondent 5 was as follows:

"Our financial performance and client base have suffered as a result of certain customers not preferring the Ecocash platform due to the freedom and convenience that mobile banking offers''.

The majority of respondents (76%) stated that the introduction of digital banking in Zimbabwe had benefited a number of areas of the industry, including the provision of high-quality services, convenience, flexible transaction hours, and increased productivity. A manager in the banking sector responded, summarizing the majority of comments from the perspective of service providers, by saying that:

"These days, our customers may simply conduct banking business at home, which is advantageous to the bank because transactions can be conducted 24-hours a day over the phone".

4.5.3 Mobile Money opportunities and risks in the Zimbabwe's Commercial Banks

The research continued by outlining the potential and difficulties presented by mobile money in accordance with the goals. Table 4.6 presents the findings about the risks and opportunities associated with mobile money.

Table 4.6: Challenges and Opportunities of Mobile Money

Statement	Mean	Standard deviation
Mobile money is used more by informal savings groups than by commercial banks.		
Unlike the traditional commercial banks, it lessened the requirement for actual banks	4.215	2.145
Wide branch networks, a source of competitive advantage for commercial banks, have been eliminated	3.945	0.987
Compared to traditional or conventional commercial banks, it promoted financial inclusiveness	3.875	0.745
Heightened rivalry with commercial banks	4.125	0.654
Compared to commercial banks, it brought convenience	3.988	0.874
Pseudo-banking was introduced	3.125	1.021
decreased transaction costs as compared to commercial banks	3.124	0.584
Payment systems interference	3.454	1.022
Deposits mobilised than the traditional or conventional commercial banks	2.758	1.021
Using mobile money improves the multiplier impact	3.112	0.584
A way to move toward a cashless society	4.214	0.874
Enhancing the banking industry	3.987	1.022

Writer's Computation

It was crucial to include the aforementioned dimension on mobile money's threats and problems because almost every adult in Zimbabwe owns a cell phone. According to the data, nowadays informal groupings favour mobile money over commercial banks, as seen by the average score of 4.23. Mobile banking in Zimbabwe has become a reality for many people because to the creation of cutting-edge financial services on tiny phones and software on smart phones that users may use to conduct transactions. In addition, a mean score of 4.21 indicates that fewer individuals now require commercial banks, which is another benefit of mobile money. The findings demonstrate that Zimbabwean individuals now prefer using their mobile phones for banking transactions, which eliminates the need for additional bank branches. There is less need for bank branches everywhere because people in Zimbabwe can easily make bank transfers using a cell phone today. According to Foy et al. (2015), mobile money banking has a significant impact on how informal groups save their money and how commercial banks run.

The study went on to examine whether mobile money has reduced commercial banks' competitive advantage from their extensive branch networks and increased financial inclusion compared to traditional or conventional commercial banks. The results were favourable, as indicated by the respective means of (mean=3.945 sd=0.987) and (mean=3.875 sd=0.745). Banking institutes are pursuing a goal of cost minimization because of the economic turmoil being experienced in Zimbabwe; hence the utilization of broad branch networks has been rapidly losing impetus. These findings support the hypothesis made by Ionescu (2012), who found that the advantages of opening commercial bank branches were surpassed by those of mobile money, which also promotes financial inclusion. Additionally, the data collected showed that mobile banking enhanced competitiveness with traditional banks and provided

more convenience than traditional banks, as evidenced by (mean=4.125 sd=0.654) and (mean=3.988 sd=0.874), respectively. The rivalry among commercial banks to implement new technology has grown as a result of mobile banking in order to reap its benefits. Due to the convenience, it provided, KPMG (2016) found that mobile money put pressure on banks.

An average score of 3.12 and a standard deviation of 0.58 indicate that respondents did not agree that commercial banks' transaction costs were lower than those of mobile banking. According to results of follow-up interviews, bank clients are complaining about excessive transaction costs, which have become a hardship for them. According to Respondent 2, service providers are reaping in clients as a result of the current cash crunch, which leaves users with no choice but to utilise these digital platforms. As evidenced by (mean=4.21 sd=0.87 and (mean=3.99 sd=1.02), respondents agreed that mobile banking is a means of reaching a cashless society and that it also enhances the banking industry.

The advantages and disadvantages of Ecocash, Telecash, and One Money to commercial banks were discussed throughout the conversation. Although the replies varied, both acknowledged the contribution that these network companies had made to the success of their respective businesses. Some of the respondents claimed that the banking industry has benefited less from these services than they have from the ham they have brought. One of the responses from interviews is as follows:

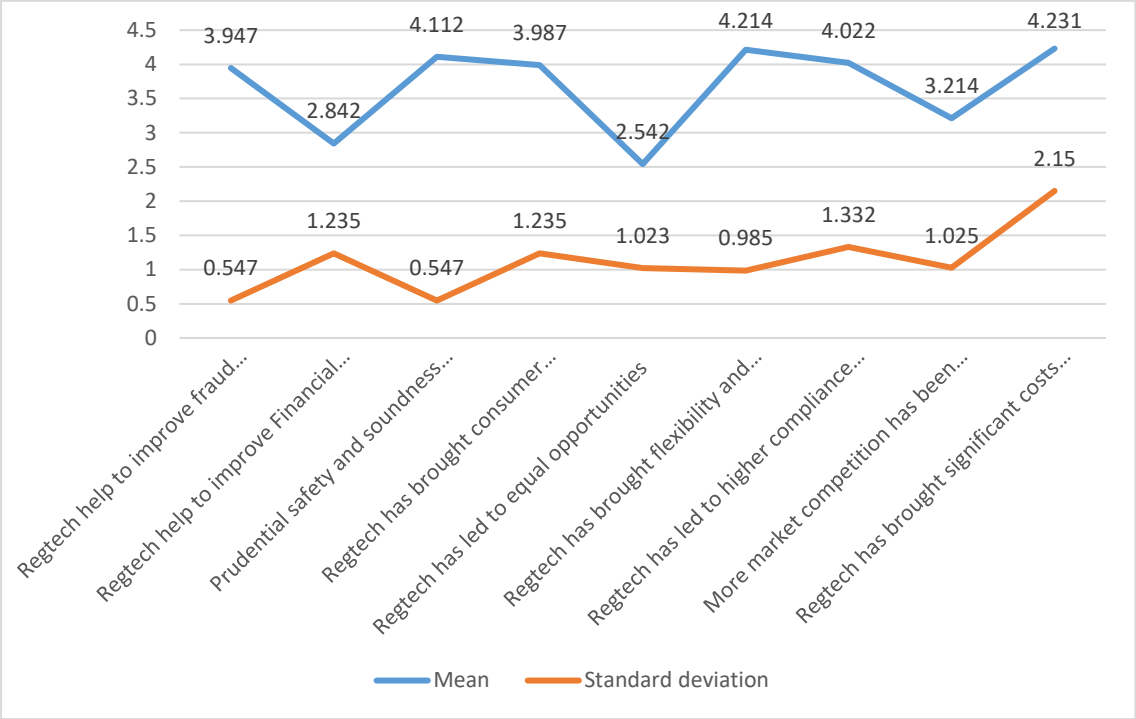
"Due of Ecocash's competitiveness with banks, several businesses are now using its services as a banking facility, which is bad for our bank".

Some people also appreciated Ecocash's contribution to improving the banking services offered by Zimbabwe's commercial banks, where approximately 90% of banks are connected to Ecocash. According to Respondent 10, the integration of banks and Ecocash facilities has improved the functionality of the banks where transactions are simple. However, it is also important to note that respondents cited cyber-crime and system flaws as problems with their mobile banking service.

4.5.4 Regtech's Impact on Commercial Banks: Risks and Opportunities.

Economic institutions can use contemporary, progressive technologies to help them comply with legal standards and work toward legal goals. Regtech may benefit banks by providing them with additional fantastic methods to enhance their cost reduction methods, survival tactics, as well as compliance and risk management spectrums. The impact of Regtech's dangers and possibilities on commercial banks is seen in Figure 4.2.

Fig 4.2: Risks and Opportunities of Regtech on Commercial Banks



Writer's Computation

According to (mean=3.94 sd=0.547) and (mean=2.842 sd=1.235), respectively, the respondents said that Regtech aids in improving fraud prevention, but they were less certain about whether it improves financial stability. Interview-based research revealed that using technology makes it simple to operate the firm. Respondent 4 said that even though technology is lagging in Zimbabwe, regulatory transparency is crucial for lowering the fraud rate. However, it was also stated that the financial stability is not always a product of regtech. One of the main advantages of Regtech, according to Kama & Adigun (2013), is the improvement in fraud prevention. They also claimed that it contributes to the stabilization of the bank's financial aspects. Additionally, the findings showed that provident safety and soundness (AML, KYC) enhanced, and consumer security and market honesty (integrity) had as well, as evidenced by mean values of 4.11 and 3.99, respectively, standard deviations of 0.54 and 1.23. Banking experts who were interviewed said that by using technology for management and monitoring, banks in Zimbabwe may benefit from forced compliance and conduct their operations with safety and soundness. By utilizing Regtech, banks were able to achieve market integrity by improving customer protection in the marketplace (Roy, 2014).

As indicated by the mean score of 2.54 and standard deviation of 1,02, respondents did not believe that regtech has led to more possibilities for all. A follow-up interview revealed that several players are upset about the regulatory arbitrage that Fintechs in Zimbabwe have brought about. Building societies and telecommunications companies are now providing services that were previously available only through banks. As a result, some businesses have benefited at the expense of others. The results on whether the bank's compliance system had

improved were favourable, as seen by the mean score of 4.02 and standard deviation of 1.33. Regtech, on the other hand, is advancing at a considerably slower rate than the dynamics propelling Fintech, according to players in the banking sector in Zimbabwe. As evidenced by a mean score of 4.23 and a standard deviation of 2.15, regtech has also significantly increased the price of standardizing banking systems. The cost of standardizing systems in accordance with linked Regtech is causing the commercial banks in Zimbabwe to complain because the benefits sought are not what they had anticipated.

4.5.5 How are banks adjusting to the changes brought about by fintech and the corresponding responses?

On the questionnaires, there was an open-ended question asking for suggestions on how banks should effectively combat risks from Fintech. Only 40 of the 85 completed questionnaires were able to provide a response. Different responses were gathered, revealing various tactics banks have adopted to combat the dangers posed by Fintech. The majority of respondents said that partnerships are the best way to address the technology issue, particularly when the bank is not well-equipped for modern technology. It was also established that several banks diversify their business by offering a variety of services. The comments that summarize all responses about partnerships with financial technology businesses and network firms like Econet, Telecel, and Netone are included below.

"*Certain of our banks have made a significant move by forming alliances or business partnerships with financial technology firms and Econet in an effort to grow the company while also lessening the threat from financial technology".*

Regarding the topic of diversification, it was highlighted that banks are no longer solely dependent on banking facilities and have expanded into a number of different industries, including real estate, insurance, and other fields. Banking specialists stated that over 70% of banks are also engaged in the insurance industry, and some of them also construct residences for sale. Respondent 3 mentioned:

"Many banks have entered the insurance industry due to changes in the business climate, and some, like CABS and CBZ, have entered the housing market as a means of remaining in the industry and fending off threats from Fintech".

Some respondents mentioned the necessity for investment in supporting technology infrastructure in addition to the two options mentioned above in order for the business industry to remain relevant. Nearly 90% of individuals who responded to this question said that investing in technology is not just a possibility but a requirement for all commercial banks in Zimbabwe. Respondent 2 mentioned:

"Fintech can be solved in a variety of ways, but as banks, technological investment is unavoidable".

The findings on this issue are consistent with those made by Adongo (2015), who noted that technical developments and industrial diversification are necessary for any sector to remain relevant in a changing world. Additionally, Aglionby (2016) asserts that partnerships and investment in technology are the answers to the problems facing the modern business sector, not just Fintech.

4.6 Discussion of results

For the foreseeable future, initiatives for the banking sector in Zimbabwe should be built on financial technology in order to remain profitable and survive. Fintech has unavoidably emerged in Zimbabwe as a result of technological advancement, despite the numerous difficulties that businesses currently confront, notably with regard to regulatory rigidity and supportive technological infrastructure. According to the results, banks are making every effort to use technology to execute financial intermediation while coping with the high cost of financial intermediation through official channels.

The results that were previously discussed demonstrated that financial technology in Zimbabwe provided a remedy for the lack of cash in banks and the incapacity of banks in Zimbabwe to offer financial facilities to other locations and other people. Additionally, the lack of cash has prompted banks to innovate by creating swiping and Ecocash connection in an effort to counteract its negative effects. To survive in the current climate of globalization, when technology is the only option, banks are implementing financial technology.

Results showed that Zimbabwe's use of digital banking had increased the customer bases of the majority of banks since it eliminated the proximity problem and permitted unrestricted banking hours. Customers' complaints regarding rising transactional costs when using mobile and digital banking services have come to light. From the bank's standpoint, it was discovered that because real-time transactions are made possible by digital banking, commercial banks are more productive.

Respondents from the banking community stated that the main focus is on financial technology towards the end of their financial years in effort to enhance the quality of the services and increase competitiveness. ZB Financial Holdings Chief Executive Mutandagayi (2018) recognised the demand to employ fintech to create proficiencies and meet evolving client demands. Fintech companies' competition has been observed to be intensifying. The data that have been given show that there is less of a need for physical banks because informal savings organizations in Zimbabwe use mobile money instead of commercial banks. Wide branch networks for commercial banks' competitive advantage have been perceived as losing steam. Financial inclusion has been improved more in Zimbabwe by digital and mobile banking than by traditional commercial banks.

In order to provide the customer more control over their accounts, the bank is constantly developing its online and mobile banking platforms in Zimbabwe. Customers and custodians of these Fintechs in Zimbabwe are very concerned about system dependability, consumer friendliness, and practical technologies because customers frequently complain about subpar service and system difficulties. In order to be current and forward-thinking, the institution is upgrading its compliance and risk control frameworks and investing in ICT capabilities, according to FBC Holdings' chairperson Nkala (2018).

The banking community in Zimbabwe has embraced financial technology because it enhances prudential safety and soundness. Due to ongoing discussions about transparency, regtech has yet to deliver equal access, flexibility, and innovation to the financial markets. Additionally, it became clear that the bank had spent money on educating both employees and consumers in order to fully utilize the digital revolution and keep up with changing consumer demands and market disruptions.

4.7 Chapter Summary

The analysis's findings were centered on the dangers, opportunities, and motivators of fintech (mobile banking, regtech, and digital banking). Fintech was found to be primarily driven by technological advancement and a strong supporting infrastructure. The expansion of the customer base, the decrease of real-time transactions, convenience, and cost savings associated with opening several branches are only a few of the prospects that were identified. Commercial banks in the nation have been deemed to be at risk from fintech start-ups. Cyber hazards and system difficulties have emerged as the main drawbacks clients face while utilizing digital platforms, yet both mobile and digital banking have helped to at least some extent with the cash crunch.

CHAPTER 5

Summary, Conclusion and Recommendations

5.1 Introduction

The display and analysis of data were covered in the previous chapter. The outcomes from the prior chapter were summarized in the present chapter. The results were also used as a foundation for the conclusion and suggestions. The chapter started off with a summary of the results, followed by a conclusion and recommendations.

5.2 Summary of the Results

5.2.1 Motivators of Fintech

The study found that the key forces behind Fintech were a technological advance and the infrastructure that supported it. In contrast to the respondents' perplexity, the respondents were less certain about whether the high cost of financial intermediation through conventional, traditional channels was also a factor that contributed to the high rate of Fintech adoption in Zimbabwe. Additionally established as a motivator was the use of technology for financial intermediation.

5.2.2 Digital Banking's Dangers and Opportunities

The findings showed that digital banking expands a bank's customer base, but respondents disagreed that it lowers transaction costs for commercial banks. Additionally, the findings showed that productivity and profitability were unaffected by digital banking. It was also established that real-time transactions for commercial banks had been made possible through digital banking. Regarding whether digital banking lowers costs linked with search and marketing, which are mostly associated with ATMs and Smart Cards, the respondents were split. Additionally, the findings showed that internet banking diminished the significance of a larger branch network and permitted extended banking hours.

5.2.3 Mobile Banking: Opportunities and Threats

It was discovered that informal groupings increasingly favour mobile money over commercial banks, negatively affecting the demand for commercial banks. The outcomes strongly supported the hypothesis that mobile money eliminated commercial banks' competitive advantage of having extensive branch networks and promoted financial inclusion over conventional commercial banks. Additionally, data collection showed that mobile banking enhanced rivalry with commercial banks and provided more convenience than commercial banks. The notion that mobile banking will result in lower transaction costs than traditional (commercial) banks was rejected by the respondents.

5.2.4 Regtech's Opportunities and Threats

The findings showed that Regtech helps to strengthen fraud prevention, but it is unclear whether it also increases financial stability. It can be added that one of the main advantages of Regtech is the improvement in fraud prevention, as it helps to stabilize the financial elements of the institutions. Additionally, the outcomes supported the improvement of prudential safety and soundness (AML, KYC), as well as consumer protection and market integrity. Banks' employment of Regtech enhanced market consumer protection, resulting in market integrity. Additionally, the respondents confirmed that Regtech has given flexibility and innovation to the financial markets but denied that it has led to equitable chances. Costly system standardisation for banks has been brought on by Regtech.

5.2.5 How are banks adjusting to the changes brought about by fintech and the corresponding responses?

Different responses were gathered, revealing various tactics banks are employing to combat the threat posed by Fintech. The majority of respondents said that partnerships are the best way to address the technology issue, particularly when the bank is not well-equipped for modern technology. It was also established that several banks diversify their business by offering a variety of services as a remedy. Regarding the topic of diversification, it was highlighted that banks are no longer solely dependent on banking facilities and have expanded into a number of different industries, including real estate, insurance, and other fields. It was established by the banking industry that over 50% of banks also operate as insurance firms, and some of them also construct homes for sale. Some respondents mentioned the necessity for investment in supporting technology infrastructure in addition to the two options mentioned above in order for the business industry to remain relevant. Furthermore, Aglionby (2016) asserts that partnerships and investments in technology are the answers to the problems facing the modern corporate sector, not just Fintech.

5.3 Conclusions

It is clear that the main forces behind Fintech are technology advancement and the enabling environment. The adoption of Fintech is the outcome of the speed at which technology is changing the world and a strong supporting infrastructure. Deregulation, harmonization, and/or relaxation of regulations may also aid in the growth of the fintech sector. According to Alt and Puschmann (2012), countries with lax technology development rules have a high rate of technological advancement.

In terms of digital banking, it may be said that Fintech expands a bank's clientele, although there may be a trade-off on transaction costs for commercial banks. Although Echchabi and Hassanuddeen (2014) emphasized that transaction costs are inherent to the bank, they hypothesized that digital banking encourages convenience, expanding client base. The findings also showed that digital banking diminished the significance of a larger branch network and permitted extended hours of banking, with informal groups favouring mobile money over commercial banks.

The study comes to the conclusion that mobile money banking has a significant impact on how informal organizations manage their finances and how commercial banks function. With this information at hand, it is safe to say that mobile banking outweighs the advantages provided by commercial banks. Based on the data obtained, it was determined that mobile money eliminates the competitive advantage of commercial banks' extensive branch networks and promotes financial inclusion more than traditional (conventional) commercial banks. This finding was comparable to that of Ionescu (2012), who affirmed that the advantages of opening commercial bank branches were surpassed by those of mobile money, which also promotes financial inclusion.

Additionally, it was determined that Regtech promotes fraud prevention. However, it was unclear whether Regtech also improves financial stability because a variety of factors, such as the political and social structures of a society or economy, affect financial stability. One of the main advantages of Regtech, according to Kama and Adigun (2013), is the improvement in fraud prevention. They also claimed that it contributes to the stabilization of the financial aspects of the banks.

5.4 Recommendations

It is advised that commercial banks have a strong supporting infrastructure because the modern corporate climate demands innovation, particularly in terms of technology, to maintain rivalry. The financial infrastructure should encourage the adoption of technology, particularly in the current climate where mobile and online banking predominate. Commercial (traditional) banks are urged to diversify their business operations to spread risk as a result of competition from Fintech firms. Many commercial banks have gotten into the house-building and insurance industries to relieve the pressure from merely providing banking services. Furthermore, commercial banks may beat back competition from Fintech firms and mobile network providers like Econet by engaging in significant marketing supported by first-rate digital and mobile banking. Because Fintec businesses innovate at an unsustainable rate, it is suggested for commercial banks to engage with them, especially those that are at the top of their game.

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QUESTIONNAIRE

Appendix 1: Questionnaire

Date 13/03/2023

To whom it may concern:

Dear Sir/Madam,

Ref: Request for information for research.

My name is Kudakwashe Aldridge Kunaka, Student Number B1953958, a final year student at the Bindura University of Science Education studying towards Bachelors of Accountancy and Commerce. I am undertaking a study titled "**Threats and opportunities by FinTech on Zimbabwean commercial banks: An open innovation perspective".** The main purpose is to analyses the threats and opportunities presented by Fintech to the Zimbabwean commercial banks. This information will be solely for academic purposes and will be in complementary partial fulfilment of the requirements for the Bachelors of Accountancy and Commerce.

I would like to appreciate you in advance for your positive contribution and assistance to the success of the project by your participation in completing this questionnaire. Your participation is optional.

If you have any concerns, please contact the undersigned;
Kudakwashe Aldridge Kunaka
Email address: aldridgekunaka@gmail.com
Cell: +263784708928, +263714642214

INSTRUCTIONS:

i) Please answer all questions fully and honestly.

ii) Where boxes are provided indicate your answer by ticking the appropriate box.

iii) Do not write your name or identity on the questionnaire.

SECTION 1: PERSONAL DETAILS

1. **Gender**

Male	
Female	

2. **Age group**

20 - 30 years	
31 - 39 years	
40 years and above	

3. **Please state the industry**

Bank	
Fintech	

4. **Please state your work experience**

1 – 5 years	6 – 10 years	11 – 15 years	Above 15 years

SECTION 2: Drivers of Fintech in Zimbabwe

Please tick the appropriate response in the boxes provided

State your level of agreement to the following statements on the extent to which you think they are key drivers of development and growth of fintech in Zimbabwe, by ticking the appropriate box.

Key: Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (SA);

Statement	Rating				
	SD	**D**	**N**	**A**	**SA**
1. Technological breakthrough has led to development of fintech					
2. Supporting technological infrastructure					
3. High cost of financial intermediation through formal channels					
4. Relaxation of regulation for development of fintechs					
5. To manage Legacy problems associated with traditional banks					
6. Leverage on technology to perform financial intermediation					

SECTION 3: Digital Banking

Please tick the appropriate response in the boxes provided on the opportunities and challenges digital banking in the Zimbabwean Commercial banks

Key: Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (SA);

Statement	**SD**	**D**	**N**	**A**	**SA**

1. A bank's customer base grows as a result of digital banking					
2. Commercial bank's transaction costs are reduced via digital banking					
3. Customer proximity is increased via digital banking					
4. For commercial banks, digital banking boosts productivity					
5. Bank profitability has greatly increased as a result of digital banking					
6. Real time transactions are now possible for commercial banks thanks to digital banking					
7. Decreased search and market costs, which are primarily related to ATMs and Smart Cards					
8. As a result, online banks have been created					
9. It has diminished the significance of a larger branch network					
10. It has permitted extended banking hours					
11. It has made customer's lives easier					

SECTION 4: Mobile Money

Please tick the appropriate response in the boxes provided on the opportunities and challenges of mobile money in the Zimbabwean Commercial banks

Key: Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (SA);

Statement	SD	D	N	A	SA
Threats					
1. Mobile money is used more by informal savings groups than by commercial banks.					

2. Unlike the traditional commercial banks, it lessened the requirement for actual banks					
3. Wide branch networks, a source of competitive advantage for commercial banks, have been eliminated					
4. Compared to traditional or conventional commercial banks, it promoted financial inclusiveness					
5. Heightened rivalry with commercial banks					
6. Compared to commercial banks, it brought convenience					
7. Pseudo-banking was introduced					
8. decreased transaction costs as compared to commercial banks					
Opportunity					
1. Payment systems interference					
2. Deposits mobilised than the traditional or conventional commercial banks					
3. Using mobile money improves the multiplier impact					
4. A way to move toward a cashless society					
5. Enhancing the banking industry					

SECTION 5: Regtech

Please tick the appropriate response in the boxes provided on the threats and opportunities presented by Regtech on commercial banks.

Key: Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (SA);

Opportunities	**SD**	**D**	**N**	**A**	**SA**
1. Regtech assist to enhance fraud prevention					
2. Regtech help to improve Financial stability					
3. Prudential safety and soundness (AML, KYC) has been enhanced					
4. Regtech has brought consumer safely and market integrity(honesty)					
5. Regtech has led to equal opportunities					

6. Regtech has brought flexibility and innovation in the financial markets						
Threats						
1. Regtech has led to higher compliance standards						
2. More market competition has been enabled by the use of Regtech						
3. Regtech has brought significant costs of standardising systems used by banks						

SECTION 6

What are other opportunities and threats presented by Fintech to Zimbabwean commercial banks?

Opportunities

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Threats

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How are banks coping up with the changes brought about by fintech

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What is the reaction of banks towards Fintech.

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Interview Guide

1. What do you understand about FinTech?
2. What do you think are the major motivators of FinTech development in Zimbabwe?
3. How would you commend on the effect of Fintech on commercial banks?
4. a) What is the effect of digital banking on the performance of Zimbabwean Commercial banks?

b) Do you see it as a complement of a competitor to commercial banks?

5. a) What is the effect of mobile money on the performance of Zimbabwean Commercial banks?

   b) Do you see mobile money like Ecocash, Telecash and One money as threats or complement to commercial banks?
6. What are the opportunities and dangers presented by FinTech to Zimbabwean commercial banks?
7. How banks are reacting towards Fintech