Performance Evaluation of FinTech Applications in Emerging Market Economies: A case of TelPay

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Finance and Investments

By

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20 January 2022

Declaration

I, Sibusiso Kenneth Mvelase declare that the research report titled Performance Evaluation of FinTech Applications in Emerging Market Economies: A case of TelPay; is my own, except where otherwise indicated and acknowledged. It is submitted for the degree of Master of Management in the University of the Witwatersrand, Johannesburg. This thesis has not, either in whole or in part, been submitted for a degree or diploma to any other universities.

_____ 20 January 2022

Signature of candidate Date

Acknowledgements

I would like to thank the Almighty God for guidance, strength, power of mind and Skill to be able to complete this research. I would like to express my sincere gratitude to my supervisor Dr. Euphemia Godspower-Akpomiemie for continuous support, for her patience, motivation, enthusiasm, and immense knowledge in the field of finance. Her Guidance helped me during the time of research and writing of this thesis.

In addition, a thank you to the team at Wits Business School for providing continues support thought the Masters of Management finance and Investment.

I thank my fellow syndicate group 7 members for stimulating discussions, for sleepless nights we were working together to meet deadlines and for all the fun we have had in the last year.

I would like to thank everyone that took part in the research from Zambia, Kenya and Ghana to provide valuable information to be able to conduct this research in a successful manner.

Last but not least , I would like to thank My family : My mother Masise Mvelase and my wife Mashudu Mvelase, My children Buhlebethu, Sihle, Nkosana, Sifiso and Minenhle for supporting me spiritually and academically throughout my life.

Dedication

I dedicate this research to my family and friends. A special feeling of graduate to my loving wife Mashudu Mvelase, my Children Buhlebethu, Sihle, Nkosana, Sifiso and Minehle, whose words of encouragement and push for tenacity kept me going. I also dedicate this research to my business partner Gopal Sharma who continued to support me through my journey to build financial inclusion products for the emerging markets. I dedicate this work and give a special thanks to the TelPay team for continues support throughout this project.

Abstract

The financial industry is at the receiving end of the anxiety that comes with the influx of FinTech, especially in the emerging market economies. This is because FinTech is globally restructuring the perception of people and businesses towards financial services product and services. There are so many benefits attached to FinTech (including ability and efficiency in addressing transaction cost and information asymmetry while providing financial services) that have escalated its global acceptance and usage. Despite the identified benefits of FinTech most academic and policy research focus more on FinTech disruption of the financial institutions, rather than the performance of the FinTech start-ups. Though the research on FinTech disruption requires attention, it is also vital to assess the efficiency of the FinTech companies already in operation, especially in Africa where technological infrastructure could be on a minimal supply.

Therefore this study assesses the performance of FinTech, focusing on TelPay, a FinTech start-up that is spreading fast within the African markets, with the intension of getting into other emerging market economies. TelPay users (15) and developers (2) were interviewed, analyzed through content analysis using word could. The word cloud clearly show following characteristics of TelPay; affordability ease of usage, good performance, flexibility, fast, loan, credit, etc. This result posits that people were attracted to TelPay due to its affordability, along the line, they found that the app is unique, the process is easy and flexible, and the functionality is efficient and precise.

The result also shows that TelPay has been an enabler of financial inclusion in the three countries of its current operation. According to the respondents, TelPay has created a door-way to financial inclusion in their countries, by creating inclusiveness to the low-income earners, through access to credit. The study also concluded that TelPay will definitely survive in Africa, especially if it maintains and/or improves on the quality of the services it currently offers.

Content

Chapter 1. Introduction

1.1 Introduction

This section introduces this study by providing the research background, motivation for the study, as well as the objectives and the problems to be addressed. The significance of the study is also proposed, when the proposed findings of the study are linked to the segments/population in the emerging markets that will benefits from the outcome of this study. The research outline is also provided, detailing the chapters of the study and their expected contents.

1.2 Background of the Study

The global economy is experiencing an exciting era in the modern history of financial services, where financial technology (FinTech) has attracted the attention of both private sector and the government in the recent time. The financial industry is at the receiving end of the anxiety that comes with the influx of FinTech, especially in the emerging market economies. This is because FinTech is globally restructuring the perception of people and businesses towards financial services product and services. This drastic change in perception will definitely affect understanding, acceptance and use of financial products and services in the future. According Arslanian and Fischer (2019), acceleration of technology has created an enabling environment to attract redesigning and restructuring the products and services of financial institutions, as well as the process of delivering the products and services to the final consumers.

FinTech is a conglomerate of finance and technology, and has been defined by so many authors, but the meaning has never been far from the combination of finance and technology. Tan, Purba, and Widjaya (2019) defined FinTech as an industry of financial technology-based businesses that combine business, manpower and financial forces

with technology experts, governments, industry leaders, and research institutions to come up with new business model to aid financial operations. The finance-technology focused start-ups, on one hand innovate new financial products and services, on the other hand modify existing financial products and services being offered by traditional financial institutions. More so, FinTech includes all technical process and procedures for both upgrading existing financial software and programing an entire new financial software, which in turn affect financial service delivery.

The surge in establishment of FinTech start-ups was escalated after the global financial crisis of 2008. Many financial experts lost their jobs due to the aftermath of the global financial crisis therefore resorted to seeking new opportunities by undertaking entrepreneurial initiatives. However, such entrepreneurial initiative of an ex banker is definitely to establish something to showcase a long term gained financial knowledge. Therefore, many FinTech companies were driven by bankers who had found themselves unemployed post the financial crisis and found creative ways to use their financial services skills (Haddad & Hornuf, 2019)

Secondly the surge in FinTech influx is attributed to the stringent regulations placed on financial institutions, both to curb the effects of the financial crisis as well as to prevent any other looming crises. Based on this, FinTech ventures developed products that are outside the scope of financial regulators (Cumming & Schwienbacher, 2018). Millennials, have contributed to the surge and growth of FinTech, as they prefer, demand, and rely mostly on products and services that are convenient, fast and timeous (Cumming & Schwienbacher, 2018; Zetzsche, Buckley, Barberis, & Arner, 2017). Some of the products and services FinTech has brought into the financial services industry include, crowdfunding, payment systems, lending system, insurance services etc. Some of these products and services have become more attractive relative to incumbents' provisions.

Based on the shift to the FinTech applications (Apps) and business models, many financial Apps have been established in the globe, of which emerging markets are not exception. The purpose of this study is to assess the performance of these financial Apps in African/emerging market economy, focusing on TelPay. The TelPay Group is a FinTech software development company, which was established in 2017 with a mission to provide mobile device (cell phone) financing to the mostly unbanked population, especially in Africa and emerging market. TelPay provides automated App for users to obtain devices on credit and pay in instalment later. The users control the installation, the processes, and the operations of the App, which creates flexibility and ease of usage. . The major aim is to enable African population to afford and have access to smartphones they ordinarily, would be ineligible to obtain financing for. TelPay provides access to, and payment for mobile smartphone at payer's convenience and affordability.

This App has captured, and have been in operation in some African countries, especially in Zambia, Ghana, and Kenya. There has also been a move to establish TelPay in other emerging market countries, therefore, the review of TelPay performance is ideal.

1.3 Problem Statement

The role and contribution of financial institutions to the economic growth became much vital as well as a global concern after the global financial crisis (Dietz, Khanna, Olanrewaju, & Rajgopal, 2016). The influx of FinTech companies become more prominent and acceptable due to their ability and efficiency in addressing transaction cost and information asymmetry while providing financial services. There has also been an argument that FinTech companies have the tendency to reduce economic risk and cost through financial and technological innovations (Alt & Puschmann, 2012).

Despite the identified purposes and benefits of FinTech companies, not many academics, practitioners, and policy debates have been initiated on the performance of Fintech companies or Apps already in operations. Instead there has been much hype on the disruption of the financial services industry by the FinTech start-ups (Mills & McCarthy, 2017). The major issues at the heart of current academic, practitioner, and policy debate on FinTech (Arner, Zetzsche, Buckley, & Barberis, 2017; Chiu, 2016; Gurdgiev, 2016; Zetzsche et al., 2017) is whether these FinTech start-ups will eventually disrupt the traditional banking institutions. This phobia is attributed to the way digital media has disrupted traditional publishing and advertising/marketing industry. Especially, if the entrants will negatively affect banks' profitability, just as online education is eroding higher education industry profits, especially in the era of Covid-19 pandemic.

Though the research on FinTech disruption is necessary and requires attention, it is also vital to assess the efficiency of the FinTech companies already in operation, especially in Africa where technological infrastructure could be on a minimal supply. The findings on the efficiency of FinTech start-ups in Africa will definitely enable policy makers on the decision of how FinTech companies can be allowed to operate and the mode of regulation to be proposed on that regard.

1.4 Motivation

There are so many benefits attached to FinTech that have escalated its global acceptance and usage, with Africa not an exception. According to Yazici (2019), FinTech has been vital component of economic development, which has attracted foreign direct investment, especially for the emerging market countries. Within the last five years, FinTech start-ups has attracted over US $100 billion on investment.

These global contributions are attributed to the fact that majority of the institutional players use FinTech to deliver essential financial services and products to all parts of society at an affordable price, accompanied with convenient and efficiency. According to Lerner and Tufano (2011), FinTech had advanced and created Bank-FinTech collaboration, which is unavoidable, as well as desirable. More so, Zavolokina, Dolata, and Schwabe (2016) argues that FinTech has enabled and promoted transformation that positively influences products and services that empower financial consumers by providing them with opportunities to access affordable, efficient and convenient products and services.

Based on these identified benefits and contributions of FinTech, it is vital to assess the performance of FinTech Apps that are flooding the financial market, especially in the emerging market context. The essence of this assessment is to ensure consistency of these attributed benefits to FinTech Apps, and to eliminate, regulate, modify and/or discontinue any Fintech start-up that will erode the identified benefits attributed to FinTech. This study therefore focused on TelPay, a FinTech start-ups that is developed in Africa and spreading fast within the African markets, with the intension of getting into other emerging market economies.

1.5 Research Objectives

Due the identified concerns on, and benefits from FinTech start-ups, the major objective of this study is to review the performance of FinTech in Africa, focusing on the three countries that have adopted the use of TelPay. Therefore the objectives of this study include, to critically review and assess the operations and performance of FinTech start-ups in Africa, using the case of TelPay. The essence of the assessment is to establish if these identified and attributed benefits of FinTech in the African/emerging market context, taking note of the level of infrastructure and other

developments in the African continent. Secondly to identify and examine the appropriate approach to channel the identified benefits to the population in most need of them. Thirdly to assess the contribution of TelPay to the financial inclusion landscape of Africa. To achieve the stated objectives, the following questions are addressed:

- What is the level of performance of TelPay FinTech start-up in Africa?
- Is TelPay accessible to the population in need of it?
- Has TelPay created or contributed to financial inclusion in Africa?

1.6 Significance of the Study

FinTech has attracted researchers' attention since its influx into the financial system. The benefits from Fintech research can never be over emphasized, however, each benefit is unique to its area of focus or research interest. The findings from this research will enable FinTech developers to understand the type of FinTech business model that is suitable or more beneficial to a particular target population. The findings will also enable the policy makers and regulators of financial system to understand FinTech's performance and gauge how to leverage the financial system, either to be more liberal to the influx of FinTech or to tighten the belt. Thirdly, FinTech consumers and potential consumers will be able to understand the extent of FinTech's contribution to the ease of access to, and convenient use of FinTech applications. Most importantly, the findings of this research will enable TelPay developers to assess and understand, how to penetrate to other African/emerging market countries.

1.7 Scope of the Research

FinTech Apps have not fully adopted around the globe, especially in African countries. TelPay App has only be established and adopted in three countries of Africa, with the push to expand to other African and emerging market countries. This research is specifically focused on the three countries that have fully adopted TelPay, to examine the performance of TelPay so far. However, the findings will establish the base and intention to move and expand to TelPay to other African countries.

1.8 Research Outline

The chapter one of this research study provides the introduction, research motivation, objectives, as well as the significance of the study. Chapter two presents detailed literature review in the context of FinTech and its performance, especially in the Africa context. The theory that are adopted in this study are also detailed in chapter two. Chapter three elaborates the research methods, research design, and process to be adopted to achieve the research objectives. Chapter 4 presents the result from the data analysis, as well as interpret the results gathered from the research participants. Chapter five presents the conclusion of the research study, and make recommendations based on the research findings.

Chapter 2. Literature Review

2.1 An Overview of FinTech

Several definitions of financial technology (FinTech) exist, with different views from different authors, but related to same concept of a merger between finance and technology. According to Arner, Barberis, and Buckley (2015), FinTech is viewed as the use of technology to provide and facilitate the sale of financial products and services. I. Lee and Shin (2018) define FinTech as a new era of Information Technology (IT) induced financial services, combining IT and other financial services, such as payment, credits (lending), crowdfunding, remittances, assets management among others. This broad based financing facilitates incorporation of broader users of financial products and services, thereby leading to an increased financial inclusion (Arner, Buckley, Zetzsche, & Robin, 2020; Philippon, 2019).

This is in line with Vijai (2019), who infers that FinTech is an emerging concept, but has provided alternative banking, non-banking finance services, and business solutions, which aim to provide more effective financial products and services at an affordable cost. Another definition is given by Zavolokina et al. (2016), where FinTech is viewed as "a conjugal union between finance and technology", where one cannot exist without the other. Because this relationship yield and develop new products, services, processes, and new companies, it is referred to as an innovative hub (Frame, Wall, & White, 2018).

Financial Stability Board added that FinTech is financial products and services innovations enabled by the IT, which leads to development of new business models with a significant impact on the financial industry (FSB, 2017; Ramlall, 2018). On a broader terms, Gimpel, Rau, and Röglinger (2018) recommends that FinTech should be viewed on how digital technologies such as the internet, big data analytics, mobile computing, cloud computing, are being used to help, innovate, or disrupt financial services. While the broad term "FinTech" can be used to describe a wide variety of

technologies as suggested by Gimpel et al. (2018), it is vital that differentiation is made among each segment of this digital technology, and more detail is provided for each one. It is based on this argument that this research study aims to focus on TelPay, its performance, target population, contribution in the emerging market financial market space.

2.2 Evolution of FinTech

Information technology has a resilient potential for transformation. The transformation was first noticed in the electronic market, which has evolved over the years and changed almost the entire industry (Alt & Puschmann, 2012). Some of the examples of this transformational moves are witnessed in travel industry where reservations system is implemented online, the ordering system in retail , home shopping system, as well as the electronic stock market in the financial industry, pharmaceutical industry, and other industries (Malone, Yates, & Benjamin, 1987). On the other hand, life video streaming where the media, computer and communications converged, has replaced the traditional distribution of contents through books, CDs and DVDs (Allon & Gurvich, 2007). Most recently, even in the football industry, IT transformation has introduced the use of goal line technology in deciding goals rather than physical and unreliable process through humans.

From the financial sector point of view, banks have always been in the application of technology (computer) to offer products and services. However, the last few decades have experienced rapid innovation in the financial industry, which started in the 1970s with automated teller machine (ATM), and gained penetration globally in the 1980s. Second wave of transformation was the introduction of e-finance, which emerged in the 1990s. E-finance is defined as all forms of financial services rendered through electronic means, including internet banking (I. Lee & Shin, 2018). The speedy penetration of World Wide Web (www) paved the way for most e-finance (electronic

transactions), including banking, insurance, and stock trading, which facilitates financial transactions without much hurdles. E-Finance allows individuals, businesses, organizations to have access to their accounts, carry out transactions, and obtain financial information without being in physical contact with the financial firms. In the 2000s, e-finance has gained much ground, gaining more access to remote areas, increasing access to internet banking, increasing the use of debit cards etc.

Some of the benefits of e-finance include lower operational cost, smoother communication, real time information, shorter turnaround time (Sathye, 1999). Just like e-commerce, e-finance has led to reduction of bank branches and physical locations (I. Lee & Shin, 2018). All these changes have pushed for the replacement of traditional financial service delivery strategies towards the new internet based versions (Alt & Puschmann, 2012; I. Lee & Shin, 2018).

Though banks are always in the forefront to technological adoption, but they have not been deep in the technology development, with a rapid wave and adoption. In the mid-2000s, there was increase in the growth of smartphone usage, which facilitated the mobile finance, which includes mobile payment and mobile banking (an extension of e-finance), where banks activate the use of mobile technologies (smartphones) to initiate and complete financial transactions such as payment for bills, money remittances etc. Figure 2.1 gives a snapshot of number of smartphone users in China alone.

Figure 2.1: Number of Smartphone users in China
Source: Satistica 2021

With the combination of e-finance and mobile technologies, non-bank financial technological start-ups (FinTech) innovation emerged. In the wake of the most recent global financial crisis of 2007/2008, banks struggle to get back to their feet, giving room for non-bank financial technological start-ups (FinTechs) to become more prominent. More so, financial experts who lost jobs due to the aftermath of the crisis, pulled their energy and expertise to the non- bank start-ups (Hill, 2021). These start-ups use technology to provide variety of financial services, including payments, lending, wealth management, crowdfunding etc., at a more beneficial range than the e-finance and the traditional banks. For instance, PayPal enables digital and mobile payments between consumers and merchants globally through technology, so also LendingClub facilitates peer to peer lending through a web based platform (Hill, 2021). FinTech start-ups combined internet technologies, social networking, social media, big date analytics to become a data provision solutions (I. Lee & Shin, 2018). This rapid innovations and

technological development has weakened the normal functions of banks (credit creation and distribution) (King, 2014), which has stirred research on the level of disruption of the traditional banking industry by the FinTech start-ups (Mills & McCarthy, 2017; Zalan & Toufaily, 2017).

Over the years, FinTech landscape continue to evolve, by the third quarter of 2016, the global investment in FinTech was around $21 billion, while at the end on 2018 it has risen to $55 billion making more than a ten-fold increase from 2013 (FSB, 2017)[1]. Majority of these investment occur in the United States (US) and Asia, mostly China, where large and successful FinTech start-ups have been established, developed and been in operation (see Figure 2.2). This huge jump in the investment figure was led by a surge in funding in China (deals in China $25.5 billion), of which $14 billion funding was from Ant Financial. There were also more gains in several other markets such as Canada, Australia, Japan and Brazil as investors placed larger bets in more matured start-ups.

[1] https://newsroom.accenture.com/news/global-fintech-investments-surged-in-2018-with-investments-in-china-taking-the-lead-accenture-analysis-finds-uk-gains-sharply-despite-brexit-doubts.htm

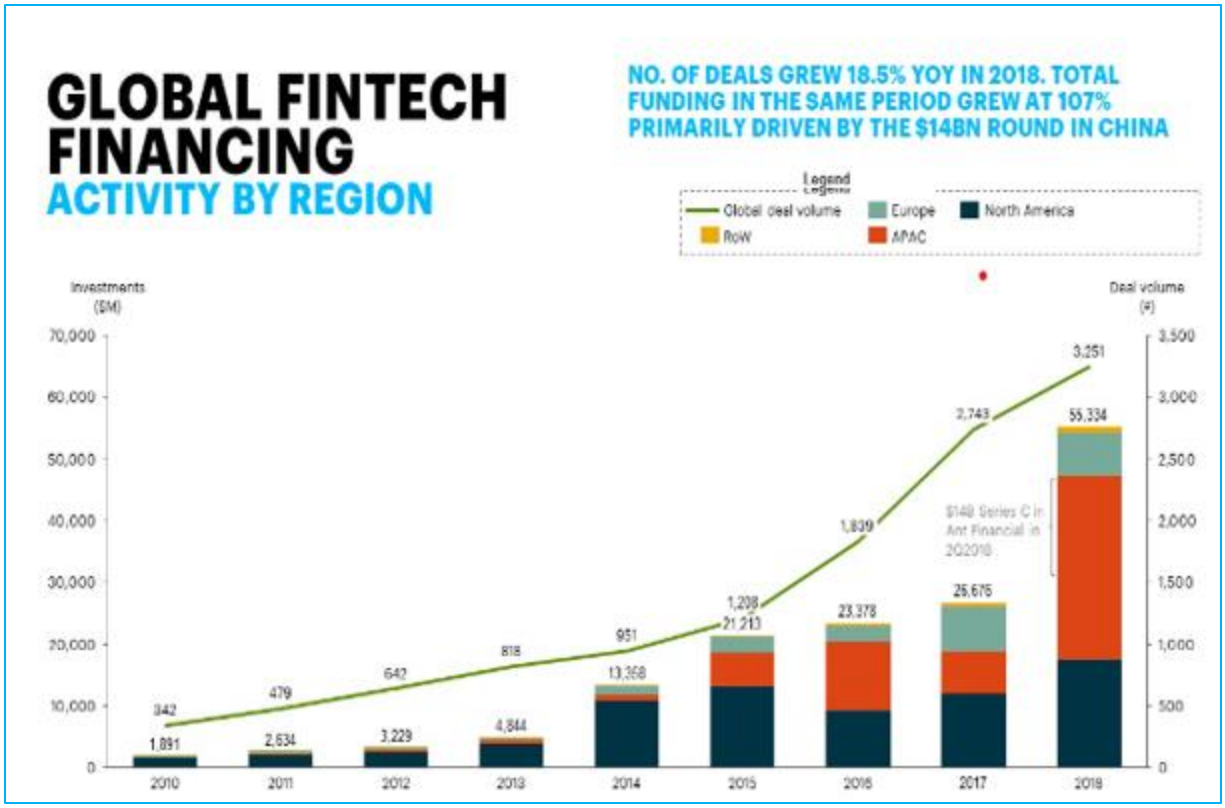

Figure 2.2: Global FinTech financing, activities by Region

Source: Accenture 2018: *Global FinTech Investments Surge*

From Figure 2.2, it is also noticed that the number of FinTech deals significantly increased from 2743 in 2017 to 3,251 in 2018 globally, which is approximately 19% increment. This increment is due the attractiveness of FinTech to venture capitalists, who combed the entire globe for newest technologies in payments, lending, wealth management, though new investment also go into insurance space (See Figure2.3).

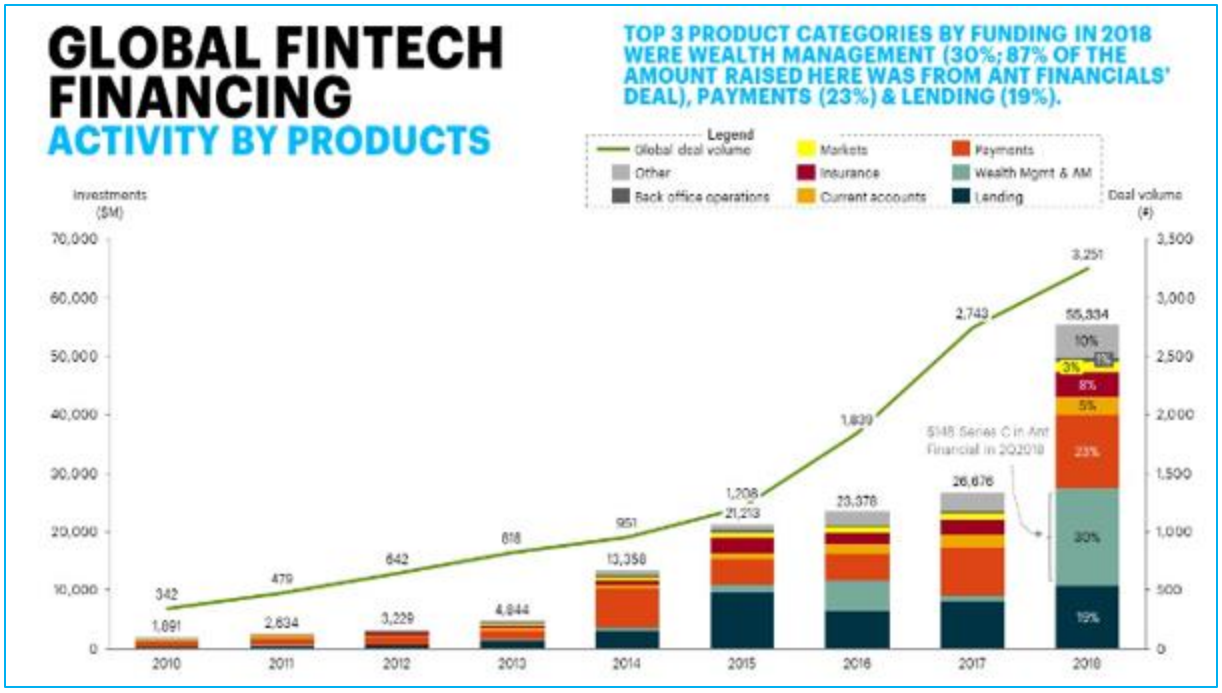

Figure 2.3: Global FinTech financing, activities by Products

Source: Accenture 2018: *Global FinTech Investments Surge*

Despite there is limited evidence on the risk imposed in financial stability due to FinTech developments, the financial system landscape is changing drastically, which calls for an early decision to be made concerning the influx of FinTech start-ups. Such decision should be based on the performance, benefits, (also inherent risk) to be derived from these start-ups, which include among others, financial inclusion. Therefore, this study is set out to review the performance of TelPay, a FinTech App focused on emerging market.

2.3 Empirical Literature Review

There are few empirical literate on FinTech covering its business model, which includes Payment Business Model, Wealth Management Business Model, Crowdfunding Business Model, Lending Business Model, Capital Market Business Model, Insurance Services Business Model, and Other Business Models. The FinTech ecosystem has also

been extensively reviewed empirically, which has details of the systems required for FinTech to function effectively

2.3.1 Fintech Business Model

According to Accenture report 2018[2], more than $55 billion has been invested into different FinTech business models, including lending, payments, wealth management, insurance, capital market, crowdfunding, back office operations, current accounts etc. Funds are invested in these business models based on their attractiveness and revenue generations, where more than 30% of the investment is lumped in wealth management, 23% in payment systems, and 19% in lending. According to I. Lee and Shin (2018), six major FinTech business models have been identified to be operated and implemented by the FinTech start-ups, they include payment, wealth management, crowdfunding, lending, capital market, and insurance services.

2.3.1.1 Payment Business Model

This business model is relatively simple and are mostly used compared to others. FinTech operators acquire customers easily at relatively lower cost. This model can be in two forms: the consumers and retail payment, and wholesale and corporate payments (Mellon, 2015). Some of the products under payment include mobile wallets, peer-to-peer (P2P) mobile payments, foreign exchange and remittances, real-time payments, and digital currency solutions (Li, 2016). Some identified approaches to mobile payment include the use of barcode/QR code, charge to phone bill, near filed communications (NFC, e.g. google wallet, Apple pay, Samsung pay), mobile phone, card reader, and direct mobile payment.

[2] https://newsroom.accenture.com/news/global-fintech-investments-surged-in-2018-with-investments-in-china-taking-the-lead-accenture-analysis-finds-uk-gains-sharply-despite-brexit-doubts.htm

2.3.1.2 Wealth Management Business Model

This business model is comprised of the automated wealth mangers, refer to ad robo-advisors. It is mostly used by investors to get financial advice instead of employing human financial advisors. Wealth management business model is relatively cheaper, as the cost could be a fraction of a fee charged by financial advisers (Sanicola, 2016). They make use of algorithm to combine and classify asset classes according to their risk exposure. Examples of robo-advisors Apps include Betterment, Wealthfront, Motif, and Folio.

2.3.1.3 Crowdfunding Business Model

In crowdfunding business model, a network of people is formed and connected, to control the new product of group lending. It can be used to raise funds for charity, investment, venture capital or for a particular project. Three parties are involved in crowdfunding: the initiator, who needs the funding, the contributor who wishes to, or attracted to the fund raising; and the moderator (could be an organization), who facilitates the fund raising. Crowdfunding could be in the form of donation-based, reward-based, or equity-based funding. As the names imply, donation-based and reward-based funding are mostly used for charity contributions or project delivery and executions, while equity-based funding is used to raise funds for investments especially for entrepreneurs; and small and medium enterprises (SMEs).

2.3.1.4 Lending Business Model

This is another FinTech business model, where FinTech start-ups match the lenders and borrows at lower fees. Examples of this model is P2P consumers lending and P2P business lending. This model is related to crowdfunding, except that it is not expected to involve a pool of or group of individuals. Secondly the primary purpose of

crowdfunding is mostly for projects, charity, etc., while the primary purpose of P2P lending is for personal debt consolidation and credit card borrowing (Zhu, Dholakia, Chen, & Algesheimer, 2012). Currently, unlike banks, FinTech start-ups are not subjected to regulations to meet up with capital requirements before engaging in P2P lending (I. Lee & Shin, 2018).

2.3.1.5 Capital Market Business Model

This spectrum of Fintech business model cover all aspect of capital market, including investment, risk management, trading, and foreign exchange, however, trading dominates this business model. The model connects investors and traders together, where they share knowledge of investment, make order, buy and sell securities/commodities, also analyze risk associated with trading. It also enables users to view life prices, send and receive order in various currencies and in their mobile devices.

2.3.1.6 Insurance Services Business Model

In this model, FinTech start-ups deploy the use of big data analytics to analyze risk exposure of insurance clients. This enables insurers to develop and offer products that meet individual clients' needs. This process has been embraced by traditional insurance companies, where they deploy the use of data to group clients into different risk brackets. This is used in car, house, and healthcare insurances.

2.3.1.7 Other Business Models

Beside the six identified FinTech business models by I. Lee and Shin (2018), there are other FinTech business models which are classified together as "other business models" (See figure 2.2, 2.3 and 2.4). Funds have also been invested in those models where they have attracted 10% of the $55 billion investment as at 2019 (See figure 2.3). It could be

argued that TelPay FinTech App belongs to this other block of business models, also shares a portion of payment and insurance business models. TelPay FinTech App provides IT and infrastructure financing, as well as providing insurance coverage for the IT. This function places TelPay App on the blocks of payment, insurance and other business models. In terms of classification of business models by economic function, TelPay functions are classified udder the payment and lending function, and insurance. This is because TelPay innovation is traced under smart contracts, digital ID verification, as well as under mobile and web base financial services (See Figure 2. 5). More so, as an insurance business model, TelPay deploys the use of big data analytics to analyze risk exposure of its clients. This process helps TelPay to identify qualified clients, as well as helps them to group clients according to their risk exposure, and to determine which level of device is suitable for different groups of clients.

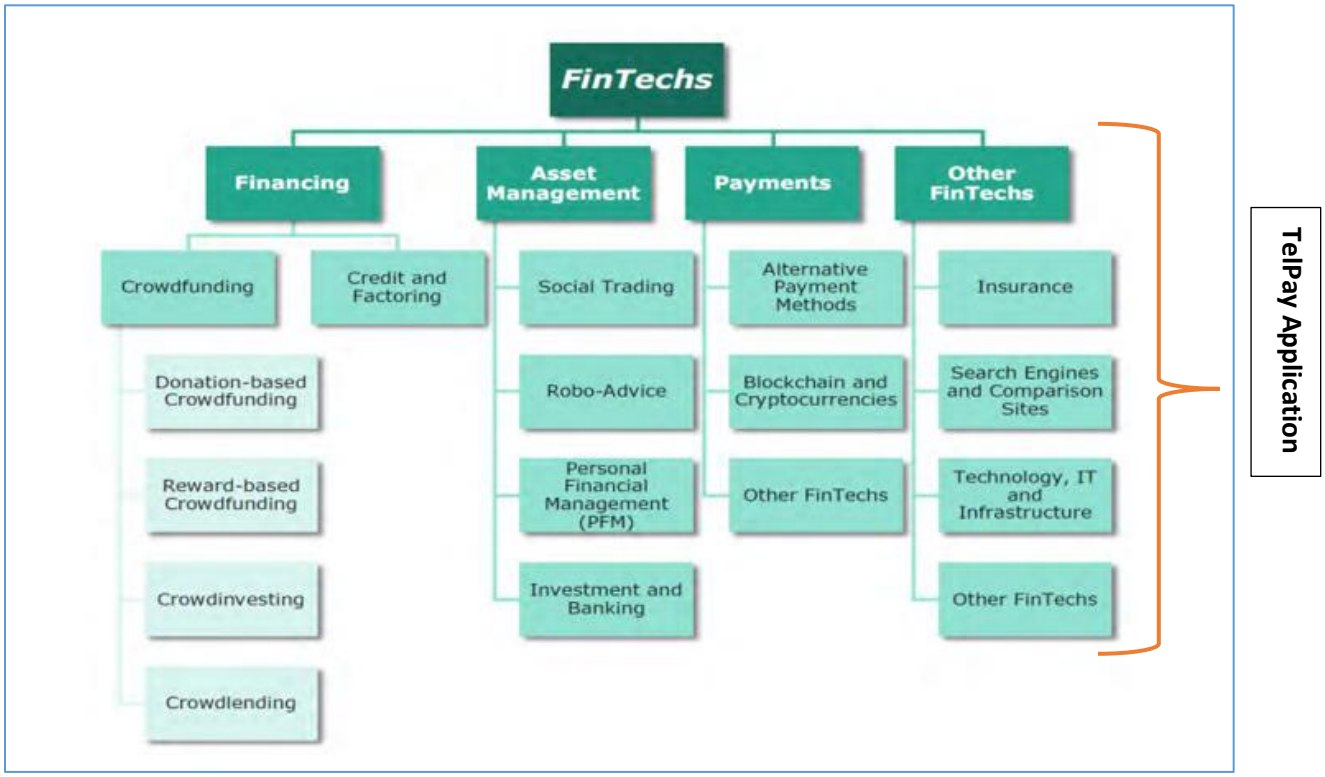

Figure 2.4: Summary of FinTech Business models

Source: *Tan, Purba, and Widjaya 2019*

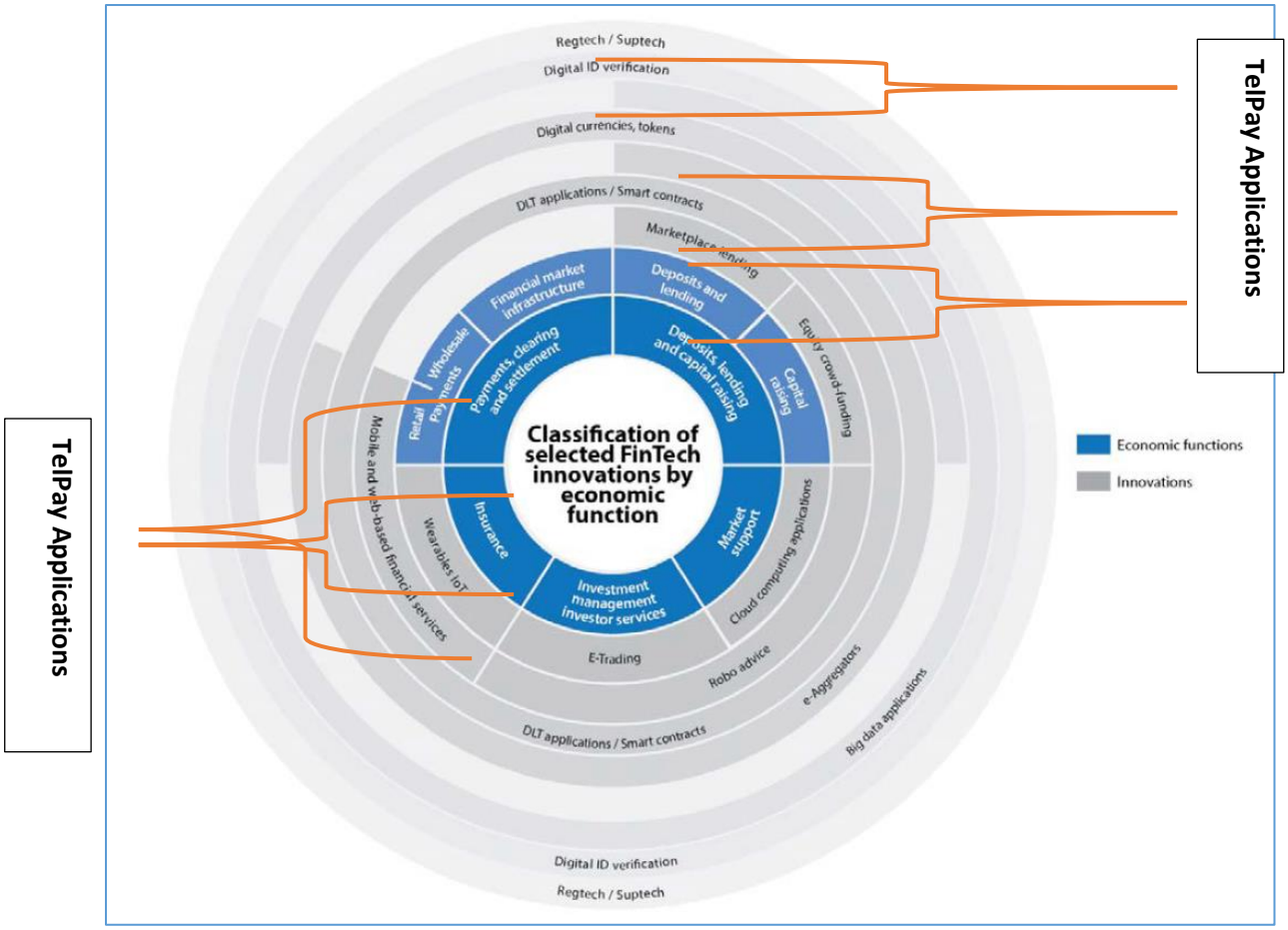

Figure 2.5: Stylized classification of selected FinTech innovations (business model) by economic and innovation functions

Source: *Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities' Attention (June 2017)*

2.4 FinTech Ecosystem

Moore (2006) defines ecosystem as interconnectedness of organizations and individual as an economic society, of which disconnection of this interconnectedness will create malfunction of the society. This interconnectedness creates and maintains valuable products and services for consumers who are ecosystem members and those who might be not. These ecosystem members evolve their skills and responsibilities over time for effective functioning of the society.

In FinTch world, an ecosystem exists, which coordinates the effective functioning of the FinTech business models. A stable and connected FinTech ecosystem is vital in the growth of the FinTech industry. After a rigorous research, Zalan and Toufaily (2017) and I. Lee and Shin (2018) independently identified five FinTech ecosystems that if well connected will promote the functionality of the FinTech industry. The identified ecosystems are as follows.

FinTech start-ups, which includes the payment system, wealth management, lending, crowdfunding, capital market, and insurance FinTech companies. Second, the Financial customers, which included individuals and organizations, third, the Technology developers, including Big data analytics, cloud computing, cryptocurrency, and social media developers. Forth, the traditional financial institutions, including traditional banks, insurance companies, stock brokerage firms, and venture capitalists. Finally, the Government, including financial regulators and legislatures who are to provide policies and procedures to guide the FinTech ecosystem.

Both Zalan and Toufaily (2017) and I. Lee and Shin (2018) posit that for an effective functioning of the FinTech industry, these ecosystems must be functional and work together. However, in emerging market economies that houses TelPay FinTech App, some challenges exist that impede the effective functionality of these ecosystems. Some of the challenges include; lack of access to finance for FinTech start-ups which delays FinTech development, lack of trust in the financial system. Lack of awareness of FinTech business models by the financial consumers. More so, lack of availability of talented and skilled IT teams, is a drawback in FinTech development, especially in emerging market economies. Most importantly, banks still feel sceptical to accept the influx and disruptive nature of FinTech start-ups, therefore there could be difficulty in Bank-FinTech collaboration.

Finally current laws and regulations for the financial sector may not be compatible with FinTech innovation and operations. Because, it could be difficult to regulate a technological based innovation with regulations proposed and implemented on black and white platform. Therefore there could be a need for a new regulatory framework to align with innovation and solutions, also to align with habits of the new technological age.

2.5 Theoretical Framework

2.5.1 Introduction

The emergence of FinTech is one of the proofs of the recent escalation in digital transformations (DT), which has become an important phenomenon in information science (IS) research. Digital Transformation comprises of the intense and passionate changes taking place in the society, organizations, as well as individuals' approach and response to products/services through the use of digital technologies (Agarwal, Gao, DesRoches, & Jha, 2010; Majchrzak, Markus, & Wareham, 2016).

At organizational level, it has been argued that organizations should device means to initiate/innovate technologies, adopt technologies, as well as means to develop policies and strategies that enable them to accept the implications of digital transformation that comes from the technology adoption (Hess, Matt, Benlian, & Wiesböck, 2016). Such initiative, innovation, and adoption of new technology, along with effective strategies and policies of adoption drive better operational performance of organizations (Hess et al., 2016). However, at the individual/customer level, research has shown that technology adoption by customers leads to the organizational adaptation of the technology (Vial, 2019). Most importantly, there are factors that affect individuals' technology adoption, which then determines the level of organizational adaptation of

technology (Hale, Householder, & Greene, 2002; Harz & Vesper, 2013; Y. Lee, Kozar, & Larsen, 2003; Manstead & Parker, 1995; Peek et al., 2014).

This research is based on two theoretical models; digital transformation model and technological acceptance model. TelPay is a FinTech organization that based on digital transformation by first making the technology available to individuals/ customers, which are also eventually adopted at organizational level, and would later lead to better operational performance of both the organizations and society at large.

2.5.2 Digital Transformation (DT) Model

Digital transformation has been defined by many authors (Berghaus & Back, 2016; Demirkan, Spohrer, & Welser, 2016; Kane, Palmer, Nguyen-Phillips, Kiron, & Buckley, 2017; Legner et al., 2017; Morakanyane, Grace, & O'Reilly, 2017). According to Demirkan et al. (2016), its defined as transformation of business models, processes, activities and capabilities due to technological changes across business and society. It is the creation of values through customer experiences, business processes, and business models as a result of technological changes (Morakanyane et al., 2017). For the purpose of this study, the definitions given by Legner et al. (2017), Berghaus and Back (2016), and Demirkan et al. (2016) is adopted. This is because these authors did not limit digital transformation to only businesses, rather they focused on the efficiency, innovations, enhancements on products and services due to influx of information technologies and digital capabilities, as well as the impact of these transformations in the society at large. However, this study is on the performance of TelPay, a FinTech application that focus on the availability and efficient use of mobile technology for ease of, and cost effective financial transaction. More so, how TelPay has contributed to society benefit through financial inclusion.

According to Digital transformation model, there are four phases of digital transformation; namely (see figure 2.6):

1. First, availability of the technology
2. Second, adoption of the technology by the consumers/customers
3. Third, adaptation to the customers' technology adoption by businesses
4. Finally, more and greater institutions (regulators, government) integrate technology into business structures and models

The first two phases of digital transformation model (availability of the technology and customer adoption) are the two key drivers of Digital transformation, which led to adaptation by businesses, and finally attraction of institutions.

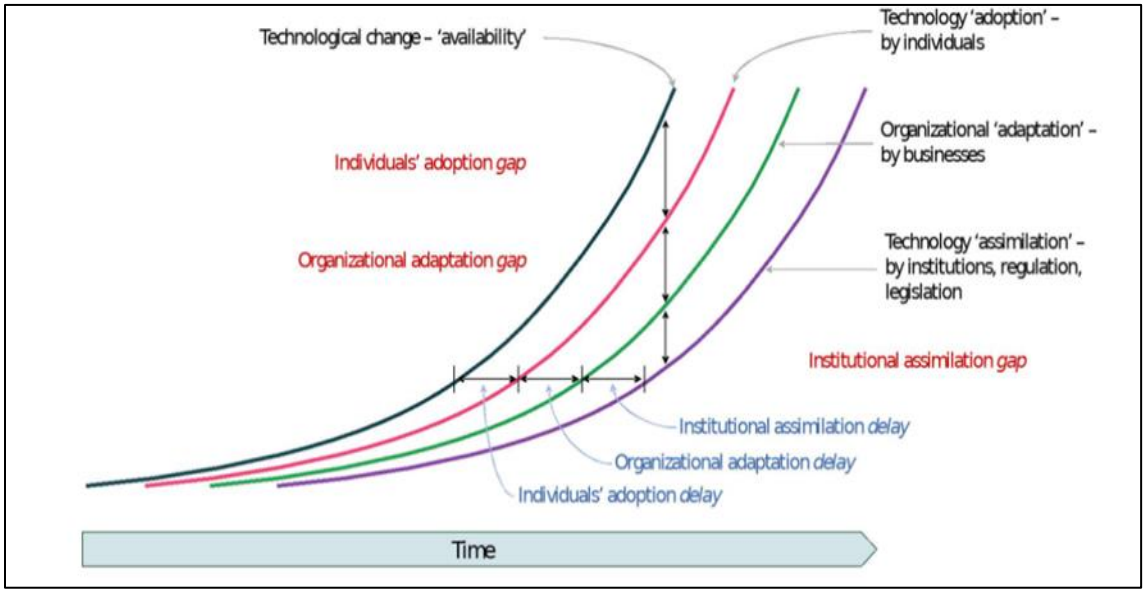

Figure 2.6: Individual, organizational and social challenges of technological change

Source: *Armstrong (2021) and (Kane et al., 2017)*

The success of digital transformation depends on how quickly organizations and institutions adapt to customer's technology adoption. In the case of FinTech applications, it is therefore imperative that FinTech start-ups speedily position their products and services to respond to customer adoption. TelPay as a FinTech application, which is the focus of this study, has successfully implemented the first

three phases of digital transformation model, where the technology has been made available, secondly, customers have adopted the technology. Thirdly, TelPay as an organization has adapted to the customers' adoption of the available technology. The final phase is one of the significance of this study, where the attraction of the government will be drawn to the effectiveness and efficiency of TelPay application. Therefore, the digital transformation model is suitable to underpin this study.

This therefore speaks to the objectives of this study which seeks to evaluate the performance of TelPay application and its contribution to financial inclusion in the three countries of its current operations. The findings will excavate the fourth phase of digital transformation where the government, regulators and other institutions of concern will decide on which policies and strategies to develop to direct the operations of FinTech start-ups in emerging market economies, especially in Africa. It will also inform TelPay innovators on the next strategies and models to adopt while expanding to other emerging market and African countries.

2.5.3 Technology Acceptance Model

Another theory (model) that underpins this study is the theory of technology acceptance. The common question developers, practitioners, and researchers usually ask is: Why do people accept new technologies? Response to the question enables them improve methods for designing technology being developed, and evaluating performance of the technology thereafter (Dillon & Morris, 1996; Mathieson, 1991). A psychological evaluation process takes place in consumer behavior each time a customer intends to and/or use a new technology. Therefore, there is emergence of various technology user adoption models, which has been used in different contexts by several researchers to explain the hidden evaluation factors that positively or negatively affect customer adoption of new technology (Taherdoost, 2018). Some of

the models include; Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1977), Theory of Planned Behavior (TPB) (Ajzen, 1991, 2020; Madden, Ellen, & Ajzen, 1992), Technology acceptance model (TAM) (Davis, 1985, 1989; Davis, Bagozzi, & Warshaw, 1989), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) etc.

These theories, especially TRA and TPB postulate that some factors affect user intention to adopt technology, including financial technology. Some of the factors include characteristics of the tasks, characteristics of the interface of the user, the type of development implementation, political influences, organizational structure, etc. According to Asongu (2018), users' personal rational thinking also affects users' intention to adopt technology, where the users consider all possible consequences of their actions before adopting a given attitude towards accepting the technology.

However, TAM added three more factors to explain users' motivation to adopt technology. The three factors include; perceived usefulness, perceived ease of use, and attitude toward use (Davis et al., 1989; Muk & Chung, 2015). TAM has been successfully been applied in the study of internet and mobile banking (Asongu, 2018; Cruz, Neto, Muñoz-Gallego, & Laukkanen, 2010; Ismail & Masinge, 2012). It was found that TAM model focused more on organizational context and fails to support adoption of technology in a consumer context (Nysveen, Pedersen, & Thorbjørnsen, 2005a, 2005b). It was proposed that TAM should incorporate two factors: social influence processes and cognitive instrumental processes (Venkatesh & Davis, 2000; Wu & Wang, 2005). TAM was later extended to incorporate few more factors to include the social and cognitive influence. The social influence factors include subjective norm, voluntariness, and image, while cognitive instrumental factors include job relevance, output quality, and result demonstrability.

Because TAM and its extension fail to include individual users' resources or social support to adopt a new technology, or innovation, the Unified Theory of Acceptance of Use of Technology (UTAUT) was proposed to incorporate compatibility, perceived risk, and cost of the technology being adopted (Venkatesh et al., 2003). Evidence has shown strong linkage between these factors and intention to adopt technology (Ismail & Masinge, 2012; C. Kim, Mirusmonov, & Lee, 2010). UTAUT assumes four main direct determinants of technology acceptance which affects the users' behavior towards the technology. The determinants include, influence from family and peers (social influence), benefit of the technology to the user (effort expectancy), ease of technology usage (performance expectancy), and consumer perception of available recourses (facilitating conditions).

UTAUT was extended to UTAUT2 to incorporate more significant factors, which include fun and pleasure derived from technology usage (hedonic motivation), the monetary cost of using the technology (price value), and involuntary behavior towards technology (habit) (Venkatesh, Thong, & Xu, 2012). Furthermore, Khalilzadeh, Ozturk, and Bilgihan (2017) proposed for integration of UTAUT and TAM (UTAUT-TAM model) to incorporate security and risk related constructs (perceived risk, perceived security, and Trust. These constructs brought in the aspect of uncertainty, which every technology user has behind the mind concerning technology usage. Most importantly, they are much of concern when the technology is finance related, like TelPay.

The perceived risk is connected to expectation of losses associated with the purchase of the technology, perceived security is linked to the degree to which a customer believes that using a particular technology procedure will be secure (especially a financial technology), while trust is associated with the belief that vendors will perform some activity in accordance with customers' expectations. UTAUT model and its variations have been widely used in different technology settings, populations, and

cultural dimensions (Chang & Esterman, 2007; Im, Hong, & Kang, 2011; Min, Ji, & Qu, 2008; Oshlyansky, Cairns, & Thimbleby, 2007; Venkatesh & Zhang, 2010).

This study is rooted on technology acceptance model with its derivation on the UTAUT, its extension, and UTAUT-TAM models. The study quantitatively uncovers the UTAUT models by giving the research participants the opportunity to give their voice towards the models of technology adoption, focusing on adoption of TelPay. The respondents were allowed to provide details of benefit of the technology (effort expectancy), ease of technology usage (performance expectancy), consumer perception of available resources (facilitating conditions), the monetary cost of using the technology (price value), pleasure derive from using TelPay (hedonic motivation), the risk associated with using TelPay, the security perceived or experienced in using TelPay, as well as the trust users have developed in the use of TelPay application.

With these constructs of technology acceptance models, the performance of TelPay was evaluated, which was also used to gauge its contribution to financial inclusion in the three countries of usage. The argument is that, if these factors of technology adoption are identified in these countries (especially performance expectancy, monetary value, ease of usage, minimal risk, security, and trust), it means that financial inclusion will relatively be positively affected, based on the performance of TelPay in those three countries. Therefore, it can be assumed or deduced that other emerging market economies' and/or Africa's FinTech landscape can be positively effective due to adoption of FinTech (in this case TelPay).

2.6 Overview of TelPay Group

2.6.1 Introduction

TelPay was established in 2017 as a FinTech software application development company, with the aim of providing mobile device financing to African Population,

especially the unbanked. The company focused on providing these identified population with access to smartphones they could have been unable to have due to lack of access to finance. TelPay is currently operational in three African countries, Ghana, Zambia and Kenya, where it has partnered with telecommunication firms and financial institutions in implementing its business and financial strategies.

2.6.2 FinTech and Financial Inclusion

Financial inclusion has been defined from so many angles but with the overall meaning of enabling individuals at the base of the pyramid (mostly unbanked) access formal financial services (Dev, 2006; Ozili, 2020). It is a key pre-requisite for lifting such populations out of poverty through provision of comfortable banking system, financial outreach, financial education, thereby driving economic growth (Anand & Chhikara, 2013; D.-W. Kim, Yu, & Hassan, 2018; Sarma & Pais, 2011).

One thing is for a country to promote financial inclusion, another is for such inclusion to be sustainable. Boston Consulting Group (BCG) came up with an analysis of how to identify a sustainable financial inclusion, using four categories of financial products and services (transaction accounts, credit, insurance, and savings). These four categories were viewed through three dimension of financial inclusion (broad adoption, significant of usage, and sustainability)[3] According to BCG, if any of the financial products and services are not under the dimension of sustainability, it means that such country has not achieved a sustainable financial inclusiveness. Banks and FinTechs are obliged to be the main driver of sustainable financial inclusion alongside other members of the ecosystem, like government, educational institutions, financial clients etc. FinTech are required to develop digital platforms that will enable financial consumers to be more inclusive in the financial circle.

[3] See https://www.bcg.com/publications/2017/globalization-how-create-sustain-financial-inclusion

There has been a positive link between FinTech application and financial inclusion especially within the unbanked population (Arner et al., 2020; Lal & Sachdev, 2015; Philippon, 2019). One thing is to create mobile payment platforms (FinTech Apps), another is to have access to mobile technology devices to carry out digitalized transactions. TelPay's proposition is based on creating financial inclusion for all, in Africa, starting from developing platforms that enable access to mobile devices, which in turn enables access to mobile financial transactions. TelPay is set out to partner with telecommunication companies, financial institutions (banks and insurance companies), technological firms, and mobile device retailers to facilitate this process (see figure 2.7 for identified partners of TelPay). This form of partnership created a reliable ecosystem to enable TelPay achieve its vision and aim of creating, facilitating and improving sustainable financial inclusion.

Figure 2.7: TelPay Partners (ecosystem) for device financing

Source: *TelPay Presentation on Device financing (2021)*

TelPay software development is powered in partnership with International Business Machining (IBM), which is one of the best computer company globally. IBM is the

world leader in providing computer systems for both business and scientific applications. Apart from creating and improving financial inclusion among the unbanked, TelPay device financing solution enables mobile operators to monetize mobile data at scale to attract and retain high-value mobile subscribers, using proven technology and predictive models backed by global expertise in credit scoring and marketing.

TelPay provides a digital credit scoring platform using mobile behaviour to create risk and propensity scores for pre-paid and post-paid subscribers to provide mobile device financing for customers. It has partnered with MTN in Zambia and Ghana, which is a decision motivated by the 8.75 million subscribers on the network. To understand the credit eligibility of subscribers, a model was developed using Machine Learning based on their behaviours and profile on the MTN network. Based on this analysis, the different tier segment of the subscribers are assigned a credit score, subsequently these subscribers are given a proposed credit limit. TelPay services provide an end-to-end solution with rapid time to market for Handset finance, Mobile Money Loans, Airtime Advance, VAS loans and Device Insurance. With these activities and operations of TelPay, we argue that TelPay has contributed or will contribute to the financial inclusion of the countries of its operation.

2.6.3 TelPay Business Model

Currently, Telpay services are being piloted in three African countries (Ghana, Zambia and Kenya), partnering with Network Service Providers and finance companies. TelPay sits as a mediator between these two partners, while providing access to mobile technology to the population of these three countries. Therefore TelPay's business model is to act as an enabler between the network service providers and financial services institutions, while providing access the mobile technology to consumers.

Figure 2.8 shows how TelPay acts as enabler between the network service provider and the financial institution.

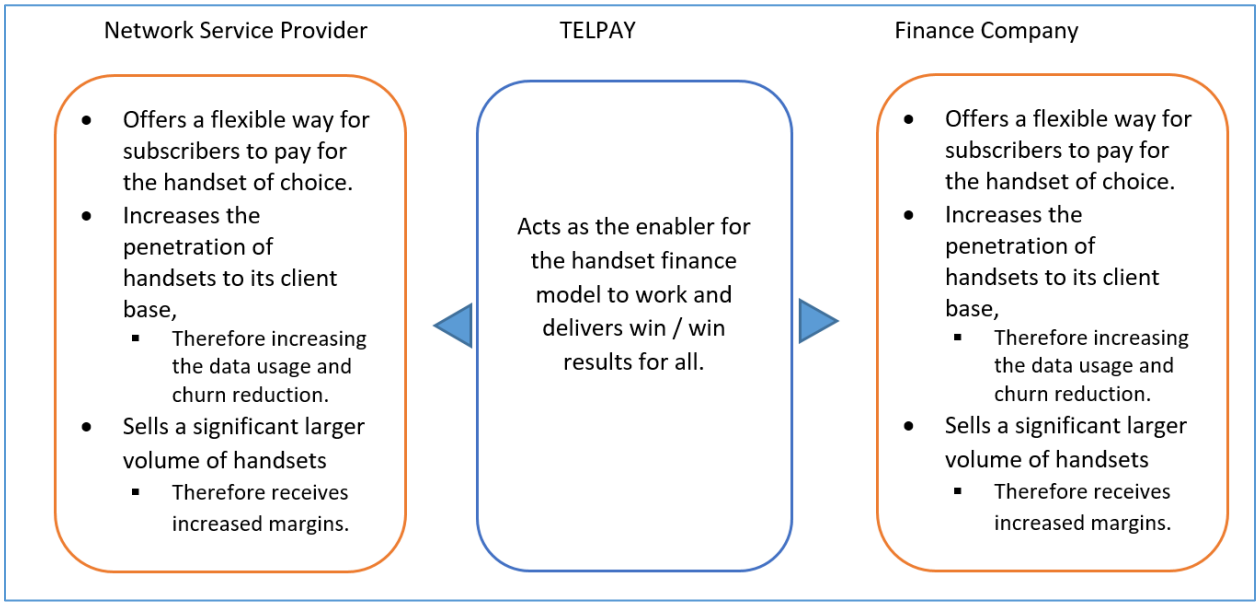

Figure 2.8: TelPay Business Model

Source: *TelPay Presentation on Device financing (2021)*

2.6.4 Application Process

TelPay targets its customers through SMS and asked to dial a short code and select the service i.e., TelPay Loans. Customers will dial the Short code (*303#), select TelPay Loans-Devices, they will be redirected to a menu providing a list of device brands and models. They have the option to select a smartphone or tablet on credit over a period of 3, 6 or 12 months then select the Service center they would like to collect their device from.

The customer will carry out the "Pre-approval" process, where he/she is allowed to confirm consent and confirm the subsequent monthly instalments. The customer will be required to verify the transaction and personal details through Know-Your-Customer (KYC). Post completion of the KYC process, the device will be automatically configured with a locking system, with applicable terms and conditions. TelPay allows

a customer to get one device at a time. Post completion of the down payment process, which includes pre-approval of the payment terms, enables the customer to go to the Selected Service Center (as per the USSD process) and collects the device.

The locking system provided allows TelPay to track unpaid customers, reminds them of upcoming and due payments. If there is no response from the customers, the locking system will automatically be activated. The customer is only allowed to make emergency calls and have access to make the due payments through the device (see Figure 2.9).

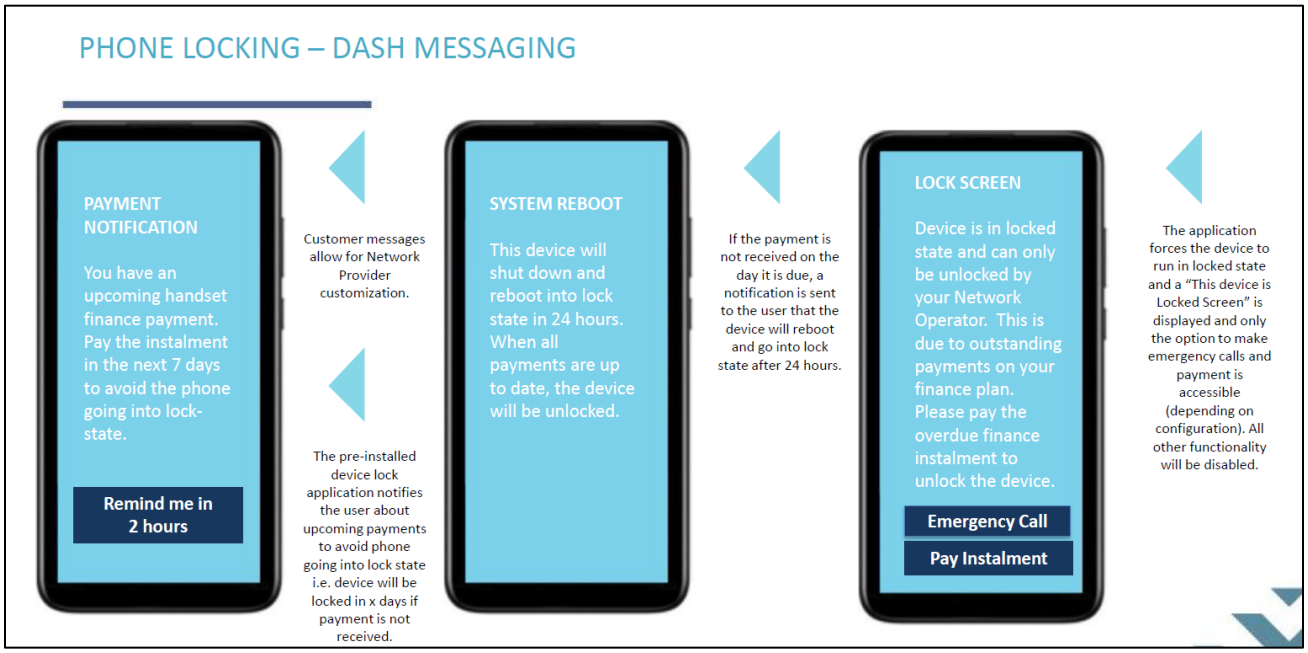

Figure 2.9: TelPay locking system

Source: *TelPay Presentation on Device financing (2021)*

An ineligible customer will receive a gentle rejection and be advised on what to do to qualify (see Figure 2.10).

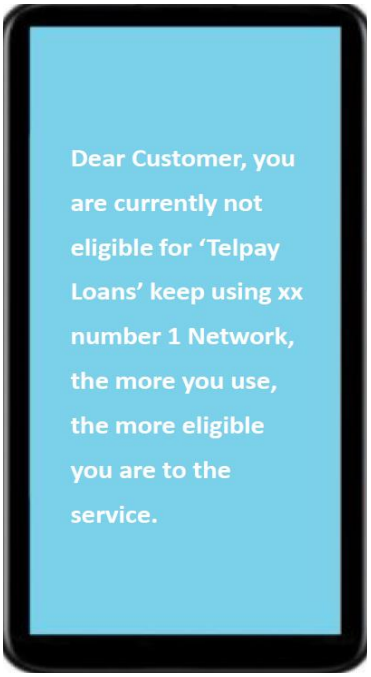

Figure 2.10: A Sample of customer rejection message

Source: *TelPay Presentation on Device financing (2021)*

2.6.5 Risk Identification and Mitigation

During the application, implementation and disbursement of device loan to customers, TelPay is exposed to some financial risks, but mitigation strategies have been proposed and implemented to minimise such exposure.

Risks

- Non-repayment of loan risk
- Know your customer (KYC) risk
- Risk of profiling customers who are not credit worthy
- Risk of poor-quality product

Mitigation

- The devices financed is be insured by Hollard Insurance (TelPay partner) for default, theft and damage. Hollard will reimburse the Bank on outstanding loan amount arising out of default.
- Customer's identification will be verified, and their biometric data taken including finger prints, before devices are issued by the Device Retailers.
- TelPay provides credit scoring before loans are disbursed.
- Device partners are reputable companies in the mobile devices industry (Samsung, Huawei, Tecno, iTel, Infinix).

2.7 Chapter Summary

This chapter provides overview of the FinTech industry, detailing evolution of FinTech, FinTech model, and ecosystem. This chapter also provides the theories that underpin this study, detailing the digital transformation model and technology acceptance models, and relating them to this research study. The brief overview of TelPay Group, its ecosystem, application process and its business model are also provided in this chapter. The next chapter (chapter 3) provides the research method deployed in achieving the research objectives set out in chapter one

Chapter 3 Research Methodology

3.1 Introduction

This chapter explains the methodology that is deployed in this study. It detailed the research design/approach, the population and sample, the data collection method and the method of analysis of the data collected. The ethical consideration is also explained, especially as the study involves human participation in terms of interview.

3.2 Research Design

FinTech topics are still novel research in the academic space, especially in the emerging market economies. Therefore, it has not been sufficiently studied and secondary data is no yet available (in some instances) to allow researchers to quantitatively address some questions. Based on that, this study adopts qualitative research design to review the performance of FinTech start-ups in Africa, using the case of TelPay.

Qualitative research design allows researchers to examine people's experiences, viewpoints and perspectives in details, through interviews, focus group discussions or observations (Sofaer, 2002). These methods allow researchers to gain insights into the participants' world of understanding. In some instances like interview and focus group study, they allow the researcher to ask complex questions, break down the complex questions and add follow up questions to gain the required information. They provide avenue for the researcher to explain things to the participants' understanding (Halcomb, 2016).

More so, qualitative research helps researchers to deeply identify and understand participant's views through their expressions during interviews, observations and focus group discussions (Hennink, Hutter, & Bailey, 2020). Based on these well-known properties of qualitative research design, this design is suitable for this research study,

as the study aims to deeply understand the performance of FinTech start-ups from the users' point of view.

This study adopts interviews to achieve the research objectives, as it is considered most flexible compared to observation and focus group discussion. Interviews gives the researcher the opportunity to ask questions directly to the participants, and add follow-up questions if necessary. This approach is more flexible, unlike observation, where the participants' behaviour might not completely reveal their insights on the subject matter. More so in a focus group discussion, which would have given a researcher the opportunity to ask follow-ups question, some participants might feel intimidated by the presence of fellow participants, therefore might not be able to express their concerns on the subject matter.

3.3 Population and Sampling

3.3.1 Population

Research population means the sector of people, variables or components from whom/where information is gathered to address the research objectives and questions (Kumar, 2018). The essence of defining a research population is to identify a segment where the findings of the research can be able generalized and theories can be developed (Blumberg, Cooper, & Schindler, 2014). The population of this study comprises of all FinTech App users in Africa.

3.3.2 Sample

The end point of a very research is to generalize the findings. It may not be possible for a researcher to study the entire population of interest. To get a group of population a researcher can be able to cover, a sample is formed, which is a subset of the population

of interest (Khalid, Abdullah, & Kumar M, 2012). Use of sample also enables a researcher to minimize cost, save time and concentrate on getting valuable information from the chosen sample, rather than spending more time, energy and resources on a larger population.

This research sample is targeted towards individuals that have adopted FinTech products, focusing on TelPay FinTech App. A sample of 15 TelPay users is used, 5 users from each of the three countries (Zambia, Ghana, and Kenya) that have adopted TelPay. These three countries are the only African countries where TelPay is operational as at the time of this research. The proposed sample was between 20 to 25 participants, many people volunteer to participate in the research, but data saturation was researched after interviewing 15 participants (5 people per country; a perfect coincidence), therefore the interview was concluded to avoid getting repeated points from the sampled participants. A sample is not needed from the TelPay innovators, as they might portray effieict performance of TelPay to the researcher. However, 2 of the innovators are interviewed to find out the challenges they encountered during the development and implementation phases of TelPay.

Using purposive sampling technique, the sample is well diversified to include different age groups, career specialty, and educational level, to achieve inclusiveness. The participants includes Chief Executive Officers (CEOs), senior managers, IT Specialists, engineers, financial analyst, strategists, business vendors, etc. The participants were interviewed through virtual platform, each interview is recorded and transcribed.

3.4 Data Collection

Being a qualitative research, the data used in this study was collected through interview from the sample identified above.

3.4.1 Interview Design

Interview is one of the research designs adopted in qualitative research (interview, observation and focus group discussion). In interview, the selected research participants are asked questions to address the research questions identified in a research and achieve the research objectives (Rahi, 2017). Interview can be conducted in three different formats namely, structured, semi-structured and unstructured or in-depth interviews (Saunders, Lewis, & Thornhill, 2007). Structured interviews contain formalized questions, which are standardized and predetermined. The answers must be what they are, and no follow up questions are required. Semi-structured interviews can be predetermined but flexible to accommodate addition or elimination of some questions due answers from preceding questions. In unstructured questions, participants are given the opportunity to talk freely, express themselves about the subject matter. In unstructured interview, there is no outlined list of questions the researcher asks one at a time, rather the participants are allowed to speak through, thereby allowing the researcher to explore the participants' insights on the subject matter.

For the purpose of the study, a semi-structured interview is used, where the interview questions are predetermined, but are flexible to allow for clarifications where needed. The questions are open-ended to allow the researcher to ask follow up questions where needed, unlike closed-ended, which does not give room for further questions or to find out reasons for the answers given by the participants.

3.4.2 Conducting Interviews

The participants are TelPay users who were be identified from TelPay database, which includes diversified group explained in the sample section. They were contacted

through phone calls and emails. All were interviewed through online platform, including Zoom and Microsoft teams whichever is acceptable to a participant. With the consent of the participant, the interview questions were sent to them prior to the agreed interview date to prepare and familiarize themselves with the questions. Interview is planned to last between 45 minutes and 1 hour for each participant, this is to try as much as possible not to inconvenient the participants or to encroach into their busy schedule. All interviews were recorded (with permission from the respondents), transcribed and ensure that no data is lost in the process. The participants were allowed to express freely themselves and provide their opinions and beliefs on the use FinTech Apps as much as possible.

Interview questions were designed to cover the 3 objectives of this study, explained in section one of this proposal. The responses from the interview assist the researcher to identify the current stance of TelPay in Africa, especially in the countries that have fully adopted the App. The responses also guided the researcher to advice TelPay start-up on how to penetrate into other African countries. Sample of the interview questions and consent letter are provided in the Appendix.

The open-ended questions follow the following themes:

- **Section A:** Profile – The first section of the interview focuses on the profile of the participants, which includes their qualifications and positions occupied in places of work, type of business participants engaged in is also accommodated, should the participant be into businesses.

- **Section B:** Performance of TelPay – Questions in this section is designed to determine how TelPay has been performing in the African countries where it has been fully established.

- **Section C:** Accessibility - Questions under this section capture how TelPay is accessible by the public. It is also designed to disclose any difficulties people encounter while trying to have access to TelPay.
- **Section D:** Financial inclusion – This sections contains questions that explore how TelPay has contributed to financial inclusion in Africa.

However, different set of interview questions were presented to the TelPay innovators, to reveal the challenges they faced during the development and implementation of TelPay in the three current countries of operation.

3.5 Data Analysis

Qualitative data analysis helps to discover and understand the research results by describing the phenomenon of the research through the data collected (Halcomb, 2016). In such analysis the researcher is expected to categorize the that data collected, examine the information contained in the data so as to respond to the research questions and achieve the research objectives (Bengtsson, 2016).

According to Miles and Huberman (1984), three processes of qualitative data analysis have been identified. The processes include data reduction, data display and conclusion. While data reduction involves selecting, summarizing and simplifying the qualitative data collected, data display involves organizing, compressing and assembling the data contents (information), which enables the conclusion. Conclusion is the final step, where the information from the data is used to make informed decision concerning the research objectives and the research questions.

The above steps outlined by Miles and Huberman (1984) were utilized in analyzing this research data, whereby all the interviews were transcribed, summarized and relevant information relating to the research objectives were extracted. The responses were

analyzed according to correspondences or contradictions, where by the participants' responses were compared to identify similarities and differences in the responses. More so, focus was placed on identifying differences and similarities in the responses of participants from different countries.

While applying the following steps identified by Miles and Huberman (1984), content analysis were used to identify the themes from the data. Content analysis systematically and objectively provides means of making valid inferences from the data collected, so as to describe and quantify the specific occurrences (Bengtsson, 2016; Downe-Wamboldt, 1992; Mayring, 2004). Content analysis helps the researcher to code the data into headings, subheadings, categories so as to generate reliable themes according to the research objectives (Bengtsson, 2016). Most importantly, content analysis is suitable to analyze data in all forms of written text, notwithstanding the sources of the data. However, it is more suitable for interviews, where the interviewer framed the interview questions to suit the research objectives. In such instance, it will be easier to use content analysis to form themes that lead to achieving the set research objectives. This research study adopts open-ended interview for data collections, therefore, content analysis is most suitable for the analysis.

Table 3.1 Consistency Matrix

Consistency Matrix					
Sub Problem	Literature review	Research questions	Source of data	Type of data	Analysis
Operations of FinTech start-ups in Africa, using the case of TelPay.	I. Lee and Shin (2018) Frame et al. (2018)	What is the level of performance of TelPay FinTech start-up in Africa?	Respondents in semi-structured interviews. Company documents	Qualitative data	Content analysis
To identify if TelPay accessible to the proposed population it was designed for	Hill (2021) Tan et al. (2019)	Is TelPay accessible to the proposed population it was designed for?	Respondents in semi-structured interviews TelPay documents and data base	Qualitative data Quantitative data	Content analysis Descriptive analysis
Contribution of FinTech (TelPay) to the financial inclusion landscape of Africa	Arner et al. (2020) Philippon (2019)	Has TelPay created or contributed to financial inclusion in Africa?	Respondents in semi-structured interviews TelPay documents and data base	Qualitative data Quantitative data	Content analysis Descriptive analysis

3.6 Limitations of the Study

The only identified limitation in this study is sample bias. The use of TelPay FinTech App has not been escalated to many African countries, therefore this study focuses on only three countries that have fully adopted TelPay App. Therefore, the findings might not be fully generalized to all African countries. Though this can be viewed as a limitation, on the other hand, it is an advantage. The findings will enable TelPay start-up to understand how to penetrate to other African/emerging market countries.

3.7 Validity and Reliability

In a qualitative study, validity means that the findings of the research truly reflect the context being studied, while reliability entails that if the study should be replicated, the findings will not deviate much from the results of the initial research (Richards & Morse, 2013).

For the findings from a research study to be generalized, the researcher must ensure that the process of conducting the research, including the planning, data collection and data analysis processes are reliable with minimal errors. In the planning process, the researcher ensures that the research sample, the research design, the research instrument and method of analysis are suitable for the type of research being carried out.

In the data collections process, the researcher ensures that data collection and transcription process is robust, with minimal errors. Therefore, the interviews were recorded, and the researcher played the record as many times as possible to accurately capture what each participant responded. Once the interview data is transcribed, it was shared with randomly selected participants to check for correctness of their responses, they also had the right to add any additional details that is not properly captured during the interview. This process is referred to as member-checking, and is usually adopted in qualitative research to enhance credibility (Korstjens & Moser, 2018).

More so, in the analysis process, there is possibility of human errors and mistakes, due fatigue, misplacements, personal bias, and interpretation errors. The researcher ensures that these errors are minimized to ensure validity and reliability of this research study. In some cases, an independent investigator can be deployed to separately perform the analysis and discuss findings with the researcher (Graneheim, Lindgren, & Lundman, 2017). Furthermore, the outcomes of the analysis can be shared with the participants to authenticate their responses to the interview questions (Korstjens & Moser, 2018).

3.8 Ethical Consideration

Ethics relates to the application of integrity and morals by a researcher while conducting a research, however, ethics should be adopted and maintained all through the research process (Abernethy et al., 2014). According to (Collis & Hussey, 2013), importance of adhering to ethical process during research is numerous, including consent, anonymity, privacy and misrepresentation of the participants. Based on these identified needs for ethical considerations, ethical approval was obtained from the University of Witwatersrand ethics committee prior to administering the research instrument to the targeted population.

The participants' consent was obtained through consent forms that were filled and signed by each participant. Participants were provided with an information sheet, with title of the study, the description of the research motivation, and the objectives of the study. More so, participants were informed that participation in the research is voluntary and that they have the right to withdrawn from the study at any point during the research process.

However, to ensure confidentiality of both the participants and their organizations, the identity of the participants were withheld during data analysis and interpretation of the research results. All the interview transcripts as well as the final report deployed the use tags such as "Participant 1" or "participant" A.

3.9 Chapter Summary

This chapter provides the overview of the research method adopted in this study. The research design, data collection method and analysis were well explained. The research population and sample were also well explained and justified. The process to ensure

validity and reliability of the research findings were also detailed. More so, the ethical considerations and processes were provided in this section.

Chapter 4 Presentation and Interpretation of Results

4.1 Introduction

This chapter presents and discussed the views of the participants on FinTech, focusing on the TelPay. The three processes of analyzing qualitative data as identified by Miles and Huberman (1984), were utilized in this research. First, the data collected were transcribed, secondly, the data were displayed (organized, compressed and assembled), and finally concluded to make informed decision on the performance of TelPay in emerging market and/or Africa. While the first step was carried out behind during the process of this research, second step is conducted and presented on this chapter, and the third step (conclusion) is presented in chapter 5 of this study

4.2 Demographic Analysis

This section focuses on the participants' characteristics, for instance their age, gender, educational qualifications, industry of focus, profession, work experience, as well as how long they have used TelPay application (for the TelPay users). There were 15 TelPay users interviewed, though some of the participants were not comfortable with some of the questions presented to them, however, the responses they gave and information they provided were appropriate and sufficient enough to make informed decision. Tables 4.1a, b, and c show the details of the participants. The two TelPay developers interviewed are females, with career in software engineering and marketing.

Table 4.1a Zambia: Summary of background of the participants

Participants No.	Age	Gender	Qualification	Industry	Role	Years of Experience	Business own	Use of TelPay
1	26	Male	First Degree	ICT	Business Developer	over 5	EduTech	3 Months
2	32	Male	First Degree	ICT	Payments	5	Web design	3 Months
3	24	Male	First Degree	Financial Services	Graphic designer	3	Graphic design	5 Months
4	28	Male	First Degree	ICT	Software developer	over 5	None	3 Months
5	28	Male	First Degree	Engineering	Communit Liaison Officer	3	EduTech	18 Months

Table 4.1b Ghana: Summary of background of the participants

Participants No.	Age	Gender	Qualification	Industry	Role	Years of Experience	Own Business	Use of TelPay
6	37	Female	First Degree	Financial Services	Customer Relations	3	None	6 Months
7	25	Male	Diploma	Financial Services	Sales	5	None	9 Months
8	39	Male	Masters	Communication	Admin Manager	9	None	7 Months
9	34	Male	First Degree	Communication	Customer Relations	10	None	6 Months
10	38	Male	Masters	Communication	Manager	10	None	15 Months

Table 4.1c Kenya: Summary of background of the participants

Participant No.	Age	Gender	Qualification	Industry	Role	Years of Experience	Own Business	Use of TelPay
11	25	Female	First Degree	Financial Services	Card Production	5	None	0 (Referred customers to TelPay
12	25	Female	First Degree	Financial Services	Mobile Banking	3	None	12 Months
13	27	Male	First Degree	Engineering	Job seeker	0	None	12 Months
14	30	Male	Diploma	Financial Services	Customer Relations	5	None	15 Months
15	21	Male	First Degree	Financial Services	Marketing	2	None	12 Months

4.2.1 Age

Most of the participants were in the age bracket of 25 to 29, representing almost 50% of the entire sample (47%). The next well represented age group is 30 to 34, as well as age group of 35 and above, with each of the later age groups representing 20% of the research sample. This sample is in line with Zalan and Toufaily (2017), who found that millennials are most attracted to FinTech, because they are mobile and social media savvy and are heavy users of different technology channels. Millennials are also attracted to agility, innovation, customer experience, constant, and convenient services provided by FinTech. It is also in line with Bosma, Schøtt, Terjesen, and Kew (2016), who argued that the most economically active age group is between the ages of late 20s and mid 40s (see Figure 4.1 for the age representation of the research participants).

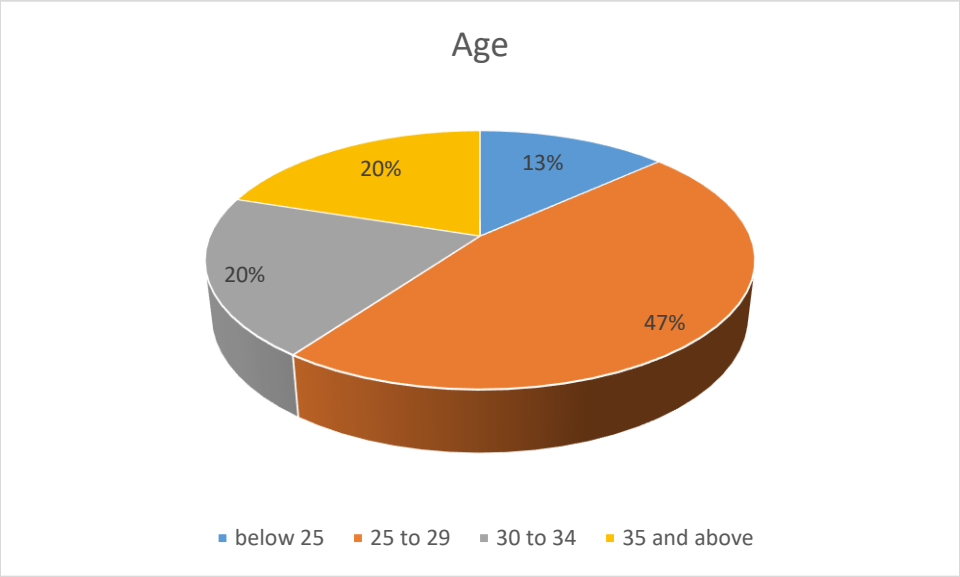

Figure 4.1. Age representation of the sample.

4.2.2. Gender

From Figure 4.2, the result shows that males were more willing to participate in the study. Despite the researcher's attempt to have fair gender representative sample, and

many TelPay users were willing to participate in the study, male participants responded more than females. Therefore, the sample is made up of 80% of male.

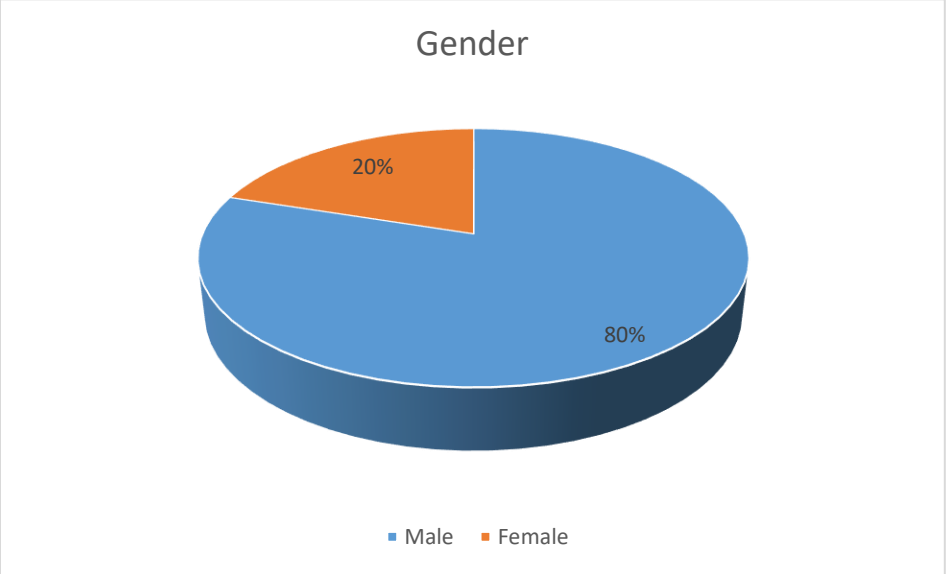

Figure 4.2. Gender representation of the sample.

4.2.3. Educational Qualification

The study sample has a relatively high educational qualification, with 74% having first degree, and 13% with master's degree and Diploma (see Figure 4.3). The high level of education made it easier to contact the participants. It also ensures ease of use of interview platforms (Microsoft Teams and Zoom), and ensures smooth interview process. This results also indicates that people with high level of education are more attracted to TelPay, than less educated people.

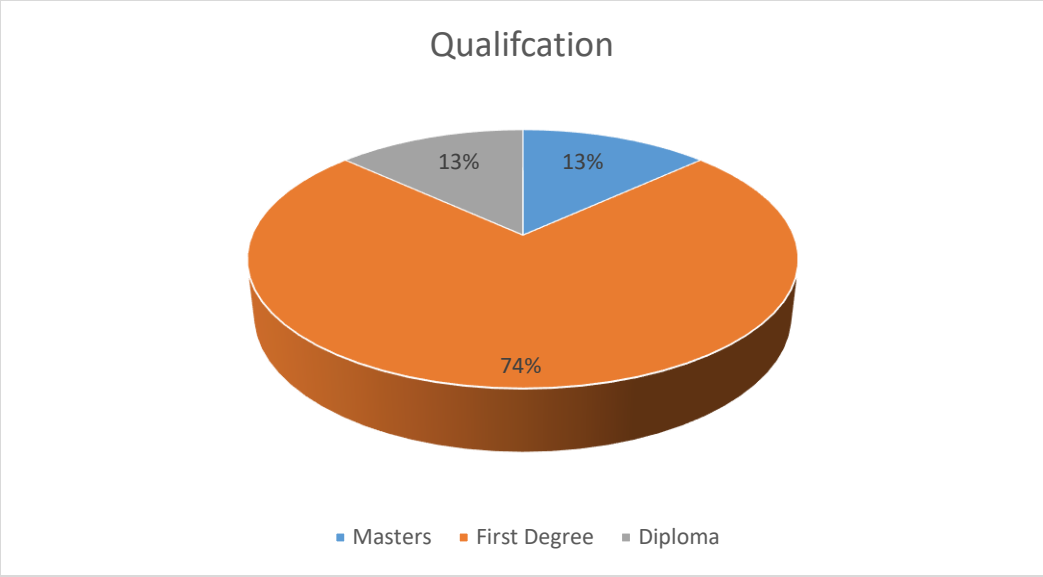

Figure 4.3. Educational qualifications representation of the sample.

4.2.4. Industry Focus

From Figure 4.4, the result reveals that the participants concentrated in three major industries, namely; financial services, information and communication technology (ICT), and Engineering. These there industries are known to apply technologies compared to every other industry. ICT and engineering industries are mostly attracted to new technologies, exploring, and using them to develop applications, while financial services industry apply the applications in offering financial services to the public. Therefore it is interesting to find that individuals from these industries are attracted to TelPay compared to other industries. Figure 4.4 shows that people in financial services (47%) industry are more attracted to TelPay, followed by ICT (40%). One of the participants from financial industry does not use TelPay (because she already has a similar contract), she refers most of her clients to use TelPay due to its envisaged performance and testimonies from exiting users.

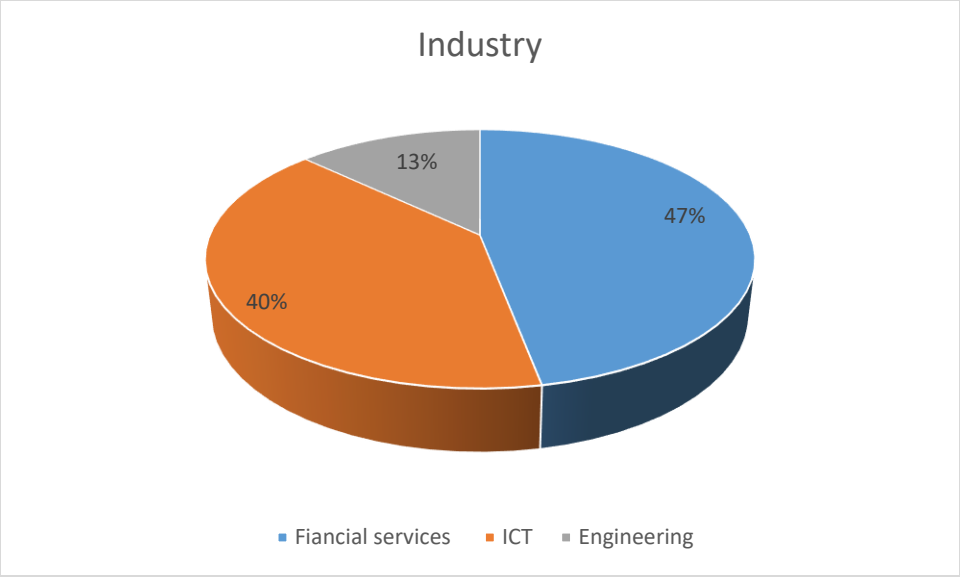

Figure 4.4. Industry representation of the sample.

4.2.5. Work Experience

The study participants consist of people with work experience from less than 5 years to over 10 years (see Figure 4.5). The result reveals that most TelPay users have 5 to 9 years of work experience (47%). The next larger group of participants are people with less than 5 years of work experience. This shows and confirms that TelPay does not apply strict restriction on subscribers based on years of work experience. However, people with less than 10 years of work experience were more excited to participate in the study. This can be attributed to their level of satisfaction and gratitude for not being excluded from the contract due to lack of sufficient number of years at work. It also indicates that TelPay is extending its hand of financial inclusion to larger population, instead of focusing only on the less risky population (people with established years of work experience).

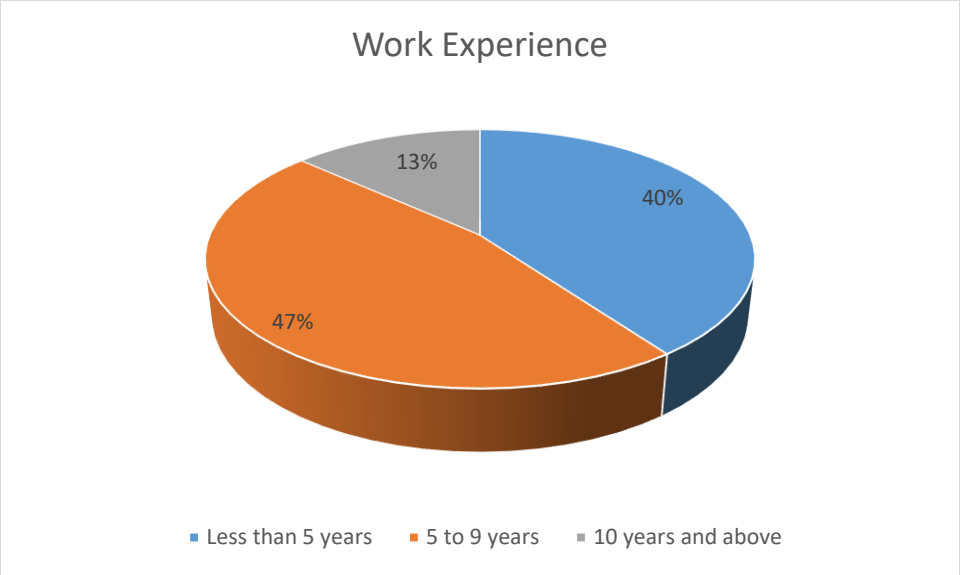

Figure 4.5. Work experience representation of the sample.

4.2.6. Own Business

The participants were also asked if they have their own businesses despite working in formal organizations. The result reveals that 27% of the participants are also entrepreneurs (see Figure 4.6). And most of them are from Zambia (see Table 4.1a). The remaining 73% indicated that they have the plan of going into personal business in future. Interestingly, all these business owners focused in technology based business, for instance EduTech, web design, graphic design, etc. This result is in line with Figure 4.4, which reveals that most TelPay users are in technology industry.

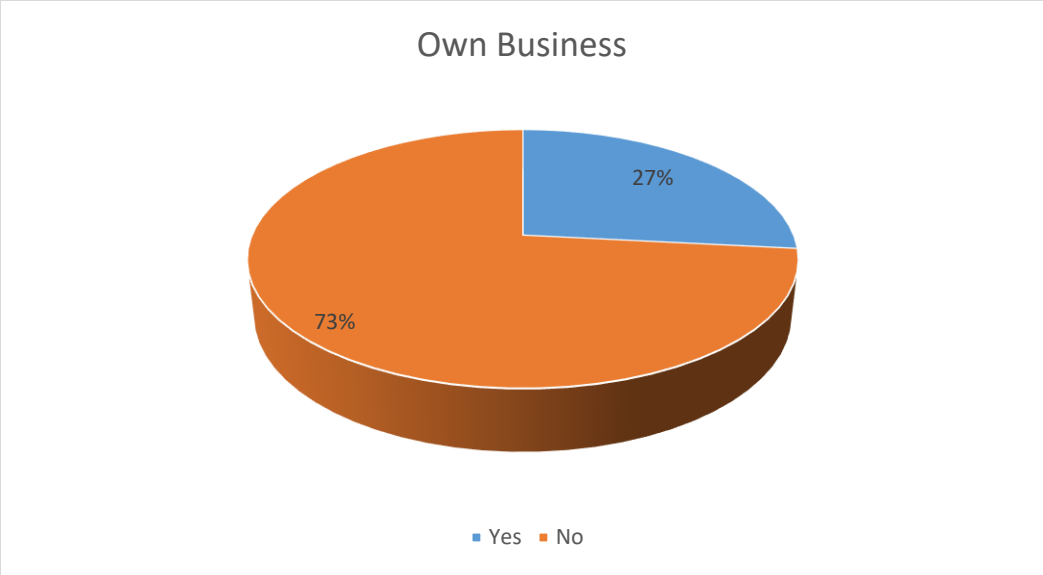

Figure 4.6. Business ownership representation of the sample.

4.2.7. Use of TelPay

Questions were also asked to know how long participants have been with the TelPay application. It was found that most participants have used the App between 1 to 6 months (though only 3 participants in the group have used the App for 3 months, others have used it between 5 and 6 months). Also 33% have used the App for over 6 months, and 20% over 12 months (see Figure4.7). This reveals that TelPay is relatively new, however its performance review is required to guide for further and future establishment in other countries. An interesting participant do not use TelPay, but volunteered to participate in this study. She works with a financial institution that partners with TelPay, she has heard and witnessed the testimonies from TelPay users, therefore, she advises clients to use TelPay.

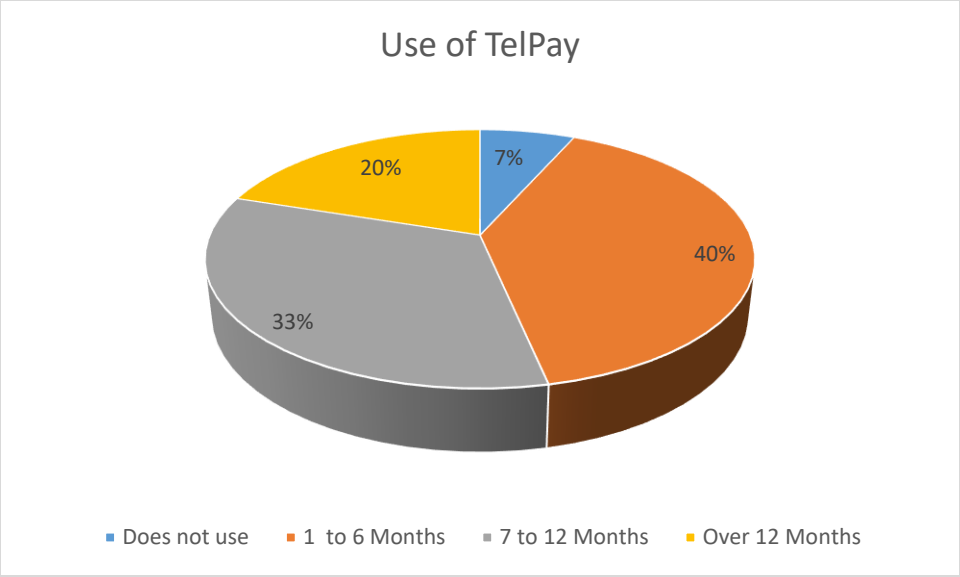

Figure 4.7. TelPay users' representation of the sample.

4.3 Results of the Interview

This section presents and interprets the responses from the study participants in relation to the research study objectives, which includes, evaluating performance of TelPay in the African countries where it has been fully established. Secondly, to examine the accessibility of TelPay by the public, as well as to discover and disclose any difficulties people encounter while trying to have access to TelPay. Thirdly, to find out if TelPay contributes to financial inclusion in the countries it has been fully operational. More so, discussion with TelPay developers are also presented in this section. However, the opinion of the participants on FinTech generally was obtained before exploring the performance of TelPay as a FinTech application. Finally, TelPay developers were also interviewed to understand the changes and huddles of developing and establishing TelPay in the three countries of its current operation.

4.3.1 Opinion on FinTech Companies

To assess TelPay users' understanding of, and perception on FinTech, they were asked few questions in that regard. Some of the questions are related to their overall opinion on FinTech as well as benefits of FinTechs that are accrued to financial customers, both individuals and organizations. Second, if they foresee FinTech companies as rivals to the incumbent financial services providers; third, if FinTech start-ups will take over the financial institutions. Fourth, if FinTech start-ups or products have impacted any segment of their company/business; fifth, if they think FinTech start-ups are likely to fail or succeed in Africa. Sixth, they were also asked to identified known or envisaged factors that are hindering FinTech start-ups or new market entrants into Africa; finally, if there are risks FinTech start-ups pose to the customers and to the financial industry. The essence of these questions is to gauge respondents' understanding of FinTech and its operations, the responses determine how the respondents understand TelPay, and how they are able to evaluate TelPay's performance.

4.3.1.1 Benefits of FinTech

Addressing the following points, all the participants indicate that FinTech has introduced some benefits into the financial system, which incumbents financial institutions did not introduce, including provision of diversified digital financial products and services, and creation of options for financial clients. They have helped mostly lower-end and medium-end customers to save, and carry out efficient, convenient, timeous, and cost effective transactions, compared to what incumbents have offered for many years. There has been ease of accessibility to financial products and service. Participant 1 added that FinTech also provides some form of social economic benefit by creating employment opportunities for individuals and high-tech consulting firms.

These responses confirmed existing literature on the benefits of FinTech, which includes, to mention but a few; ease of accessibility, ease of use, convenient, creative innovative, timely, agile, flexible, cost-effective, technologically capable, customizability etc., (Dapp, Slomka, AG, & Hoffmann, 2015; Zalan & Toufaily, 2017). This implies that FinTech in Africa has the tendency of positively contributing to the efficiency of the financial system, as their services have been confirmed to have the above mentioned benefits.

4.3.1.2 FinTech as a rival to Incumbents

In relation to FinTech being a rival to incumbent financial institutions, most of the participants categorically stated that FinTech has posed as great rival to the incumbents. Participant 1, 5 and 6, included that some of the income and fees accrued to incumbents from customers are now shifted towards more efficient products or services that are offered by FinTech start-ups. Participant 2 responded to the rivalry of FinTech to incumbents by saying: *"Yes, I can already feel the impact because access to services like loans has moved from waiting in a long que to just completing the whole process on my smartphone which is very convenient"*.

Participant 15 made it clearer by saying " *FinTech and their way of doing things and how they ought to do things in days to come is going to pose a real competition to these incumbent financial companies and it's going to be a big blow to them. These financial service providers are going to have a challenge once FinTech establishes their services and what they have in mind and start operating as they ought to"*. This is similar to participant 12 and 13 and 14's responses. Participant 2, 3 **and 5** added that the incumbents should or have already been forced (indirectly) to integrate a lot of FinTech systems into their current setup, thus improving the overall services as a whole. However, some FinTech companies will actually grow to become as big as existing financial services financial institutions rather.

Participant 4 believes that there will be more of partnership between incumbent and FinTech start-ups, rather than competition. Participant 7 and 10 pointed out that though some of the incumbents' products and services are now being offered by FinTechs, but rivalry has not yet set in, because some financial clients are still attracted to incumbents, but in the future rivalry maybe detected. Participant 8, 9 and 11 indicated that incumbent financial institutions should not see FinTechs as rivals rather partners and game changers in ensuring efficient customer service delivery. Participant 9 added that all incumbent financial institutions should be tech oriented, and should be extinguished from the market if they do not embrace FinTechs. Majority of the participants believe that FinTech start-ups are definitely rivals to the existing financial institutions.

Looking at these responses from country perspective[4], most people from Zambia and Kenya believe that FinTech start-ups are great rivals to the incumbent financial institutions. This is in relation to the extent FinTech has impacted on some segments of the financial institutions. The most affected segments are the payment system and lending. For instance loan applications have moved from waiting in a long que or completing piles of paper to just completing the whole process on a smartphone with some minutes. Therefore, some of the income and fees accrued to incumbents from customers are now shifted towards more efficient products or services that are offered by FinTech start-ups.

This result confirms Zalan and Toufaily (2017)'s findings, that the banks' segment at risk due to influx of FinTech include the retail banking products, which is made ups of consumer payments solutions, consumer credits, simple saving products, and current accounts. On the other hand, Ghana respondents believe that FinTech start-ups are not yet rivals to incumbents, because some financial clients are still attracted to incumbents.

[4] Participants 1 to 5 represent Zambia, 6 to 10 represent Ghana, while 11 to 15 represent Kenya (See Tables 4.1a, b, and c)

More so, FinTechs and incumbents might be partners rather than rivals. This response is in line with Dey (2016) who posit that collaboration between banks and FinTechs is not only desirable, but inevitable. This section of Ghanaians perception is solely based on government intervention and/or financial regulatory policies that will be set out to guide the influx and operations of FinTech in different jurisdictions.

4.3.1.3 FinTech Takeover of Incumbents

Most of the participants have the opinion that FinTech will take over incumbent financial institutions' operations. Participant 4, 12 and 13 indicated that in an era with generation who wants to be less visible, wants things to be done easily and faster; there is a possibility of the FinTech takeover. Participant 14 mentioned that the takeover will not be immediate, but might not take some time. For Participant 5, FinTech is already taking over incumbent financial institutions, he responded as follows: *"Yah for sure, for sure I think they are already doing that, I think they are really giving banks a run for their money looking at how flexible they are, so it's given banks a lot to think about, so I think FinTechs are really the future to go, I think the integration of technology and finance again is something that is different".* Participant 6 dropped another bombshell in relation to FinTech takeover, and said *"it depends on how the banks reacted to Fintech influx, and banks should embrace and collaborate with FinTech if not, in the future FinTechs can wipe incumbent financial institutions out".* Participant 15 added that FinTech will definitely take over the market and have an upper hand". Giving example with banks products, Participant 15 mentioned that some of the banks' products are now internet based, and FinTech has impacted on such products and services, therefore a takeover will be easy.

Participant 7 had a contrary opinion on FnTech takeover, that there must be a group of clients who would still prefer traditional banking operations, especially with increase in cybercrime. This is similar to participant 8, 10 and 11 who said that complete take

over might be difficult, but there might be a form of partnership between the two, and FinTech will then become a critical part of the financial ecosystem. Recently some incumbents are using technologies developed by FinTechs and some banks work (consult) for FinTechs, which sounds like partnership rather than takeover. Participants 1 and 3 indicated that takeover of the incumbents by FinTech start-ups solely depends on regulators' intervention on the operations and influx of FinTech start-ups. Participant 2 added that in as much as FinTech will not take over the incumbent financial institution, FinTech will play a significant role in shaping the financial institutions and how they provide their services.

From country perspective, most respondents from Zambia believe that the extent of takeover will depend on government policies, while Ghana believes that there will not be complete take over because incumbents have some competitive advantage over FinTechs, for instance, some financial clients will still trust existing financial institutions over newly established FinTech start-ups that are prone to cybercrime (Dapp et al., 2015; Teece, 1986). From Kenya perspective, there will be a complete takeover of financial institutions by FinTech. This is based on the fact that FinTech targets mostly the unbanked, Small and medium enterprises (SMEs), which is more emanating from Africa (Zalan & Toufaily, 2017).

Based on these discussions, it is deduced from this study that the extent of FinTech taking over the incumbent as well as the extent of the rivalry will exclusively depend on the level of government intervention and polices to regulate FinTech start-ups. Therefore, it can be concluded that the effects of FinTech influx into the financial system depends on government policy to either safeguard or sell-out the incumbent financial institutions. Giving example from China, Chinese government operated on a sandbox system, where the set-out policy was not to favor or safeguard the existing financial institutions, rather FinTechs were allowed to operate on a normal basis, and were also given some opportunities to settle in the country (Kshetri, 2020; Wang &

Huang, 2017). This action by the Chinese government impacted on the growth of FinTech in the country, and today China is the largest FinTech hub in emerging market (Kshetri, 2020). Hence, it can be deduced that the influx, operations and growth of FinTech will largely depend on government intervention.

4.3.1.4 Failure and Success of FinTech

When asked if FinTech is likely to fail, almost all the participants have the notion that FinTech start-ups are unlikely to fail, especially as everything in life is becoming digitized. Participant 1 responded: *"I don't think so, because there is high consumerism as it stands right now, and financial technology has really risen, I don't think it's actually going to fail I think it's going on the rise and rise and rise"*. Participant 12 added that there is 80% possibility of FinTech survival, as most people are becoming more digitized. Participant 5 emphasized it by saying: *"I don't see it dying at all"*. Participant 6 and 8 added that Covid-19 pandemic and its effects (extensive lockdown) has proved that FinTech is here to save the financial world. Participant 11's response focused on the target market of FinTech, which is middle and low class income earners. Such population is much in Africa, therefore FinTech in Africa is unlikely to fail. He said: *"I don't think it's likely to fail because Kenya as we all know is a third world country and people are struggling financially, I think FinTech is actually targeting mostly the middle- and low-class Kenyans and that's where the majority are. 80% of Kenyans are either middle class or totally low class and with them targeting that market it's really impossible for it to fail because most Kenyans are in need of financial services and that is what FinTech is offering"*.

Participant 2 and 3 had a different notion, where Participant 2 responded that "The adoption rate by users is rather slow, therefore so many FinTech start-ups will need to stay in the market for a very long time before they start to see profits, which might be unsustainable if they remain just start-ups. Participant 3 added that just like every other

market/industry with high level of competition, some FinTech start-ups will definitely fall of the radial at the long-run. Participant 13 countered this notion that with the rate FinTech is growing, and if they can maintain the quality of their service, failure is far from them. This is similar to participant 14's response, which indicated that the rate of success and failure depends on a particular FinTech start-up, if the management is capable and efficient, the possibility of success will be higher. Participant 15 added that though FinTech operations are quick and efficient, it's too early predict failure or success.

From these responses, it is deduced that the possibility of FinTech falling off the financial market is very low. Though there are many factors (internal and external) that lead to business failure. The internal factors are within the control of every organization, which include strategies to take and mitigate risk and stay afloat. The external factors are beyond the control of every business, which includes some macroeconomic factors, natural disaster etc. The result implies that, all things being equal, FinTech start-ups are unlikely to fail, even in Africa. The three countries involved in this research indicated that FinTech has come to stay, looking at the speed and efficiency of the transaction they engage in. secondly, the target market of FinTech is unbanked and low income earners, which are more amenable in Africa, therefore Africa can be seen as the best hub of FinTech operations. Most importantly, the success will deeply depend on the level of government policies and interventions.

4.3.1.5 Factors that Impede Influx of FinTech

When asked to about the factors that impede entrant of FinTech into Africa, all the participants identified some factors that hinder influx of FinTech, especially in Africa. The factors include, level of education of the potential users, level of awareness of the products, insecurity (cybercrime), and most importantly, level of government

intervention, for instance entry requirement into the financial industry etc. Also some inherent problems in Africa were identified, for instance low level of infrastructures, and technical expertise. Participant 3 added that some factors are peculiar to some countries, for instance in Zambia, low population and lack of financial literacy are significant impediments to FinTech growth in the country. Participant 5, 10 and 14 added that access to capital is also a huge impediment to FinTech establishment and development.

These responses can be summarized as follows: FinTech start-ups need adequate capital base, such capital can only be provided by banks or venture capitalists. If FinTechs are rivals to banks, access to capital is definitely impaired, which in turn will hinder FinTech development. On the other hand, venture capitalists are attracted to jurisdictions with favorable policy/regulation to their industry of interest (Cumming & Schwienbacher, 2018). FinTech customers need to be aware of, and educated on the FinTech products and services, technological expertise are needed for efficient development of FinTech Apps. This analogy brings us back to the FinTech ecosystem, which includes, the finance providers (banks, venture capitalists), government (regulators), financial customers, technology developers, and the FinTech start-ups themselves. This result confirms existing literature that any disconnection among the FinTech ecosystems will definitely delay FinTech development and operations (Yazici, 2019; Zalan & Toufaily, 2017). Until the entire ecosystem is ready and connected, FinTech expansion will be delayed, and their ability to transform the financial system is compromised.

4.3.1.5 Risk Inherent in FinTech

Despite the benefits of FinTech, all participants indicted that FinTech start-ups pose some level of risk both to individuals and organizations. For instance cyber-crime has been on the increase due to influx of FinTech, therefore financial clients are becoming

more watchful despite the envisaged and identified benefits of FinTech start-ups in the economy. Privacy issue is also an issue of concern as FinTech depends on high level of big data, therefore illegal access to clients' data might lead to court cases and payment of fine. Participant 5, 12 and 15 mentioned that the risk FinTech pose to the incumbent financial institution is the high level of revenue loss bank has experience due the shift by some customers from banks to FinTech applications due to the level of efficiency tagged on FinTechs. Participant 6 brought in a different and interesting point on the risk imposed by FinTechs, and said: *if not checked, FinTech operations will escalate money laundering issues, especially if no limit or appropriate limit is set on number and volume of transaction within a specific period of time".*

Financial institutions are usually exposed to diverse forms of risk, including interest rate risk, exchange rate risk, liquidity risk, solvency risk etc. However, FinTechs are exposed to unique form of risks, which include risk from the finance industry, as well as risks from technology/telecommunication industry (Didenko, 2017). This results are in accordance with existing literature, which suggests that the interconnectedness between finance and technology risk has exposed FinTech to more cybercrime compared to incumbent financial institutions (Ryu, 2018). Therefore, the government is also watching and monitoring the level of cybercrime financial clients are exposed to, which will determine the extent of flexible or strict regulatory policy to be proposed towards FinTech.

4.3.2 Performance of TelPay

Though TelPay is relatively new, and on average, users have used it for the period of 12 months. One could posit that its performance evaluation is too early, however, this evaluation is vital as it will enable TelPay developers to understand users' experiences, thereby learn how to improve TelPay's functionality as well as how to pitch the

establishment of TelPay in other African countries. To assess the performance of TelPay, participants were asked questions relating to reasons for choosing TelPay, its functionality, and usage. Some of the participants have used FinTech Apps for the first time, only participant 2, 5, 9, 10 12 have used alternative App to TelPay. All the participants acknowledged that TelPay is a unique App, very good, affordable, easy to process, easy to use, flexible etc., (see word cloud in figures 4.8a to d).

From the word cloud, affordability is widely pronounced, followed by ease of usage, good performance, flexibility, fast etc. There is also an indications of credit/loan provision in the cloud. This is because, TelPay provides automated App for users to obtain devices on credit and pay in instalment later, at the same time, the users control the installation, the processes, and the operations of the App. This result posits that people were attracted to TelPay due to its affordability, along the line, they found that the App is unique, the process is easy and flexible, the functionality is efficient and precise. According to participant 15, TelPay is a state of the art App, and he quotes: *"It has been a relaxed process, not a complicated one at all and it's easy to use. The functionality has been good until now. I have not experienced any technical issue with any of the gadgets that I purchased or anything and I think the functionality of TelPay and their product is very precise and okay*".

From the word cloud in Figure 4.8a, the word "difficult" slightly appeared[5], because participants frequently used a sentence saying "it is not difficult, it is easy". This sentences were mostly used by participants to deeply explain how satisfied they are, and how stress-free TelPay services are during usage.

[5] Note that the word cloud is generated verbatim from the interview transcripts

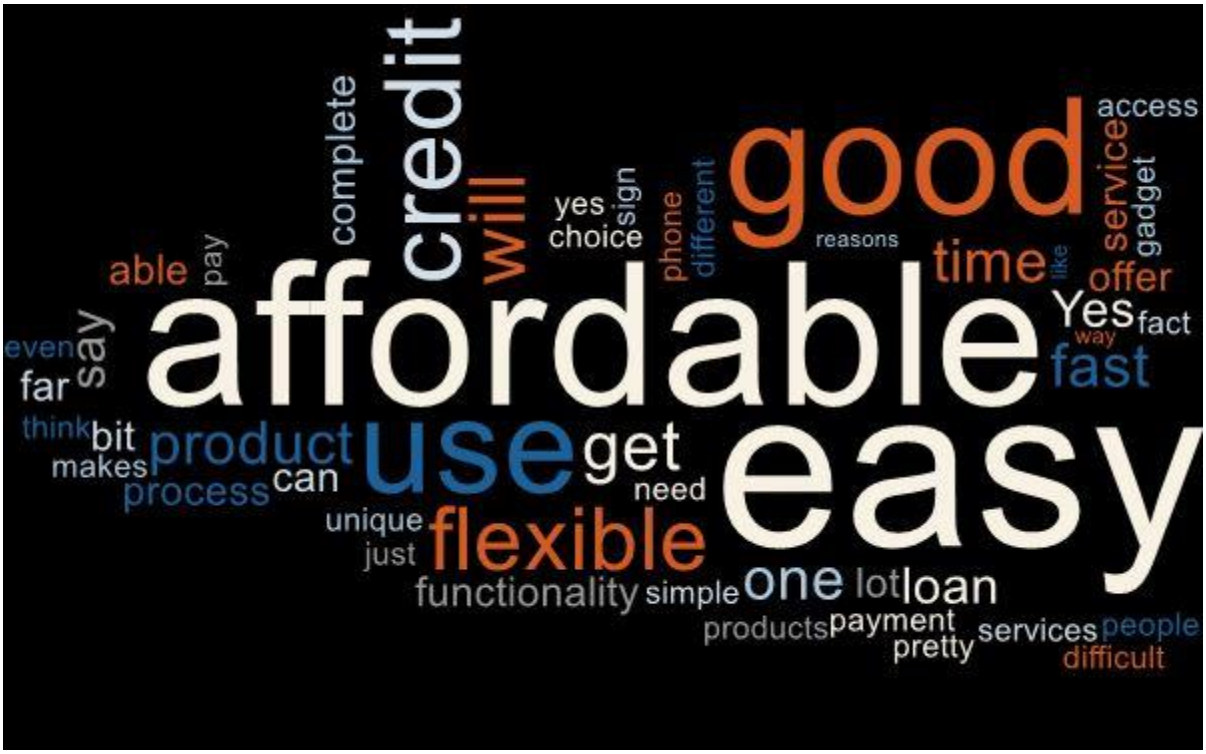

Figure 4.8a: Word Cloud for overall TelPay performance

To evaluate participants' opinion from different countries (Zambia, Ghana and Kenya), word could is presented for the three different countries (See Figures 4.8 b, c and d.). The results show that the three countries have similar perception towards TelPay usage and functionality, where the service is affordable, usage is easy, and functionality is good and efficient. When asked "Do you consider TelPay an affordable App? From Zambia participant 2 said: *"Mostly it's easy to access because it doesn't cost you a lot, it doesn't cost you anything at all"*. While participant 3 said: *"Yes, I do because you don't necessarily need the internet to use TelPay it also utilizes the ussd short code which I think is very, very good especially for people that afford bundles on a regular basis"*.

Figure 4.8b: Word Cloud for TelPay performance in Zambia

For Ghana, despite being affordable, flexible, easy, fast, good, and efficient, TelPay offers a unique service which has not been experienced in Ghana, or any other African country. Participant 10 said: *"TelPay is offering something no one else offers, which is the ability to purchase a device. There isn't another provider that provides the same service in Ghana"*. The participant later mentioned that, TelPay offers a natural service that does not require much explanations, he concluded by saying: *"It gives a good user experience"*. Participant 9 added *"TelPay is fast, it saves time, and it is very easy to use. It is user friendly. The platform is easy to use. There are not many bugs on it"*

Figure 4.8c: Word Cloud for TelPay performance in Ghana

In line with Zambia and Ghana, TelPay users in Kenyans are happy and satisfied with the service they receive from TelPay, including being affordable, easy to process and use, convenient, less time consuming, and efficient. In line with other Kenyan participants, participant 12 said "*The fact that it's very easy to access the services, it's fast and simple to use".* Just like Ghanaians, Kenyan participants recognized the uniqueness of TelPay and used the word "legit", where participant 15 said *"What I can say is that TelPay products are* ***legit*** *and offered on credit and payment done in instalments which is more preferable to me. Their cash price is a little bit lower and I can say that their products are very okay and cost effective".*

From the word cloud (Figures 4.8b, c and d), flexibility is more pronounced in Zambia and Ghana, than in Kenya, this does not imply that TelPay service in Kenya is not flexible. When asked the question of what attracts TelPay users, participant 13 (from Kenya) responded: *Their flexibility, their ease and they accept payment from even the other financial*

institutions. So, I think they are all round and that flexibility aspect of it makes it a great choice". The response implies that though flexibility is missing from Kenya's word cloud, some participants in the country used the word "flexibility" to describe TelPay's services.

Figure 4.8d: Word Cloud for TelPay performance in Kenya

When asked if they can recommend TelPay to anyone, all the participants are of the opinion that TelPay is worth using and should be broadcasted to the whole world. For instance participant 1 (from Zambia) responded by saying: "*on a scale of 10, one being lowest and ten highest I can recommend it to people 9.5"*, participant 8 (from Ghana) responded: *"I will recommend it to people because it's good"*. While participant 11 responded (from Kenya): *"100% percent recommendation, I have been doing that I can still do it again especially to the people I'm sure are not able to afford it on cash basis"*. However, participant 6 from Ghana had unfavorable experience where the delivery of her device was delayed, when she wanted to return it, she was turned down, because she had already broken the seal. Therefore,

she is not comfortable recommending the device to any one, due to the alleged excessive terms and conditions.

Despite participants 6's experience, it can be argued that TelPay performance in the three countries of operation is efficient and most satisfactory to the current users. Most importantly, the praise on TelPay came from both those who have used related Apps and those who are entirely new to FinTech Apps. For those who previously had related Apps, comparing TelPay with their previous Apps gives them the opportunity to appreciate what TelPay offers. While those who are entirely new to FinTech Apps feel that TelPay has cracked the nut of financial technology in their country. However, it is advised that TelPay speed up their delivery process.

4.3.3 Survival of TelPay

Along with all the above mentioned benefits and features of TelPay, all the participants believe that TelPay has come stay in Africa, especially if it continues with the level of quality services it started with. The assurance of TelPay's survival in African is so strong, to the extent that participants 4 and 5 (Zambia) said almost same thing when asked if TelPay will thrive in their country or Africa as whole "*Most definitely, it's a good service*, said participant 4, while participant 5 said: *"I think it will go a long way, it's a good service"*.

Most respondents from Ghana believe that TelPay will definitely survive especially if it takes peoples' recommendations, feedbacks, and comments into considerations, secondly, if it takes security seriously, for instance assuring users of reduction in cybercrime, thirdly, if it provides more awareness of the services, especially as current users are satisfied with the services.

From Kenya perspective, respondents believe that TelPay will definitely survive in Africa, for instance, the entire globe is drastically moving to technology, therefore

TelPay services are substantial to the economy. Secondly, African population is mostly low-middle income earners, who might not be able to afford smart mobile phone devices on cash. With TelPay offering such devices on credit basis (in an efficient and trusted platform), it will attract low income earners who are desperately in need of devices for interconnectivity. This is in accordance with participants' 12 and 13 responses. Participant 12 responded to the question by saying: *Yes, it surely will. This is because most people are unable to acquire a handset on cash and unable to save but considering the fact that TelPay enables them to get handsets through credit and pay after some time, it is very encouraging to everyone and the time limit is suitable so it will thrive.* Participant 13 added: "*TelPay will certainly survive and do good in Africa if it continues with the same good work it is doing right now*" and participant 14 added that TelPay will thrive, it's a matter of time"

From above responses, it can be concluded that TelPay will definitely survive in Africa, especially if it maintains and/or improves on the quality of the services it currently offers. More so, it must pay attention to comments, recondition, and feedback from current users for future improvement and amendments.

4.3.4 TelPay as an Enabler of Financial Inclusion

The intuitiveness of TelPay is based on creating financial inclusion for all, in Africa, which it started by developing platforms that enable access to mobile devices. Access to mobile services in turn enables access to mobile financial transactions, which in turn creates or enables financial inclusiveness (Arner et al., 2020; Lal & Sachdev, 2015; Philippon, 2019). To asses TelPay's contribution to financial inclusion in Africa, focusing on the three countries of its operation, participants were asked question on that regard.

When asked if TelPay has in any way contributed to financial inclusion, participants responded that TelPay has opened the door of financial inclusion in Africa. All the

participants started their sentences with **"yes",** some added yes of course, certainly yes, yes 100%, yes, why not. These responses with yes are confirmed in Figure 4.9, where the word cloud has **"yes"** as the most pronounced word followed by access, loan afford, and other words that indirectly explain access to credit or loan.

Figure 4.9: Word Cloud for TelPay contribution to financial inclusion

From Zambia, Participant 3 explained that FinTech start-ups thrive on peoples' connectivity to technology, internet or USSD based services. This means that the ability of FinTech to assess different market segments depends on the number of people in such segments having access mobile devices. Based on that, TelPay has contributed to financial inclusion by giving people (especially low income earners) the opportunity to have access to mobile devices through loan, thereby increasing access to finance through FinTech Apps. This is in line with participants' 1 and 5 responses, that the major hindrance to access to finance through FinTech is lack of access to smart mobile devices. They explained that TelPay has played a huge role to mitigate this hindrance

by increasing the number of people with access to smart mobile device through an automated platform.

In Ghana, TelPay users were certain that TelPay has contributed to financial inclusion in the country. Participant 8 confirmed that his company partners with TelPay, and that partnership has helped the company to move volumes of products, which they have not been able to do without TelPay. Participant 9 added: *"TelPay allows other businesses to use their platform for their customers to get easy access to them, TelPay is helping many businesses inside and outside the financial services sector".* Participant 10 came up with the response: *"certainly yes". In Ghana access to credit is not easy, TelPay offers that. It certainly promotes financial inclusion".*

From Kenya perspective, participant 11 stressed on how TelPay has given the poor the opportunity to have access to mobile device of their choice, which they may have not been able to acquire on cash basis. He explained that with so much constraints in the third world countries (Africa), along with the recent pandemic, TelPay has provided inclusiveness for those who are not able to afford devices on cash, by helping then to get it on an affordable credit facility, through fast and reliable platform. This is in line with response from participant 14, who said: "*Those who are having financial constraints can be able to buy the same product in instalments so there is inclusivity to everyone, those people with money and those with little money, so I believe you are including all the people".* Participant 15 who works for a particular bank in Kenya (a partner with TelPay) confirmed that TelPay has facilitated the use of the mobile App, where there has been an increase in the number of customers who assess FinTech services using their mobile phones.

From these responses, it is concluded that TelPay has been of a great contribution to financial inclusion in the three countries of its current operation. This is confirmed by having all the participants from the three countries responding with assertion and evidence that TelPay has created a door-way to financial inclusion in their countries, by creating inclusiveness to the poor and low income earners, through access to credit,

secondly increasing access to smart mobile device which increases access to mobile financial transactions. The findings of this research supports existing literature in that there is a link between FinTech and financial inclusion (Arner et al., 2020), however TelPay did not just depend on contributing to financial inclusion through access to credit, it also developed and provided platforms that enable access to mobile devices, which in turn enables and improves access to mobile financial transactions.

4.3.5 Regulation of FinTech/TelPay

Due to the unique risk inherent of FinTech (finance and technology risks), regulation of FinTech has attracted the attention of researchers (Arner et al., 2017; Zetzsche et al., 2017), with many suggestions and recommendations to the policy makers (Gerlach, Simmons, & Lam, 2016; Magnuson, 2018; Omarova, 2020; Treleaven, 2015). Some of the recommendations include having a sandbox, where FinTechs will be placed on a policy of "watch and see". This policy allows regulators to watch how FinTech operations affect individual clients, the government, and the economy in general, before taking any action against or in favor of FinTechs. Some advised that FinTech should be placed on strict rules due to high risk of technology it is exposed to, which leads to increase in cybercrime in the financial system. While some suggest that FinTechs should be placed on favorable policy to enable them compete with the existing financial institutions, which will indirectly push the incumbents to improve in their financial services

Due to the inconclusive view on FinTech regulation, this study seeks the opinion of the research participants on the FinTech regulation. They were asked questions to provide their opinion on government support for or against FinTech, and if government should support the influx of FinTech, set up rules to guide FinTech operations.

All the respondents were of the opinion that government should allow FinTech start-ups to flourish, and promote its growth, by putting up some measures to protect them from excessive competition with existing giant financial institutions. For instance government can promote partnership between FinTechs and existing financial institutions, rather than allowing competition between them. Such support will allow for more financial inclusiveness, innovation, in turn propel the whole economy into the future. Some participants mentioned that government should give tax breaks, provide certain incentives, and grant wavers to FinTechs. Government should also allow for global collaboration between FinTech, which will enable transferring of skills from one country to the other. Entry requirements should also be relaxed for FinTechs to encourage the new innovators and allow them access to the financial system. Participant 10 responded by saying: *"Certainly. Government should allow FinTechs to grow, they require a lot of support. Government should help make it easier so that these innovative companies will create new services"*.

However, the participant do not mean that there should be a smooth running of FinTechs without rules and guideline. They all posit that government should also introduce polices to protect customers and other market players from being scammed and to curtail excessive risk taking behavior by FinTechs. There should be regular checks and balances from a dedicated body that should oversee the operations and FinTechs. However, such regulations and policies should not be too strict to stiffen innovations and growth, but should be strong enough to ensure clients' safety, as well as allow FinTechs to pick up from their infancy stage. .

When asked how FinTech should be punished for noncompliance to regulations and policies set by the government, fined or blacklisted? Almost all the participants were of the opinion that FinTech start-up that does not comply with the set-out rules and standards should be fined, if noncompliance persists, such FinTech should be blacklisted. Participant 15 posits that any FinTech or financial institution that does not

comply with government set-out rules and policies is definitely engaging in illegal activities that could jeopardize security, and expose its clients' information to security challenges. Therefore strict penalties should be set for any noncompliance, for instance huge fines for first default, and blacklisting, if default occurs the second time. Participant 3 and 5 added that FinTech is inherent with interconnected risk from finance and technology, which is extremely sensitive to cybercrime, therefore any defaulted operator needs to be punished accordingly, to avoid excessive risk expose by the FinTech start-ups. They posit that if fine alone is always imposed every time FinTech start-ups default, some FinTechs may have the tendency of not frequently complying with policies and regulations, with the notion that fine can easily be paid by them. But if strict punishment is imposed, like blacklisting (especially after first fine is paid relative to, or on same default), they may really comply with policies and standards, and provide good services to clients.

From those responses, it can be concluded that government should provide an enabling ground for TelPay to flourish in Africa, especially with the identified benefits attributed to TelPay operations, most importantly, its contribution to financial inclusion. More so government should set out some less strict rules to guide the TelPay to ensure smooth operations, on the other hand protect clients from being exposed to cyber risk and crimes. However, TelPay should expect government punishment, should it default in any of the standards set by the government to guide its operations.

4.3.6 Challenges faced by TelPay Innovators

To understand the experiences and challenges encountered by TelPay innovators during the process of developing, establishing, and implementing TelPay, two TelPay innovators/developers were interviewed. Both developers explained that having sufficient technical support was a great challenge, especially in Zambia, which was the

first country of their penetration. Lack of sufficient technical support delayed preapproval process from the USSD (TelPay application). TelPay platform essentially requires and depends on technical capabilities, therefore having a reliable technical support is an advantage over any competitor in the market. The developers agreed that the solution for that has been to put together a new preapproval USSD flow so that customers don't fall of in the preapproval state, they want the flow to be as simple as possible for the customer. The response has confirmed that availability of reliable infrastructure is a requisite in the development and establishment of FinTech application, especially in Africa with less developed infrastructure.

In terms of jurisdictional challenge, the developers did not experience any regulatory or political huddles in the three countries of operation, therefore they believe that penetrating into other African countries might not be a difficult move, however, they have to still do some underground work before making any further move in to other countries.

When asked if there is anything they can do differently when expanding into other countries, their responses were similar, where they stressed the fact that there is no much mistakes to learn from apart from the challenges of technical support which has been corrected while in Ghana and Kenya. However, they intend to always ensure sufficient technical support to avoid having a repeat of Zambia's experience. Secondly, they intend to carry out extensive research on the country, the competitors, the market segment to capture etc. Thirdly, they wish to establish and maintain a better relationship with their partners. With such relationship, they will be fully assured of customer satisfaction, especially on the quality of products (mobile devices) and delivery time.

4.3.7 Chapter summary

In this chapter, the result of the interview were presented and interpreted. The chapter started by analyzing the demography of the respondents, including their career paths and own businesses, which all lean towards technology and finance. The next focus was on detailing and explaining participants' perception on FinTech, its benefits, risks, and factors that could hinder influx of FinTech in Africa. The explanations were also given from different countries' perspectives (Zambia, Ghana, and Kenya). TelPay performance and customers' satisfaction were presented using word cloud, which clearly showed the words that were most used by participants to describe TelPay's performance and level of service delivery. TelPays contribution to financial inclusion was explained, detailing how it has created inclusiveness through loan provision, enabling low income earners to acquire smart mobile devices to increase and improve their participation in mobile financial transactions. Because there is no outright regulatory policy set out for FinTchs, proposed regulation for FinTech/TelPay was also explained. Finally the challenges experienced by TelPay developers were presented in this chapter, followed by what the developers should do differently if they decide to expand into other African/emerging market countries. The next chapter presents conclusion of the research study

Chapter 5 Conclusion and Recommendation

5.1 Introduction

This chapter summarizes the entire research, focusing on the research findings, suggestions and recommendations to the both TelPay users and developers. Policy recommendations is also presented in this chapter, especially how government should support and regulate FinTech influx to avoid stiffening innovations, on the other hand avoid instigating unhealthy competition between the incumbents and the FinTech start-ups. Recommendation for further research is also presented in this chapter.

5.2 Demography of Participants

From the research findings, majority of the participants are from financial services, information and communication technology (ICT), and Engineering, most of them also focused on EduTech, web design, and graphic design and it's like as their personal businesses. They are relatively with higher educational qualification, between first degree and masters. This result reveals that most of TelPay users are tech savvy, which confirms literature that most people who are first attracted to FinTech applications are mostly those with knowledge of technology (Sung, Leong, Sironi, O'Reilly, & McMillan, 2019).

5.3 Opinion on FinTech Start-ups in Africa

The findings of this study is in line with existing literature that FinTech has introduced some benefits which will positively transform the financial system (Zalan & Toufaily, 2017). The study found that FinTech start-ups have provided diversified digital financial products and services, which has created options for financial clients, where they can have access to credit through affordable means and carry out payments conveniently

and efficiently. The study confirmed that FinTech in Africa has assisted low-end and medium-end financial customers to save, and carry out efficient, convenient, timeous, and cost effective transactions, which incumbent financial institutions have not achieved for many years. It was also identified that FinTech has provided social economic benefit by creating employment opportunities for individuals and high-tech consulting firms.

There has been a debate on the extent of FinTech disruption in financial system, where argument has been on FinTech competing or displacing, the incumbent financial institutions (Arner et al., 2015; Chiu, 2016). In this study, this argument continue between the three countries of review, where Zambia and Kenya believe that FinTech start-ups are great rivals to the incumbent financial institutions, with evidence that FinTech has impacted on some segments of the financial institutions, especially the payment system, the credit provision, and wealth management segments. On the other hand, evidence from Ghana indicates that FinTech start-ups are not yet rivals to incumbents, because some financial clients are still attracted to incumbents due to their competitive advantage over FinTech (Dapp et al., 2015; Teece, 1986), therefore in line with Dey (2016), FinTechs and incumbents might be partners rather than rivals, especially in Africa with less infrastructural development. It can be deduced that this study contributes to the ongoing debate on FinTech disruption of the existing financial institutions.

Another ongoing debate is that FinTech may take over the incumbent financial institutions. This debate has been on within some academics, policy makers, and financial clients (Bussmann, 2017; Gomber, Kauffman, Parker, & Weber, 2018; Oshodin, Molla, Karanasios, & Ong, 2017). Same inconclusive debate emanated in this study among the three countries reviewed in this study. Zambia believes that the extent of takeover will depend on government policies, while Ghana believes that there will not be complete take over, because some financial clients (the aged, risk averse etc.) will

still be attracted to incumbents. While Kenya argues that there will be a complete takeover of financial institutions by FinTech. Kenya's argument is based on the fact that FinTech targets mostly the unbanked, small and medium enterprises (SMEs), and millennials, which are more in Africa (Zalan & Toufaily, 2017). This study deduced that the extent of FinTech taking over the incumbent as well as the extent of the rivalry will exclusively depend on the level of government intervention and polices to regulate FinTech start-ups. Therefore, it can be concluded that the effects of FinTech influx into the financial system depends on government policy to either safeguard or sell-out the incumbent financial institutions. A typical example is China's case where FinTechs were given some opportunities to settle in the country without much distractions with unfavorable laws and policies (Kshetri, 2020; Wang & Huang, 2017). This approach deployed by the Chinese government positively affected FinTech growth in the country, today China is the largest FinTech hub in emerging market (Kshetri, 2020). Therefore, it can be established that the influx, operations and growth of FinTech will largely depend on government intervention on either to promote or stiffen FinTech establishment.

Another notable finding is on the success and failure of FinTech. The three countries involved in this research indicated that FinTech has come to stay, the judgment is based on the speed and efficiency of the transaction FinTechs engage in. Though there are many factors (internal and external) that lead to business failure. Some of the factors identified in this study include, access to capital, infrastructure, awareness of the products/services, cybersecurity, policy/regulation. The result implies that, all things being equal, especially the level of government policies and interventions, FinTech start-up are unlikely to fail, even in Africa. Most importantly, as the target market of FinTech is unbanked and low income earners, which are more amenable in Africa.

5.4 Opinion on TelPay

The TelPay Group is a FinTech software development company, with the aim to provide mobile device financing to the mostly unbanked population, focusing in Africa, and other emerging market countries. The App is currently in operation in three African countries (Zambia, Ghana, and Kenya), and is considering to be established in other African and emerging market countries.

To evaluate how TelPay has performed so far within the four years of its operation, word cloud was used to analyze the words research participants used to describe TelPay. The word cloud clearly show that people used the following words to describe TelPay; affordability ease of usage, good performance, flexibility, fast, loan, credit, etc. Among these words that described TelPay operation, affordability is widely pronounced followed by ease of usage. This result posits that people were attracted to TelPay due to its affordability, along the line, they found that the App is unique, the process is easy and flexible, and the functionality is efficient and precise.

From different country's perspective, the three countries have similar perception towards TelPay usage and functionality, but for Ghana, in addition to being affordable, flexible, easy, fast, good, and efficient, Ghanaians reported that TelPay offers a unique service which has not been experienced in Ghana, or any other African country. Therefore, this study posits that, TelPay performance in the three countries of its current operation is efficient and most satisfactory to the current users.

The result also shows that TelPay has been an enabler of financial inclusion in the three countries of its current operation. According to the respondents, TelPay has created a door-way to financial inclusion in their countries, by creating inclusiveness to the poor and low-income earners, through access to credit. What made TelPay unique as an enabler of financial inclusion is that it did jut just depend on contributing to financial inclusion through access to credit, rather it also developed and provided platforms that

enable access to mobile devices, which in turn enables and improves access to mobile financial transactions. The study also concluded that TelPay will definitely survive in Africa, especially if it maintains and/or improves on the quality of the services it currently offers.

5.5 Recommendations

5.5.1 Recommendation to TelPay Users

From the responses of the research participants, it was confirmed that TelPay is a good App, easy to use, simple to operate, and convenient. The participants called on potential users to come on board especially if they are not able to finance themselves in this era of technology where everyone wants to be an IT expert. It is recommended that those who need financial help to acquire smart mobile devices for mobile financial transactions should check out on TelPay. Quoting participant 12: "*What I can advise my friends and everyone is that TelPay is a good App and we should all use it*". Participant 15 expressed his assurance that he has used TelPay for more than one year, and has not experienced any problems, therefore is calling on potential users to make their try, as the product is long-lasting.

This advice is in line with every other participant, where participants 6 and 11 added that users should read and study the terms and conditions very well before signing up with the App. Understanding the terms and condition will enable them make a decision, and avoid any feelings of disappointment should they experience otherwise.

Secondly it is recommended that users should be vigilant while signing ups and when using the App, they should understand what they sign, and ensure they are in TelPay's platform to avoid being scammed by online fraudsters. Third, it is advised that if users feel that something has not been done well or something should be added or excluded, they should be open to give TelPay feedback and/or comments on the products, its services and its processes.

5.5.2 Recommendation to TelPay Developers

From the responses of the research participants, the following recommendations were made to TelPay innovators and developers

- TelPay should look into financing other useful technology products that can also enhance mobile financial transactions, for instance provision of data and air time for users.
- From the research result, it was found that most TelPay users are in the financial institutions, Information technology and engineering fields. Though TelPay platform is easy to use, but it should be more simplified to ensure efficiency, especially for those who are not technological savvy. TelPay should also consider opening up a wider network to reach out to as many people as possible, not just people in urban centers but people also living in rural areas. Such move will help TelPay to capture the market in its entirety, and increase financial inclusiveness.
- TelPay should equip its customer service department to be able to attend to users queries on time. Even if the customer service could not provide immediate assistance, they should be in the position to give suggestions or call for help if need be.
- At the moment, TelPay offers a unique service in these three African countries, however, it should always watch out for competitors and prepare for the fight in the market.
- TelPay should consider partnering with so many financial institutions to create some level of competition among the financial institutions, such level of competitiveness may lead to a more efficient service provision. On the other hand, TelPay may decide to work towards providing the finance, instead of engaging with financial institutions. Such move may lead to providing the smart mobile device at a cheaper rate, in turn lead to cost reduction.

- Though TelPay provides insurance coverage for the mobile device, it should also consider providing a tracking service to assist users in the event of loss.
- TelPay should ensure quick delivery of the device to customer, if possible expand partners to ensure availability of products.
- Most importantly, though TelPay has a unique mechanism to identify qualified clients for the device in terms of affordability, however, default can occur due to some reasons even after a client is qualified for a loan, therefore TelPay should create a mechanism that reduces the default rate even after a client is qualified. This actions will mitigate the risk of a client being blacklisted due to default, as high rate of blacklisting will discourage potential clients.
- Over time, there would be more functionalities that would expand the use of the application, therefore, TelPay should pay attention to comments, recondition, and feedback from current users for future improvement and amendments.

5.5.3 Policy Implications and Recommendations

The most important policy recommendation is on the regulation of TelPay and FinTech in general. From the research findings, it is recommended that government should provide an enabling environment for TelPay to flourish in Africa, especially with the identified benefits attributed to TelPay operations, most importantly, its contribution to financial inclusion. More so, government should set out less strict rules to ensure smooth operations of TelPay and protect clients from being exposed to cyber risk and crimes. However, TelPay should expect government punishment, should it default in any of the standards set by the government to guide its operations.

5.5.4 Recommendation for Further Research

TelPay is relatively new in operation, and has covered only three countries within four years of its operation, therefore, this study is based only on the three countries of TelPay's current operation. The result of this study did not detect any country specific factors that has affected TelPay operation, therefore, it is recommended that further research be carried out when TelPay has expanded into other countries, especially outside Africa (within emerging market). The further research should focus on finding out if users' experience will remain the same and if country specific factors will affect performance of TelPay outside Africa.

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Appendix A: Sample of Interview question

INTERVIEW QUESTIONS

Demography

Age…… Gender…….

Country……

Highest educational qualification……..

1. What is your professional background and work experience?
2. Do you currently work with any organization or you are on your own business?
    a. If you are working, what are your roles and responsibilities at your organization?
    b. If you own your business, what type of business do you do, and what are your roles?
3. What is your opinion about FinTech companies in financial services?
4. Do you foresee FinTech start-ups taking over the financial institutions?
5. Do you foresee FinTech start-ups or products to impact any segment of your company/business?
6. Do you think FinTech start-ups, at this stage, are more likely to fail?
7. Do you foresee FinTech companies as rivals to the incumbent financial services providers?
8. In your opinion, what are the factors that are hindering FinTech start-ups or new market entrants into Africa?
9. What do think are the risks FinTech start-ups pose
    a. To customers
    b. To the financial industry?
10. What are the benefits of Fintech that are accrued to financial customers, both individuals and organisations?
11. How long have you been using TelPay?
12. Have you used any other FinTech product similar to TelPay?
13. What are you reasons for the choice of TelPay?
14. Was it difficult for you to sign in with and complete TelPay process?
15. In your own knowledge, do you consider TelPay an affordable app? Explain
16. How has the functionality of TelPay be so far?
17. Do you think TelPay has in anyway contributed to financial inclusion? Explain
18. Do you think TelPay will thrive in your country or Africa as whole? Explain
19. In your opinion, should government support the influx of Fintech start-ups in Africa?
20. If so, what can government do to promote growth in the FinTech space? If not so, what can the government do to prevent influx of Fintech start-ups?
21. Do you think non-compliant FinTech companies must be fined or blacklisted from the market?
22. How well can you recommend TelPay to people?
23. What other comments do you have for TelPay users and potential users
24. Do you have any complain/suggestion/ recommendation to TelPay developers?

To TelPay developers?

1. What was your experiences while penetrating into the 3 African countries so far?
2. What will you wish to do differently/better when targeting other African countries?

Appendix B: Participant Informed Consent Form

Dear ……

My name is Sibsiso Mvelase, I am a master's of Management in Finance and Investment (MMFI) student at Wits Business School, University of the Witwatersrand, Johannesburg, South Africa. I am writing to invite you to be a participant in my research interview. I chose you because you are a use of the new lunched TelPay app in your country. This form is part of informed consent process to enable a participant take part in my research.

The purpose of this study is to evaluate the performance of FinTech applications focusing on TelPay. Your participation and I will respect your decision whether or not you choose to participate in the study. You may withdraw from the study at any time, if you decide or feel uncomfortable with the interview. If you withdraw, none of your information will be used in the study.

The interview will last between 30 to 45 minutes. All information you provide will remain confidential. I will use a personal code in place of your name to identify you in this case study. I will keep all electronic data on a password-protected file. I will lock all other data in a filing cabinet for 5 years. After 5 years, I will shred all documents and erase all electronic files.

If you partake in this study, it will not pose any risk to your safety or you wellbeing, neither will it pose any risk to your financial account, including you FinTech accounts.

There will be no compensation for participation in this study.

Should you want more clarifications on this, you can contact Ms Meisie on +27 83 588 8271 or Dr. Euphemia on +27 79 603 2283. Please print and keep a copy of this consent form for your records. By replying to this email with the words, "I consent", you are agreeing to the terms of this informed consent form.

Statement of Consent:

I have read the information above, and I understand the requirements. I am able to make an informed decision of participating in this survey. By signing below, or typing I consent in the body of the email, I am agreeing to the terms of this consent form. I will keep a copy of the consent form for my records.

Printed Name of Participant _____

Date of Consent _____

Participant's Signature _____

Researcher's Signature _____