

**Doctoral Dissertation:**

**Assessment of the effectiveness of  
Fintech on banking digitalisation  
efforts in Uganda**

Written by: Tapiwanashe James Museba

**ISM** THE INTERNATIONAL  
SCHOOL OF MANAGEMENT

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## DETAILS

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Assessment of the Effectiveness of Fintech on Banking Digitalisation  
Efforts in Uganda

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## **Declaration**

I hereby certify that I am the author of this dissertation and this work contains no material which has been accepted for the award of any other degree or diploma in any university, business school, or any tertiary institution and to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text, whether quoted directly or paraphrased according to accepted citation conventions.

## **Abstract**

This study focused on assessment of the effectiveness of fintech on banking digitalisation efforts in Uganda, investigating both the impact of fintech on retail banks and the adoption of omnichannel strategies in the country. The financial services industry is facing a disruptive innovation phase, driven by automation and social media connectivity, changing the fundamentals of small business access to financial products and services. Rapid development of technological innovation applied to financial services, also known as financial technologies, or fintech, has created new products and delivery channels. In this regard, the study's main objective was to analyse the financial industry competitive dynamics drift paying particular attention to mobile money as an alternative digital financial service. Digital tools have a broad impact on the traditional business models used by banks, thereby creating new ways to access financial services characterised by a combination of speed, efficiency and customer-oriented strategies to meet client demands. The literature review explores the impact of technology on the different banking business models applied, the impact of electronic commerce and the adoption of non-traditional banking channels in the Ugandan banking sector, among other issues. The triangulation approach is applied as the most suitable methodology of testing the hypotheses of the study as it captures both the qualitative and quantitative as well as descriptive aspects of the research. Thus, the most appropriate instruments used to gather the required information and data were the structured questionnaire, panel interviews and the analysis of secondary data. Results obtained suggest that the full automation of financial institutions' client relations platforms have led to improved customer experience and new product innovations. The key competitive advantages of utilising fintech are achievable through operational excellence, integrating different business models. The study also provides some sound views pertaining to the contribution made through financial inclusion in the Ugandan mainstream economy.

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## ACRONYMS

AI	Artificial intelligence
ATM	Automated teller machine
BCG	Boston Consulting Group
BOU	Bank of Uganda
CGAP	Consultative Group to Assist the Poor
DLT	Distributed ledger technology
FIA	Financial Institutions Act
Fintech	Financial technology
FNB	First National Bank
GDP	Gross domestic product
GSMA	Global System for Mobile Communications
ICT	Information communication technology
IT	Information technology
KYC	Know your customer
MNO	Mobile network operator
MOMO	Mobile money
MVNO	Mobile virtual network operator
OECD	Organisation for Economic Co-operation and Development
QoS	Quality of service
ROE	Returns on equity
SMS	Short message service
UBA	Uganda Bankers Association
UCC	Uganda Communications Commission
US	United States

## **Chapter 1: Introduction**

This study focused on assessment of the effectiveness of fintech on banking digitalisation efforts in Uganda. This was achieved by investigating both the impact of fintech on retail banks and the adoption of omnichannel strategies in Uganda. The study explored the strategies that are being adopted by incumbent banks in the face of potential disruption to remain competitive by focusing on the digital agenda.

According to the Global System for Mobile Communications, or GSM Association (GSMA, 2012), over a billion people in developing and emerging markets have mobile phones but no bank account. Many low-income people store and transfer money using informal networks, but these have high transaction costs and are prone to theft. Mobile money (MOMO) service is filling this gap by offering financial services over mobile phones, and transactions offered are from simple person-to-person transfers to more complex banking services. The major success story of MOMO service is Africa Safaricom's Mpesa in Kenya with which over 25 million customers transact via MOMO service.

### **Background**

The banking landscape is undergoing significant changes and current business models are under scrutiny. It is well recognised that the banking sector is very critical for improved productivity, economic growth and increased savings. According to the World Bank (2015), a deep and widely accessible banking system plays a pivotal role in improving income levels and lifting people out of poverty in order to boost prosperity. Kearney (2009) reported that the five forces shaping the banking industry are customer segmentation, technology through digitisation and infrastructure, and new strategic management enhancing competitiveness in retail banking. Digitisation is “the most significant of several universal trends and disruptive new entrants which may fundamentally change the financial services competitive environment” (Boston Consulting Group [BCG], 2013). Significant innovation has recently emerged from within the banking

industry in line with technological changes. At least three aspects that may influence banking business models are artificial intelligence (AI), distributed ledger technology (DLT), of which blockchain technology is a part of, and biometrics. Banks have to keep up with the pace of technological changes to meet customer needs and stay competitive.

According to Accenture (2016), new technologies are radically changing the traditional banking business model. These changes range from the way banks interact with customers to the way banks manage their middle and back office operations; technological innovations are challenging traditional processes across the entire value chain. Customers are progressively adapting to digital disruptions with more and more new types of competitors and solutions arising in this space driven by fintechs.

Fintech is shorthand for financial technologies, ranging from digital securities clearing to mobile banking that are bringing about the digital transformation of banking and finance. Philippon (2016) pointed out that examples of innovations that are central to fintech include cryptocurrencies and the blockchain, new digital advisory and trading platforms, AI and machine learning, equity crowdfunding, mobile payments systems and person-to-person lending.

BCG (2013) asserted that retail banking practices would materially alter by the next decade and the envisaged trend is manifesting already in significant changes in multiple channels distribution modes. The report further predicted that higher quality and higher frequency interactions would characterise the relationships between customers and retail banks in the near future. The trends are already registering increases in customers' interface with banks across multiple channels especially through the electronic platforms. Distribution assumes over 50% of retail banking cost and therefore the organisation of the delivery channels should attract critical attention of banks. Today, bank clients interacting with a branch occurs only once or twice per year while bank interactions via mobile channel are 20 to 30 times per month.

Sorrentino (2015) concluded that the banking industry is “ripe for change” with the growing popularity of blockchain technology, the rise of fintech start-ups and the dominance of millennials. Arner, Barberis, and Buckley (2015) further asserted that fintech financial “is revolutionizing the way in which financial services are conducted, with increasing convenience and lower operational costs being its key differentiators” (p. 415). *The Fintech Revolution* (2015) echoes similar sentiments: “fintech promises to reshape the financial industry by cutting costs, improving the quality of financial services and creating a more diverse and stable financial landscape” (p. 1). According to PwC (2016), 83% of financial institutions believe that various aspects of their business are at risk to fintech start-ups; thus, there is a growing need for financial firms to build capabilities to leverage and/or invest in fintech in order to maintain market share and stay competitive.

The tools developed by innovative fintech firms are empowering individuals to gain greater control over their financial destinies and enabling smaller, incumbent financial institutions to compete with large global institutions and technology firms (McKinsey, 2016a). Payments and lending start-ups lead in both consumer acceptance and funding. Proof-of-concepts for cryptofinance projects are receiving attention from global financial institutions and also from financial media. They are also receiving the highest levels of venture capitalist funding. This study, however, focused more on MOMO and digital payments as driven by mobile network operators (MNOs) as they constitute a major adjacent market service revenue stream for MNOs. Some information on the background of Uganda provides an idea of this innovation’s market capitalisation.

Uganda background. Uganda is a landlocked country with a total surface area of 241,550.7 km<sup>2</sup>. Uganda borders Rwanda and Tanzania in the south, South Sudan in the north, Kenya in the east, and the Democratic Republic of Congo in the west. The country is sub-divided into 112 districts that fall within 8 sub-regions, namely: Central I and II, East Central, Mid- and

South-West; West Nile, Mid-North, North Eastern and Mid-Eastern. Uganda is one of the fastest growing countries in East Africa with a gross domestic product (GDP) growth of 6% annually, but this is in contrast with high levels of financial inequality in rural areas that suffer from inadequate access to education and financial services. Mobile phone penetration is about 65% covering 97% of the population compared with financial services covering only 14% of the population (Bank of Uganda [BOU], 2014).

Currently, Uganda has nine MNOs: MTN Uganda, Africell, Airtel Uganda, Smile Telecom, Uganda Telecom Limited, Sure Telecom, K2 Telecom, Smart Telecom and, the latest, Vodafone Uganda. The development of MOMO by MTN in Uganda has followed a steep trend with other mobile network providers introducing similar services.

**Demographics.** Uganda is a multi-ethnic country with about four major ethnic groupings, namely the Bantu, Nilotes, Hamites and Nilohamites, categorised according to the languages they speak. According to CIA World Factbook (2016), the country has a total population of 37.1 million persons with 17,935,456 constituting males and 18,921,357 constituting females. It is estimated that 80% of that population is dependent on and predominantly derive their livelihood from agriculture. Uganda has 95% of its population under the age of 55 years and 70% under the age of 25 years, which evidently shows that it is rich with a young population (CIA World Factbook, 2016). Uganda offers strong GDP growth potential with a young and fast-growing population that is inhibited by inadequate banking infrastructure. It is this vibrant young population that is ripe for technology adoption.

**Trends in Ugandan mobile payments transactions (2008–2018).** GSMA (2012) pointed out that out of 140 worldwide MOMO deployments in 2012, it was estimated that “only eleven of those had reached 1 million registered customers and the number of those with over a 1 million active customers was even smaller” (2012, p. 5). This picture has since changed remarkably, and in Uganda the top two operators have a combined MOMO active customer base of close to 12

million as the adoption rate has been on the rise. Three of the deployments where MOMO usage has heavily increased is in the East African region — Uganda, Tanzania and Kenya. Kenya, the well-known front-runner in the implementation of MOMO, has played a major role in encouraging an increase in usage among its neighbours. The last 6 years has witnessed astronomical growth with over 272 MOMO deployments worldwide, with 62 deployments having more than 1 million active accounts and processing US\$1.3 billion daily (GSM, 2018). Sub-Saharan Africa processes 1.7 billion transactions annually, accounting for \$26.8 billion in transaction value. The World Bank (2017) reported that Uganda's 'unbanked' have adopted digital financial services at explosive rates that continue to climb. From 2009 to 2016, MOMO users grew from 10,000 to 18 million, including 5.5 million new accounts in 2014–2015 alone.

The circumstances that allow for this innovative financial service to be used on a wide scale also thrive in Uganda. Some of the factors that explain the increase of MOMO use are: strong demand for sending money to friends and family quickly and securely, a rapidly growing market penetration for mobile phones, a literate and relatively young population, an accommodating regulatory environment, and a competitive marketplace, where supply is racing to meet demand. These factors, among others, have led to a large number of fast-moving and flexible mobile financial service products that have become available to a large part of Uganda's population. "Mobile money adoption in Uganda has grown at an astounding rate and continues to follow a steep trend upward" USAID, 2015, p. 8). This is due in large part to two factors: the rapid increase in mobile phone usage, and the increase in access to MOMO services. Mobile penetration is currently 65% of the population, and 97% of the population is covered by one or more of the MNO networks (Uganda Communications Commission [UCC], 2018).

Building on this wide network coverage, the MNOs launched MOMO services, starting with MTN Mobile Money in 2010. In just 5 years, approximately 9 million Ugandans had registered for MOMO, which is nearly half (45%) of the total number of registered customers on

all networks. MOMO is an efficient and convenient way of reaching a mass market, and especially the rural communities at a low cost.

**Mobile money service.** Mobile phones have become an essential tool in everyday life. The versatile functionalities of mobile phones have extended its once basic calling functionality to now unique and diverse features. The MOMO innovation is one such advancement, which has significantly changed the lives of people worldwide. According to Jenkins (2008), MOMO can be defined “as money that can be accessed and used via mobile phone” (p. 3) This service has primarily been responsible for “transforming the usage of mobile devices from merely a communication device to a monetary transferring device” (Jenkins, 2008, p. 3). GSMA (2012) defined MOMO service as “an electronic wallet service, available in many countries, that lets users store, send and receive money using their mobile phone” (p. 7). It is a safe and easy electronic payment system that is now a popular alternative to bank accounts. It can be used on both smartphones and more basic phones.

According to EY (2014), the widespread proliferation of mobile phones across people of different age groups steadily increased service usage. The integration of financial platforms and solutions from banking institutions supplemented with affordable network connectivity from the telecom companies has led to the setting of a new era in the mobile financial solutions arena.

Mobile payments or mobile transfers are the other popular terms for MOMO. These have led to the emergence of mobile wallets and digital payment techniques. MOMO has expanded business revenues for the prime service providers, which include banks, payment processing agents or merchants, MNOs and payment platform providers. These stakeholders in the MOMO ecosystem have been leveraged with uplifted sales, stronger customer relations, retention in customer loyalties and reduction in subscriber churn. These services are broadly gaining traction across diverse industrial verticals in different regions.

GSMA (2012) pointed out that the factors driving the adoption of these services include manifestation of mobile devices among the users, an indispensable requirement to have ubiquitous access to financial solutions. Prevailing data security apprehensions, and lack of awareness related to MOMO services are some of the factors hindering the growth of this market. The opportunities in this market include provision of enhanced flexibility among MOMO services for the service providers, while diversified regulations and policies present across various regions still stand as a challenge faced by them.

Mobile penetration is currently 65% of the population, and 97% of the population is covered by one or more of the MNOs' networks. Financial services are less prominent in rural areas than urban areas as they only reach 14% of the rural population. Some districts in the country are not served by any commercial banks. On average, 62% of Uganda's population has no access to financial services. Slightly over 10% of the population in Uganda has a personal savings account and, traditionally, the banks' target market is the middle-class and high-end segments.

According to the World Bank (2016) report and supported by the BOU annual report (2016), by using the "distribution of commercial bank branches across the country as a proxy measure for bank concentration" (World Bank, 2016, p. 4), it is clear that banks are primarily situated in Kampala, the capital city, and surrounding areas with a thin spread across the country mainly in urban areas. It is clearly evident that rural areas are still significantly underserved. This characteristic of banking in Uganda and other sub-Saharan African countries has continued to limit access to financial services, especially to those in rural areas, who are perceived to have limited demand or need for financial services.

### **Statement of the Problem**

The rapid advances in digital technology and mobile banking platforms "are transforming the financial services landscape, creating opportunities and challenges for consumers, service providers, and regulators alike" (McKinsey, 2016a, p. 2). Customer demands for more digital

solutions and the changing competition landscape due to technology companies entering the banking market has resulted in banking's strategic transformation. Therefore, retail banks have to drive innovation, creativity and customer-centricity to anticipate customer needs much more than in the past. This study focused on these developments and assessed their impact on an array of financial services, business models and adoption of multichannel distribution models.

Weill and Woerner (2015) suggested that “the financial industry’s new entrants are mostly competing through digital channels that pose the need to strengthen the digital business model for the incumbent banks” (p. 4). Due to the development of new products and growth in competition, which has realised a drop in profit margins, banks have begun to invest in front-office systems to provide customers with better information and improve the quality and delivery of their products and services. The focus on automation of data communications and installations of online terminals has become a catalyst for strategic change in the banking industry. Information technology (IT) has been used to support a plethora of new products that include automated teller machines (ATMs), automated credit scoring and electronic funds transfer, and these have also enhanced competitiveness in the industry. The adoption of these technologies in Uganda and the continued developments in IT and their effect on the banking services and methods and implications for the customer was the focus of this study. It was also investigated whether the uniformity of the products and services offered by financial institutions contributes to the emergence of fintech within the Ugandan financial services sector.

Traditional banks “have been slower to respond to rising customer expectations and the fast pace of technological development” (EY, 2018), in particular, through newer channels such as mobile banking; mobile banking has highlighted that traditional banks are “lagging behind” their regional and global peers (CapGemini, 2017). The research question is premised on whether fintech entities have been able to generate competition to such an extent that the banks will adopt different business models.

Previous research has examined the digital transformation in banking (Omarini, 2017), the relationship between business models and digitalisation (Loebbecke & Picot, 2015; Weill & Woerner, 2015), relationship between digitalisation and innovation (Waupsh, 2016), and impact of fintech in emerging markets on business models (Zalan & Toufally, 2017). Results of these studies varied considerably, leading to mixed conclusions on the relationship between business models and digitalisation. Consequently, there has not been a clear-cut conclusion drawn on the nature of that relationship and whether it exists. There are few research studies available that examine the impact of fintech on retail banking models and drivers for adopting new business models in addressing customer needs and financial inclusion since systematic academic research on the topic of fintech is still limited. This study aimed to close the identified gap by seeking answers to the following research questions:

- (i) What are the competitive strategies adopted by incumbent banks towards the impending fintech challenges?
- (ii) What is the relationship between the competitive strategies and customer adoption used by banks?

### **Purpose of the Study**

Thus far, only a limited number of studies relating to fintech and banking digitalisation have been published, although numerous studies have been conducted attempting to analyse the relationship between fintech and banking digitalisation. The researcher's experience of over 25 years covering information communication technology (ICT), banking and mobile telecommunications industries spurred this study as the MOMO industry (fintech) exists at the intersection of financial services and telecommunication and has diverse stakeholders. The researcher has also been involved in the implementation and adoption of MOMO services commonly now known as digital financial services in 14 African countries and most recently in Uganda. The potential impact of MOMO services in promoting financial inclusion in the

developing world and in Uganda in particular and the role played by various stakeholders including banks is an area of interest. The MOMO industry has become a catalyst to digital financial services impacting traditional banks that have sprung into action in the adoption of digital platforms in order to remain relevant in the economic development agenda. Finding innovative models to extend financial services to the poor is still a challenge to the incumbent banks, which have now witnessed digital acceleration and adoption of new business models to reach the mass market.

According to Accenture:

- Digital disruption has the potential to shrink the role and relevance of today's banks, while on the other hand it can simultaneously help them create better, faster, cheaper services that make them an even more essential part of everyday life for institutions and individuals. (Accenture, 2016).
- Banks such as Citigroup and Deutsche Bank among others acknowledge that they need to 'wake themselves up' from innovative complacency and recognise that merely following the waves of regulation and waiting for interest rates to rise will not protect them from obsolescence. According to the Consultative Group to Assist the Poor (CGAP, 2015), MOMO assessment report, "the explosive growth of mobile technology throughout Africa, Latin America, and Asia, innovative solutions are offering cheaper and more relevant financial services to a down market population" (p. 17). The report suggests that people who had previously been unable to access basic financial services can now use MOMO to store "value" directly on their mobile phone, and use this electronic "value" to send money to their family and friends, receive money, pay bills and even purchase products.

### **Research Objectives and Hypotheses**

The main objective of this research was to investigate the critical strategies banks are adopting to counter the impact of the fintech companies through digital initiatives. This determination was arrived at by:

- (i) exploring why companies world-wide are focusing on the use of IT to increase performance and competitive advantage;
- (ii) determining each financial institution's information technological and strategic positioning with respect to other institutions in Uganda;
- (iii) finding out whether Ugandan institutions use IT as a tool to sustain or enhance competitiveness and ward off fintech challenges;
- (iv) determining Ugandan customer perceptions on the use of fintech-induced products such as MOMO;
- (v) establishing hindrances and options that are at the disposal of Ugandan banks in implementing new technologies and keeping up with the dynamic technological changes.

The questions posed above were considered critical in achieving the objectives of the study. The specific objectives of the research were pursued without asserting *a priori* that the approach developed in this study would necessarily yield the best results for establishing the relationship between the effect of fintech and banking digitalisation efforts.

Whereas MNOs are driving the digital transformation by laying the foundation and highways for the interaction of customers and financial solutions; they have now entered the mobile financial services space, disrupting the banking and insurance industries among others. What is the future of banking and mobile telco plus fintech companies in the mobile payments space? Will there be more collaboration/partnerships, or should they consider mergers? To continue competing, what should these companies offer their/potential customers? Further, how will this impact financial inclusion and economic growth at large?

**The hypotheses.** In light of the above research questions, the following hypotheses were outlined to facilitate insights into the research questions:

H<sub>1</sub>: Mobile payment platforms have taken a significant market share of banking transactions.

H<sub>2</sub>: Fintech companies are threatening the dominance of traditional players in retail banking.

H<sub>3</sub>: Mobile payment platforms have the potential to change banking practices in Uganda.

H<sub>4</sub>: Mobile payment platforms have increased financial inclusion in Uganda.

The above hypotheses were raised to test this study.

### **Research Methodology**

Due to the nature of the industry being investigated and the study of customer perceptions on the importance of technology in the banking industry, both qualitative and cross-sectional survey methodologies were adopted. Interview responses of five player “experts” were tabulated, and responses to a structured questionnaire and unstructured observations on trends and future developments were used for data collection.

A cross-sectional survey of customers (400 rural and urban customers evenly distributed to ensure elimination of bias) were randomly selected from the target population. Purposive sampling was used to ensure a sample that would be able to provide experiences and perspectives on the financial services and adoption of channels as they are more robust. In this regard, the researcher chose customers from a pool of 2,000 customers that were available, with every fifth customer being selected to create the desired sample size of 400. Statistical procedures in testing the hypotheses were non-parametric as the respondents based them on agreement or non-agreement on specific issues. Simple quantitative measures were compared to determine the effectiveness of fintech on banking digitalisation implementation efforts. Secondary data from GSMA financial inclusion reports, mobile telco reports, Central Bank statistics and participant observation were used to facilitate deep analysis of the fintech impact on retail banking institutions. Details of the research methodologies are discussed in Chapter 3.

## **Significance of the Study**

The financial sector reform undertaken by the Government of Uganda as part of the broader economic reforms and adoption of the Banking Act Chapter 51 (2000), Financial Institutions (Amendment) Act 2016 and The Financial Institutions (Agent Banking) Regulations 2017 have yielded major developments in the banking industry. These twin forces have brought about, amongst other things:

- (i) the elimination of credit market segmentation, thus increasing competition in this area through a wider participation of financial institutions;
- (ii) emergence of new money market instruments and financial services;
- (iii) relaxed financial sector entry barriers (notwithstanding the increase in minimum capital requirements for registering a financial institution) to prop up efficiency in the sector through the entry of new banks and other financial institutions on the market;
- (iv) steps to facilitate the determination of interest and foreign exchange rates by market forces;
- (v) introduction of fintech players in the industry;
- (vi) introduction of agency banking that impacts on the retail banking distribution model.

Following these reform endeavours, a significant number of new entrants in the banking sector have emerged, a number of which have become forces to reckon with. The unprecedented increase in the number of players has undoubtedly increased competition in the banking industry, as the market has not experienced similar growth (BOU, 2017). It has spurred on all banks to develop new products and improve cost efficiencies, and compelled them to stop cross-subsidising less-profitable businesses. Information technological developments in general and possibilities of new IT applications in the banking industry in particular present new opportunities for new ways

of doing business and leveraging existing channels. Banking industry players in Uganda are embracing these developments, which may well define new bases of competition.

The study is considered beneficial to a broad range of stakeholders that include the retail banks, government, consumers, and other sectors that are at the centre of consuming fintech and digitalisation products inherent in the Ugandan economy.

**The management of retail banks, MNOs and fintech companies:** The management of these relevant key players will afford a better understanding of the strategic relationships with new entrants and the need to adopt digital transformation strategies, and the relationship between the competitive strategies used by a firm and customer experience. On the basis of the findings of the study, the management of various players will be able to implement digital strategies from an informed position.

**The government:** The banking and mobile telecommunications industries are important to the economic growth of the country. The two industries facilitate trade, are revenue sources through taxation and offer employment to the population. The government could make informed decisions when formulating taxation and investment policies for the industries on the basis of the findings of this study.

**Regulatory bodies:** The BOU and UCC are responsible for regulating the banking and telecommunications sectors, respectively. These regulators will gain insight into the competitive and cooperative relationship between the banking and telecommunication service providers in their business endeavours and accommodate them in their policies where applicable.

**Researchers and economists:** The symbiotic relationship between digital technology strategies, disruptive innovation (fintech) and competitive advantage has been explored. The researchers' world should definitely consider the enormous potential of this strategic intersection between financial services and mobile telephony. The study represents a significant contribution to the growing body of research on fintech and potential of the MOMO industry. The findings may

also be used as a source of reference for other researchers on the subject of financial inclusion and poverty eradication. In addition, academic researchers may need the study findings to stimulate further research in this area and as such form a basis of good background for further research.

### **Scope of the Study**

This research is an exploratory study on the impact of fintech disruptive innovations through MOMO in Uganda. The scope of the research is limited to the coverage of retail banks and respective customers in Uganda through structured questionnaires and interviews to determine if technology has changed customer behaviour. The banking industry in Uganda is evolving and embracing global trends in adopting omnichannel strategies and reduction of brick and mortar branches. The study also endeavoured to determine the adoption of MOMO payments and the relationships between the actors of the MOMO ecosystem.

The special focus is on the entry of MNOs through fintech-led initiatives in MOMO, offering an alternative to the current banking incumbents. The study assessed the major impacts and consequences of these regulatory-led reforms on the economy and poverty eradication through financial inclusion. The study provides a basis of generalisation subject to the validity recorded and similarity of the research to other countries in the same class of developing countries. Bell and Waters (2014) suggested the extent to which findings from one study can be generalised to other examples in the same category “depends on how far the study example is similar to others of this type” (p. 182). Uganda is a typical country in the developing country class that is going through the adoption of digital financial services.

### **Definition of Key Terms**

The following terms are considered key terms in this study and defined below.

**Financial technology:** A new sector within the financial industry that applies technology in order to improve financial activities.

**Fintech:** Financial technologies, or fintech, refers to the use of technology to deliver financial solutions.

**Financial inclusion:** A state in which all working-age adults, including those currently excluded by the financial system, have effective access to the following financial services provided by the formal institutions: credit, savings (defined broadly to include current accounts), payments, and insurance.

**Innovation:** A technological product innovation can involve either a new or improved product whose characteristics differ due to use of new technologies, knowledge or materials. A technological process innovation is the adoption of new or significantly improved production methods.

**Disruptive innovation:** Disruptive innovation denotes the process by which technology enables entrants to launch less expensive and more accessible products and services that gradually replace those of well-established competitors.

**Business model:** A conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.

**Digitisation:** Digitisation refers to the practice of taking processes, content or objects that used to be primarily (or entirely) physical or analogue and transforming them to be primarily (or entirely) digital. The effect of digitising processes, aside from potential efficiency gains, is to make processes more tailorable and malleable.

**Digitalisation:** Integration of digital technologies into everyday life by the digitisation of everything that can be digitised.

**Mobile payment:** Mobile payment refers to a payment service conducted via mobile devices.

**Omnichannel (omni-channel):** Omnichannel is a multichannel approach to sales that seeks to provide the customer with a seamless experience whether through a physical channel (offline) or online/digital channel experience.

### **Organisation of the Study**

This chapter has explained the background of the study and the objectives this researcher aimed to achieve. The chapter evaluated the changing banking landscape and benefits and potential impact of MOMO in the developing world. The remaining chapters of this study are organised as follows. Chapter 2 appraises and presents the literature review and covers the fintech evolution, the concept of disruptive innovation, competitive advantage and empirical evidence on the material relating to the research topic. Chapter 3 describes and justifies the research methods used to carry out the study. In Chapter 4 the research findings of the study are presented, and Chapter 5 provides the results and discussion narrative from the findings, and concluding remarks and future research direction.

### **Summary**

This chapter has introduced the subject of the research and the increased competition being witnessed in the banking industry caused by new alternative payment channels through fintech innovations. The study's aim is to add value to the banking industry on the impact of fintech on competitiveness and customer experience. The next chapter reviews the literature on the subject matter and implications on the stated hypotheses.

## **Chapter 2: Literature Review**

This chapter focuses on reviewing the literature on the evolution of fintech from 2008 to 2018 both from a local and global view. The local perspective on fintech and review of the global trends on fintech and how this has influenced the Ugandan economy are also covered. Fintech and digitalisation are part of the IT domain, thus the relevant literature on IT and its role on competitiveness and performance are brought to the fore. Lee and Shin (2017) asserted that “fintech brings about a new paradigm in which information technology is driving innovation in the financial industry” and IT has been viewed as a catalyst for competitive advantage. Beyond the existing literature on fintech, the author reviewed generic literature on disruptive innovation, competitive advantage and value chain concepts. Some key models and concepts of competitive advantage will be discussed with IT in mind. The concepts of value chain, leveraging performance and achieving competitive advantage amongst other concepts towards which the objectives of this study point, are rooted in the realm of competitive strategy. The chapter concludes by analysing the views that best suit the objectives of this study by clearly articulating how they are useful in fulfilling its objectives.

The following libraries were reviewed: ISM Student Library, EBSCO host, textbooks, Google Scholar, Academia, Science Direct, Research journals and white papers; GSMA and World Bank publications, ‘Big 4’ insights, and published case studies and reports.

The following keywords were used for the research: fintech companies; digital financial services; digital transformation financial services industry; mobile money platforms, mobile money services; disruptive innovation in financial services; and financial inclusion. The author has reviewed several related articles in the last four years from scientific and non-scientific sources, white papers and industry research from the Big 4 consultancy companies.

There is an increasing amount of literature on how organisations have derived value, gained competitive advantage and realised performance improvement from the use of IT. Technology,

which includes IT, is cited by several authors, namely Johnson and Scholes (1997), Porter and Millar (1985), and Thompson and Strickland (1998), among others, as a core competence that facilitates competitive strategies of enterprises. The literature review is thus a precursor to the detailed examination of the subject of this study in light of the theories, associated paradigms and models so reviewed.

The areas of focus for the literature review are elaborated below:

- (i) Overview of fintech and Uganda context;
- (ii) Fintech evolution and trends (disruptive innovation in mobile payments);
- (iii) Technology impact on banking business models;
- (iv) Regulatory framework of banking and payments;
- (v) Customer adoption of banking non-traditional channels and drivers for adoption;
- (vi) Financial inclusion; and
- (vii) Empirical evidence / examples of partnerships.

### **Overview of Fintech and Uganda Context**

According to CapGemini (2017), “the rise of fintech has been aided by a perfect storm, created by increasing customer expectations, expanding venture capital funding, reduced barriers to entry and increased pace of technological evolution”. Most importantly, the financial services sector has been ripe for fintech in large part due to traditional companies leaving a lacuna of customers’ unmet needs. Fintech companies have raised the bar of customer expectations by delivering superior personalised and digital customer interactions, and customers are embracing a new fintech start-ups product portfolio with 50.2% globally having performed a transaction with more than one non-traditional company.

Blechar, Constantiou, and Damsgaard (2004) pointed out that “the high rate of mobile phone adoption and usage has attracted attention from many researchers the world over” (p. 314). For instance, studies show that mobile phone adoption is on the increase and MOMO can serve as

a general-purpose technology platform on which other services can develop. The Kenyan Safaricom-operated MOMO standard is increasingly being adopted for services such as customer-to-business payments (such as electricity bills or tickets), interest-yielding bank accounts, and even credit and insurance services, all of which require an understanding of the payment behaviour in Africa (Kendall & Maurer, 2012). According to Sadana, Mugweru, Cracknell, and Wright (2011), the “existing evidence on adoption of mobile money services beyond peer-to-peer transfer is mixed” (p. 15), it is clearly not a marginal influence on the financial inclusion activities. Ndiwalana, Morawczynski, and Popov (2010) asserted that the increase in the growth of MOMO expertise in Uganda “is a phenomenon that has been particularly remarkable” (p. 11) and welcomed by both the urban and rural users largely because of the prepaid service model. As a result, almost all societal classes now have access to financial services because communities have increasingly become familiar with MOMO services. MOMO technology is viewed as a payment or banking channel with the potential to address two important issues at the same time: on the supply side, financial institutions gain an ability to deliver a great diversity of services at low cost to a large client base in the poorest sections of society; on the demand side, it presents an opportunity for financial inclusion among the underserved population through traditional banking services (Diniz, de Albuquerque, & Cernev, 2011).

The success of MOMO in countries such as Kenya and Tanzania is due to its inclusiveness: its ability to reach and tap into the rural population. About 80% of Ugandans live in rural areas, of whom over 50% own a mobile phone. According to Mugisha (2013), “It is easier to access mobile money services compared to banking services, especially for the village folk” (para. 4). That is why MOMO has experienced phenomenal growth in Uganda and hence is attracting the interest of different stakeholders that did not exclude the government of Uganda. It enables easy and cost-effective transfer of money from urban to rural areas as people in the village are net recipients of MOMO.

The MOMO ecosystem is composed of several players, namely MNOs, banks, regulators, agents and merchants. In Uganda, MNOs are regulated by the UCC under the UCC 2013 Act. Banks are regulated by the BOU through the 2004 Financial Institutions Act (FIA). The FIA does not mandate the BOU to regulate non-financial institutions like telecoms. Although the UCC Act 2013, provides for regulation of ‘mobile value-added services’ these are not clearly defined in the act. To provide MOMO services, telecoms must partner with a bank that is prudentially regulated. All these entities operate within the cyber laws of Uganda, issued by the Uganda National Information Technology Authority in 2004. The Uganda cyber laws include (i) Computer Misuse Act (2011), (ii) the 2011 Electronic Transactions Act, and (iii) the 2011 Electronic Signatures Act. These laws provide a regulatory environment for tackling cybercrimes, intellectual property rights, copyright protection, enabling e-commerce and facilitating trade, as well as regulating the use of electronic signatures. MOMO service has the inclusive potential as it covers various initiatives (long-distance remittance, micro-payments, and informal air-time topping schemes) aimed at bringing financial services to the unbanked using mobile technology.

### **Fintech Evolution and Trends (Disruptive Innovation in Mobile Payments)**

According to McKinsey (2016a), “digitalization is changing the rules of the game in many industries through possible disruptions of business models, and this results in the emergence of a much more complex and dynamic ecosystem for growth and innovation” (p. 5). The emerging fintech evolution continues with new companies challenging the established ecosystem and this is affecting both enterprises and consumers across all areas of financial services and large incumbents are evolving as they adapt their business models.

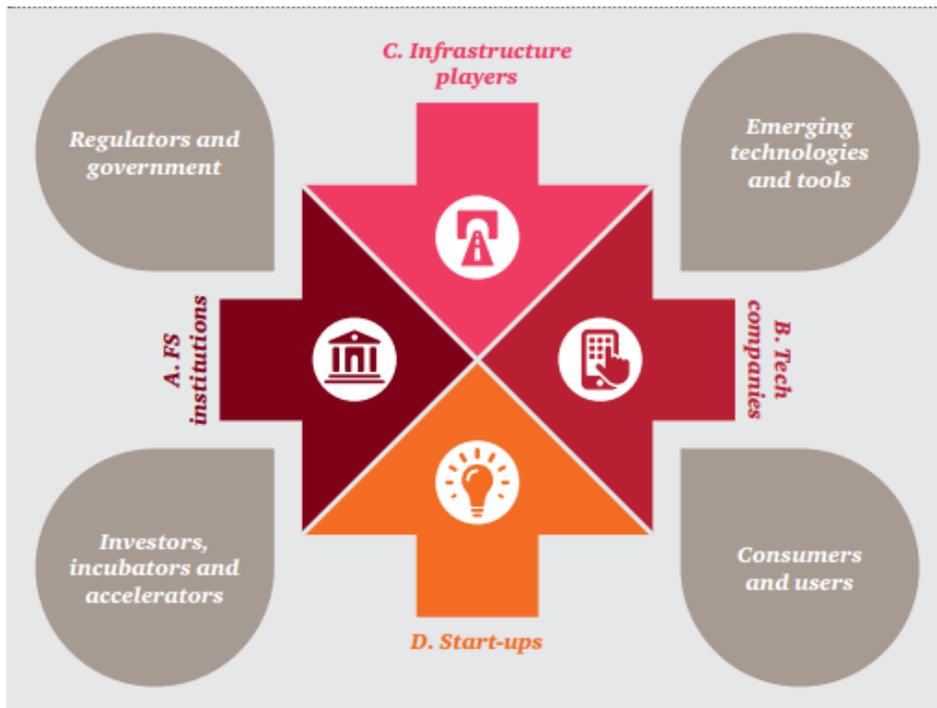
Uskovic (2017) pointed to the long fintech history of redefining and globalising the financial space: “since the 1800s, innovators have created new ways for financial institutions to streamline and safeguard assets as well as customer transactions” (para. 5).

In order to understand the competitive and collaborative dynamics in fintech innovation, it is prudent that some insight is provided for the ecosystem. PwC (2016) suggested that the fintech ecosystem is a complex ecosystem made up of five major elements, namely:

- (i) Fintech start-ups (for example, payment, wealth management, lending, crowdfunding, capital market and insurance fintech companies);
- (ii) Technology developers – Emerging technologies such as big data analytics, cloud computing, cryptocurrency and social media developers;
- (iii) Government and regulators;
- (iv) Financial customers (individuals and organisations);
- (v) Traditional financial institutions (for example, traditional banks, insurance companies, venture capitalists and stock brokerage firms).

The above elements, depicted in Figure 1, symbiotically facilitate collaboration and competition, stimulate the economy, contribute to innovation in the financial industry and ultimately benefit consumers. Walchek (2015) pointed out that at the centre are entrepreneurial fintech start-ups that are driving major innovations in wealth management, payments, lending and capital market by “incurring lower operating costs targeting niche markets and providing more personalized services than traditional firms” and leading the phenomenon of “unbundling financial services” (p. 9). The major drivers of growth in the fintech sector are the ability to unbundle services and that customers are beginning to pick and choose services they would like from various fintech companies rather than use one traditional financial institution. Technology developers provide digital platforms for mobile services, social media and AI to improve personal customer experience.

***Figure 1. Fintech Ecosystem***



Source: PwC (2016).

According to CapGemini (2016): Globally, nearly two-thirds of customers (63.1%) said they use products or services offered by fintech firms with

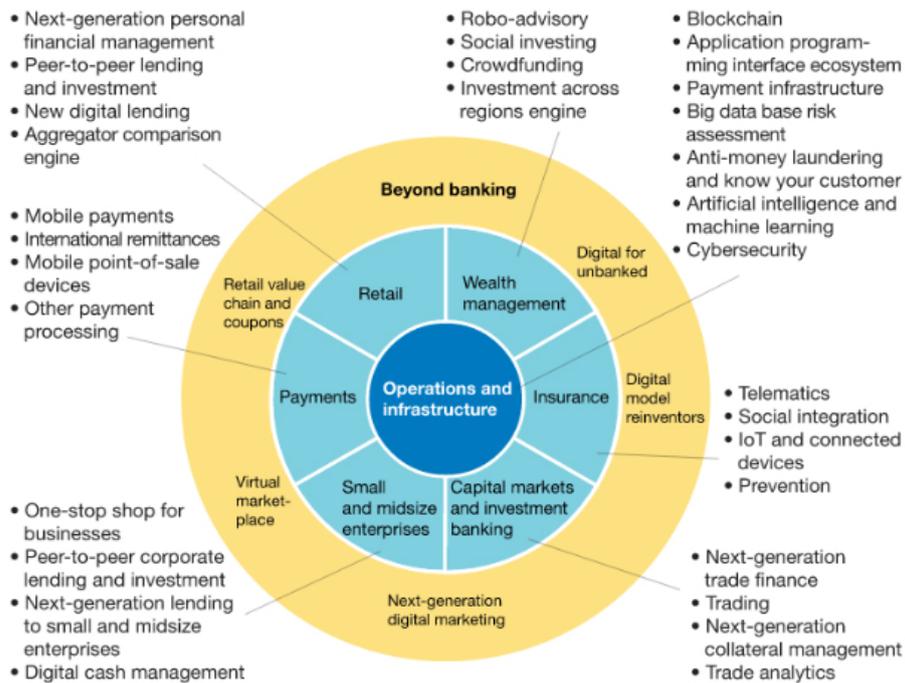
penetration highest in the emerging markets. In Latin America, 77.4% use fintech products or services, followed by Central Europe at 68.9% and Middle East and Africa at 63.3%. (2016, p. 18)

This phenomenon is prevalent since customers in emerging markets find fintech products and services as a convenient way to achieve financial inclusion. Thus, filling in service gaps by traditional banks, “High unbanked population, weak consumer banks and high mobile phone penetration make emerging markets ripe for fintech disruptions” (Citigroup, 2016, p. 10). The concept of disruption is well-defined as a “process whereby a smaller company with fewer resources is able to successfully challenge established incumbent businesses” (Christensen, Raynor, & McDonald, 2015, para. 6). Disruptive innovations originate in low-end or new markets and provide ‘good enough’ solutions that are considered inferior by mainstream customers but may be attractive to a segment of less demanding or new customers. Arner et al. (2015) further asserted that fintech has revolutionised “the way in which financial services are conducted, with increased convenience and lower operational costs being its key differentiators” (p. 27).

As banks realise that their size, culture and subjectivity to regulation make it challenging to innovate at the pace of nonbanks, a number are partnering with fintech players (McKinsey, 2015). Collaborative and strategic partnerships will become increasingly important traditional financial institutions that seek digital expertise and innovation and as fintech companies seek scale. Examples of such partnerships are already emerging, for example in 2014 New York-based Moven and Australia's Westpac announced an agreement to integrate Moven's mobile financial management tools with Westpac's Internet banking platform in New Zealand. Westpac hoped to use the tools to become the largest bank in the market while Moven sought to expand into new markets (Anand & Mantrala, 2019). McKinsey (2017) further asserted that "as the industry continues to mature, fintech will likely enter a period of consolidation, with larger players turning to mergers and acquisitions to satisfy their expansion goals" (p. 18). PayPal for example acquired Xoom in 2015, an international fund-transfer service for \$890 million that was expected to allow PayPal to broaden its services into digital money transfer and management (Anand & Mantrala, 2019). This was achieved 15 months post-merger and customers could now exchange money overseas. Figure 2 captures in summary key trends in fintech.

***Figure 2. Key Fintech Trends***

## Key fintech trends



McKinsey&Company | Source: Panorama by McKinsey

Source: McKinsey (2016a)

## Technology Impact on Banking Business Models

Wallace (2017) pointed out that “the rise of digital innovators in financial services presents a significant threat to the traditional business model of retail banking”. Banking business models have historically generated value by combining different businesses such as financing, investing and transactions that serve the customers’ broad financial needs over the long haul (McKinsey, 2015). This traditional banking model is primarily based on the balance sheet growth and customer stickiness that provided a platform for banks to guarantee earnings through margin and transaction fees.

**Traditional banking model based on balance sheet growth.** A balance sheet (or statement of financial position) is a financial statement that summarises how much an entity owns (assets) and owes (liabilities), and the interest of the owner in that entity (shareholders’ funds) (Investopedia, 2017). The structure of a balance sheets differs from one industry to the next on account of the varying business structures. The balance sheets of banks are unique in that banks

exist to perform a process of financial intermediation in the economy that entails raising funds from net savers in the economy and subsequently advancing those funds to sectors of the economy that require funding (Organisation for Economic Co-operation and Development [OECD], 2015). Given this core business of banks, a bank's balance sheet primarily consists of financial assets and financial liabilities. Financial assets are mainly in the form of loans and advances whereas financial liabilities are primarily deposits due to customers and other banks. In the United States (US), loans and advances constituted 52% of total assets for US banks in 2012 (Helgi Library, 2015).

Banks generate most of their income through extending credit. The American Bankers Association (2014) stated that 67% of bank revenues are derived from interest income. In order to extend credit, banks mobilise deposits to create adequate funding for loans as alluded to earlier. Mobilising deposits allows banks to leverage their capital, which enables them to generate more revenue than they would otherwise have achieved using their own capital. If banks want to maximise their revenue, it therefore entails them maximising the growth of deposits. The Bank for International Settlements (2014) stated that "Leverage is an essential part of banking" and that banks, globally, are typically highly leveraged compared to most industries, with leverage ratios of 95:5 (debt to equity) compared to the average leverage ratio of 50:50 for the world's largest 10 non-financial institutions.

A study by McKinsey (2016a), appropriately titled 'A digital crack in banking's business model', shows how digital disruption is catching traditional banks off-guard, drilling deep into banks' core business lines, selectively targeting higher-margin activities. The study determined that 59% percent of established banks' earnings come from purely fee products like advice and payments and also the origination, sales and distribution component of the balance sheet products such as loans or deposits. In these areas, returns on equity (ROE) average an attractive 22%, which is 3.5 times the 6% ROE of the balance sheet provision and fulfilment component like loans that have high operating costs and high capital requirements. Digital start-ups (fintech) as well as non-

bank technology companies in e-retailing and media could exploit this mismatch in the banking business model. The fee products that are at the core of the banks' value chain are the most vulnerable to disruption, as depicted in Figure 3, due to the unbundling by fintech companies. McKinsey (2016a) further suggested that \$90 billion of profits recorded by banks could be at risk worldwide by the year 2025, with banks in developed markets being the most vulnerable. The report further points out that:

Technological advances and shifts in consumer behaviour offer attackers a chance to weaken the heavy gravitational pull that banks exert on their customers. Many of the challengers hope to disintermediate these relationships, slicing off the higher –ROE segments of the banking value chain in origination and sales, leaving the banks with the basics of asset and liability management. (McKinsey, 2016a, p. 12)

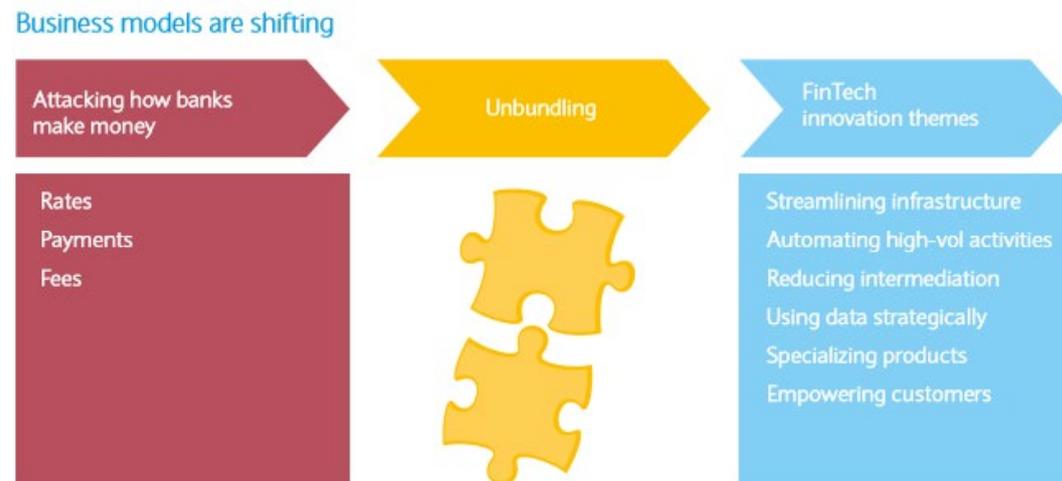
It is important to note that most fintech entities do not want take banks' one-stop shop nature and do not want customers to transfer all of their financial service needs, but instead to offer more targeted and convenient services such as opening of accounts effortlessly through the digital platforms.

PayPal, one of the fintech pioneers, is also adjusting its business models to encompass a wider range of services since they have expanded to provide instant lines of credit and mobile applications that locate nearby stores and restaurants that accept payment by PayPal. PayPal initially launched payment systems for online purchases, which was then a new phenomenon in the 1990s.

From a Ugandan perspective, MNOs (fintech) and banks are increasingly rolling out MOMO services as banks try to match and diversify the portfolio of products and services and to offer omnichannels to improve customer experience. CIO (2016) reaffirmed this position by pointing out that “the traditional financial institutions are giving the highest priority to investments

in technologies that facilitate more streamlined and effective operations, with an eye toward providing better day-to-day customer experiences” (CIO, 2016, para. 4).

**Figure 3. Banking Business Model Changing**



Source: Adapted from Barclays adoption of Fintech (2016)

**The importance of competitive advantage to companies.** Competitive advantage at its fundamental level is a measure of the value that a firm is able to create and transfer to its customers. Essentially, a company/firm can create value for its customers in one of the following three ways (Porter, 1985):

- By providing its products and/or services at a lower price than its competitors;
- By differentiating its products and/or services from competitors through the provision of unique benefits that offset a premium price; and
- Through a combination of both low price and differentiation strategy that is focused on a particular market or segment.

Shank, Spiegel, and Escher (1998) asserted that: “Competitive advantage in the marketplace ultimately derives from providing better customer value (that is, **differentiation**) or equivalent customer value for a lower cost (**low cost**)” (1998, para. 2). It is further pointed out that

a company may achieve both differentiation and low cost, a rare phenomenon that was established by Porter (1985) where three conditions have to be met simultaneously, namely:

- When *competitors are stuck in the middle*. When competitors are not positioned well enough to force a firm to the point where cost and differentiation become inconsistent. This can give the firm both cost and differentiation advantage.
- When *cost is strongly affected by market share or interrelationships*. The market share influence prevails where cost position is heavily determined by market share rather than by product design, level of technology, service provided or other factors. In a related situation, an interrelationship between industries that one competitor can exploit and others cannot can facilitate both cost leadership and differentiation for the one competitor.
- When *a firm pioneers a major innovation*. Introducing a significant technological innovation can allow a firm to lower cost and enhance differentiation at the same time, and perhaps achieve both strategies.

Against the backdrop of the rare possibilities cited above, Porter (1985) concluded that a firm should always aggressively pursue all cost reduction opportunities that do not sacrifice differentiation. A firm should also pursue all differentiation opportunities that are not costly. Beyond this point, however, a firm should be prepared to choose what its ultimate competitive advantage will be and resolve the trade-offs accordingly. Parsons (1983), in his work on IT and competitive strategy, introduced a three-level framework that managers can use to assess the present and potential effect of IT. This is depicted in Table 1.

**Table 1. The Three-level Effect of Information Technology**

INDUSTRY LEVEL	<p><b>Information technology changes an industry's:</b></p> <ul style="list-style-type: none"> <li>(i) products and services</li> <li>(ii) production economics</li> <li>(iii) markets</li> </ul>
FIRM LEVEL	<p><b>Information technology affects key competitive forces:</b></p> <ul style="list-style-type: none"> <li>(i) buyers</li> <li>(ii) suppliers</li> <li>(iii) substitute products</li> <li>(iv) new entrants</li> <li>(v) rivals</li> </ul>
STRATEGIC LEVEL	<p><b>Information technology supports a firm's strategy:</b></p> <ul style="list-style-type: none"> <li>(i) low-cost leadership</li> <li>(ii) product differentiation</li> <li>(iii) market specialisation (niche, focus)</li> </ul>

Source: Adapted from Schultheis and Sumner (1998, p. 62)

Parsons (1983) reaffirmed the work of Porter and Millar (1985) that IT changes the nature of the industry structure (discussed in this chapter's section 'Information technology and business processes') and affects the five competitive forces (discussed in this chapter's section 'The impact of electronic commerce on competitive advantage'), and how IT can contribute to the generic strategies (discussed in this chapter's section 'The importance of competitive advantage to companies').

Key trends in the analysis of value chains. The importance of analysing the value chain in any given economic sector cannot be over-emphasised. Through value chain analysis, the activities by which a company adds value to a service or product is established. Porter (1985) argued that

the basic tool for understanding the role of technology in competitive advantage is the value chain, which is a set of “discrete activities” making up a firm. Porter acknowledged that “Technology is embodied in every value activity in a firm, and technological change can affect competition through its impact on virtually any activity” (p. 36).

Amongst other technologies, IT is thus embodied in most aspects of both the primary and support activities of a firm’s value chain. The value chain is embedded within an overall value system, which incorporates the value chains of a firm’s suppliers, channels and buyers (Ashill et al., 2019). The purpose of Porter’s value chain framework is to map out each of the strategic activities and linkages between the value-creating activities of a firm’s operations and be able to analyse their impact on the firm’s overall cost structure. The key to competitive advantage is argued to lie in the optimisation and coordination of linkages between business activities in a way that reduces transaction costs and/or enhances differentiation. In either case, the strategic use of IT can play a significant role in establishing a firm’s competitive position by transforming the way value activities are performed and the nature of linkages among them (Ashill et al., 2019). The advent of fintech and digitalisation, it can be argued, is no coincidence and seems to affirm Porter’s observation. According to Thompson and Strickland (1998), the value chain provides the basis for identifying:

- Innovative ways to restructure processes and tasks, cutting out frills or otherwise revamping the make-up of the value chain to provide the basics more economically (**Cost Advantage**), or
- Where along the value chain to create attributes that significantly distinguish a product/service offering from the offerings of rivals or create/enhance a set of capabilities for delivering customer value that is unmatched by rivals (**Differentiation**). Banks can differentiate themselves from competition by combining compelling digital offerings with great human customer services. That is clearly what

most banks would like to be and whilst branches are important and are a vital part of the business as they serve a niche segment, they go hand in hand with digital offerings due to the burgeoning millennials.

Porter (1985) further pointed out that “a company can outperform rivals only if it can establish a difference that it can preserve” (p. 85). The implications for competitive advantage is that “cost advantage arises from performing particular activities more efficiently than competitors” and similarly, “differentiation arises from both the choice of activities and how they are performed” (p. 86).

Serafeimidis (1999) noted out that IT is a core competence, which organisations can use to achieve innovation in products and services, processes and value. The study states that IT can leverage strategy innovation in two ways:

- New ways to do business, whereby new channels to market are offered on the basis of the maturity and convergence of various technologies, and
- Leveraging opportunities such as knowledge innovation, internal process efficiency and diversification successfully drives business strategies.

These points endorse Porter’s argument on performing activities different from rivals’ or performing similar activities in different ways to gain competitive advantage.

**Information technology and business processes.** Many a researcher has presented propositions that depict the effect that IT will have on a firm and the way value activities are performed (Bank for International Settlements, 1993; Benjamin & Wigand, 1995a, 1995b; Cronin, 1993; Drnevich & Croson, 2013; Kohli & Devaraj, 2003; Melville et al., 2004; Piccoli & Ives, 2005; Rayport & Sviokla, 1995). These researchers tend to align on the categories that impact the firm and its environment, namely:

- (i) Changes in industry structure
- (ii) Creation of competitive advantage, and

(iii) Spawning of new businesses

***Changes in industry structure.*** Porter and Millar (1985) suggested that:

information technology renders rivalry between competitors more intense, yet it also creates additional opportunities to develop competitive advantage such as the creation of new business interrelationships within the value system, the expansion of industry scope and the increased ability to coordinate value activities regionally, nationally and globally.

Bank for International Settlements (1993) pointed out that “by reducing the costs of coordination through the application of networked information technologies, the resulting tighter integration of the value system will lead to the development of electronic markets”, as evidenced by the thrust of digitalisation and mushrooming of mobile apps.

***Creation of competitive advantage.*** IT creates competitive advantage by providing companies with new ways to outperform their competitors (Porter & Millar, 1985). IT can have a powerful effect on a business’ cost structure, increase opportunities to differentiate, and significantly change competitive scope (Ashill, 2019). Cronin (1993) examined the impact of the Internet in relation to this proposition, contending that a number of competitive advantages can be realised in each stage of the value system. These include process inputs from suppliers (upstream value), internal operations (value chain), and customer relations and customer experience (downstream value). Process inputs relate to those transactions between the components of value systems that support the movement of exchange of services and goods through each of their necessary value-creation processes, including pricing, ordering, delivery and tracking. The findings of these researchers can easily be exemplified by Safaricom’s MPESA in MOMO payments, which transacted \$28 billion — an equivalent of 44% of Kenya’s GDP in 2015. Safaricom has become a payment platform of choice in Kenya and continues to innovate for growth, which has also caused some concern from the government and regulators alike. While acknowledging its significant role, however, officials of the Kenyan treasury believe that MOMO

should be regarded as a “plausible fiscal risk” to the country given the expanding overlaps between and dependencies among different sectors of the national economy. (Business Daily, 2016).

***Spawning new business.*** Rayport and Sviokla (1994, 1995) supported that “companies should employ the information created from each of the linkages within the value system and use it to create new value-added marketplace products and services”. An example may be the development of AI that is now prevalent in the market with which companies use the information to determine customer buying trends; the benefits to be realised through such a strategy include increased competitive scope, opportunities for new customer relationships and economies of scale.

Porter and Millar (1985) noted that “IT would enable organisations to process much larger quantities of information that may provide for the sale or alternative application of that information”. The new banking model has now embraced AI to ensure customer experience and individualise offerings. Fintech has also introduced a multitude of supporting business players in its ecosystem, such as agents and liquidity management firms, and created a platform for new start-ups to build on (Kendal & Maurer, 2011).

Major commercial banks have partnered with telecoms and MNOs to provide competing MOMO products, which has “spawned a diverse ecosystem of complementary products and services, such as digital bill paying and ATM-accessible accounts” (Meridian, 2016, p. 2).

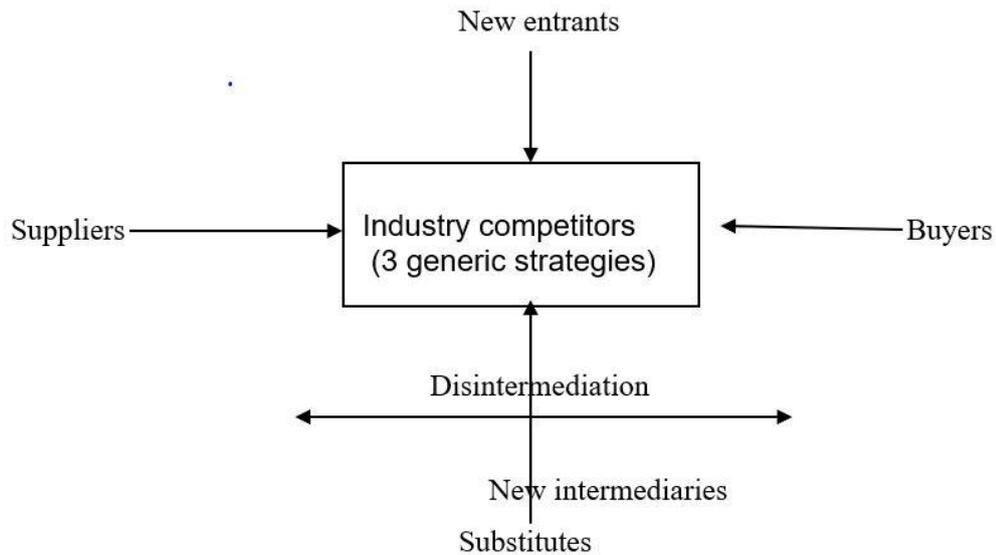
**The impact of electronic commerce on competitive advantage.** Electronic commerce has been widely regarded as a business model that allows companies to utilise electronic networks to deliver services (Kalakota & Whinston, 1996). For instance, many banks in Uganda are using mobile applications as a way to provide information to their customers through access to product information and interest and foreign exchange rates, and performing transactions, as a marketing and sales tool (by allowing a customer to provide feedback via chats) and as a support line through news flashes.

Gunasekaran, Marri, McGaughey, and Nebhwani (2002) stated that “seen from a buyer-seller perspective, and using a life-cycle model, electronic commerce (e-commerce, e-business) can be used in all the phases of a commerce transactions”. E-commerce systems including mobile applications can be of significant value as a lever for new customer management strategies due to the following main reasons:

- (i) Directly connect buyers and sellers,
- (ii) Support fully digital information exchange between them,
- (iii) Support interactivity and therefore dynamically adapt to customer behaviour, and
- (iv) Are updated in real-time.

The drivers for electronic commerce are both technological and business oriented; the effects and the potential for competitive advantage can be explained through the use of Porter’s analysis framework for competitive advantage (depicted in Figure 4). Details of the same have been expounded in this chapter’s section ‘Technology Impact on Banking Business Models’; however, the focus is on the analysis of the three arguments of: 1) generic strategies for a single company to get competitive advantage, 2) potential of new entrants in the industry and substitute products, and 3) the pressures of customers and suppliers on the value system, and it looks at the potential of e-commerce for disintermediation within an industry as well as the notion of strategic disadvantage.

***Figure 4. Porter’s Analysis Framework of Competitive Advantage***



Generic competitive strategies. Using digital channels:

- Offers a cost advantage through cheaper distribution channels, direct savings and less expensive product promotion. The argument put forward is that the digital channels allow small companies to act as much bigger firms by using “free” or very-low-cost infrastructure to promote their products on a global basis. As such, the web can be seen as a great equaliser, replacing an often-costly distribution network with a public or widely shared infrastructure.
- Helps a company to differentiate itself not only through price but also through product innovation, time to market and customer service.
- Allows for customer focus strategies through better customer relationships.

Digital transformation enables the strategy of focusing on a large number of specific segments by using IT for personalised service on mass-customised products.

***New entrants and substitute products.*** The use of digital technology offers companies an easier way to enter traditionally hard-to-access markets. This is thanks to fewer expenses for promoting products, new sales channels and not as many capital requirements. Its usage also helps to introduce substitute products to a market on the basis of product innovation. Das (2017), in an

article appropriately titled ‘Banking on Disruption’, acknowledges that entrants with maximum chances of success apply strategies that encompass one of the following two themes:

- (i) Targeting an underserved market and moving upmarket into other products and services;
- (ii) Focusing efforts around the contemporary marketing strategy of jobs-to-be-done, which aims at better understanding the progress people are trying to realise in their day-to-day lives.

Christensen (2015) affirmed this outlook by pointing to disruptive innovation that “enables entrants to launch less expensive and more accessible solutions that gradually replace those well-established competitors/incumbents”. Digitally armed fintech “can gain scale by establishing themselves in a market segment that offers a viable foothold against incumbents before moving upmarket into other products and services”.

***Intermediation and strategic disadvantage.*** Digitalisation makes it easier to suppress an intermediary in a distribution network due to direct customer contact and the use of publicly shared infrastructure. The other side of the coin reflects by offering an added-value service on the basis of information management makes it easier to attain new intermediary status within an industry. Here, it is worth noting that digitalisation can play a dual role by suppressing certain kinds of intermediaries and at the same time facilitate other kinds.

***Strategic disadvantage.*** Porter (1985) advised that “new technologies allow an organisation to quickly catch up with its competition and with time, technologies gain maturity that reduces the cost and effort required to implement systems”. However, technology can potentially become a source of strategic disadvantage if a firm does not embrace it. For example, if a company offers products or services on the Internet and its competitor does not, customers could select the former, especially in industries where switching barriers are low, such as in retail

banking. An “early adopter” customer may decide to change to a bank that offers digital banking capabilities (Porter, 1985).

Bloch, Pigneur, and Segev (2005) pointed out that:

although the potential strategic disadvantage for followers is clear, the value of the competitive advantage for the leader is also unfortunately time-limited. The only source of sustained competitive advantage therefore comes from having an infrastructure, both technical and organizational, which allows for continuous innovation, to always be in front of the competition. (2005, p. 13).

Therefore, companies have to deploy dexterity strategies. Similarly, banking is about financial intermediation that necessarily requires innovation, ingenuity and speed in order to gain competitive advantage, and such advantages can mostly be realised if the institution is a first mover that also continuously improves on past achievements. The fruits of a sustainable first-mover strategy come at a high price as well — e.g., high research and development costs, failed projects due to lack of a full understanding of the proposed technology to be deployed, high customer expectations and hence pressure on continuous high-quality deliveries.

***Electronic banking (digital channels) services.*** According to a report by Deloitte (2016), banks are increasingly looking at the Internet as their main delivery channel and are starting their spending patterns accordingly, but they are still uncertain about when the payoffs will come from their investments (IT paradox). The IT paradox is the linkage between returns through productivity, profit and customer welfare and the corresponding IT investment.

Forrester Research (2019) reported that US consumer sales on the Internet have almost tripled over each of the last three years. The numbers for business-to-business web activity are even more striking, accounting for over \$1 trillion in 2017. However, competition is set to become intense in the online banking sector in the US, with more fintech companies entering the market and the number of people banking on the web growing significantly. Comparatively, in sub-

Saharan Africa Internet and/or digital-enabled transactions have continued to grow steadily as mobile data adoption increases (GSMA, 2018). According to UCC (2018), mobile Internet users/customers constitute 45% of the mobile telephony customer base that is close to 12 million users, which translates to over 33% of the total population.

The forces driving this growth of services on the Internet include globalisation, deregulation and technological advances, resulting in increased competition and enhanced customer service. The new “anytime, anyplace” distribution channel has changed cost structures dramatically and blurred the boundaries between industries. Financial services organisations are changing their business models in the face of cross-industry convergence, new distribution channels and deregulation.

Empirical evidence has shown that electronic banking is significantly cheaper for banks: less than \$0.01 for an Internet transaction, \$0.27 for an ATM transaction and \$1.14 for a branch network transaction (Worthington-Smith, 2000). As new fintech entrants put pressure on banks’ margins in various segments and product portfolios, global banks have embarked on business model changes by moving with speed to embrace a digital agenda, and most of them have invested significantly in transaction migration through web and mobile technologies. JP Morgan has created in-house innovation and testing centres whereas others like Citi have an innovation division separate from their broader business.

These banks have leveraged technology such that customers can sign up for the services online and the transaction is completed within 30 seconds, and online assistance is also available. It has been realised that the automated services customers hold more products compared to branch customers and this has helped reduce the overall cost structure of the banks.

***Digital channels security issues.*** In the increasingly interconnected global village, criminal elements will likely take advantage of innovative developments in mobile banking, commerce and communication to further criminal endeavours. Adequate security is vital for the success of digital

channels and perhaps more so in the financial services sector because of the greater problems that can arise from fraud and the general need for privacy. Financial services have not been untouched by security lapses as it has been noted that there can never be such a thing as “real” security as hackers can always find a way of getting through the security shields (Forbes, 2018). A Ponemon Institute study published in 2015 pointed out that the total cost of data breaches across corporate sectors rose by 23% annually in 2014, with cyberattacks accounting for 47% of all data breach cases in 2015, an increase from 37% two years prior. The twin forces of fintech-led disruption and cybersecurity threats are “hitting at the already weakened traditional banking model” (Gurdgiev, 2016, para. 27).

The incidence of cyberthreat is increasing, as is the executive board concern regarding the possibility of breaches. EY (2014), through a survey of 1,735 technology leaders, observed that the top organisational threat in the opinions of executives is cyberattacks with the aim of stealing financial information. This concern has “prompted many technology leaders to pursue new technologies to help with authentication and authorisation as well as fraud detection and prevention” (p. 11). All the major standards in security such as tokenisation and biometrics are now focus areas in authentication and fraud prevention and detection that use advanced analytics to respond to anomalies faster.

The implementation of a secure environment is becoming more and more critical as the business environment invests in IT. As part of systems implementation, organisations are spending more resources in developing security architecture that addresses the risks anticipated with respect to intrusion detection, usage of encryption and policies that relate to firewall and router configuration. Cybersecurity strategies are now a board concern, and this has allowed the chief information and security officer a seat at the table.

## **Regulatory Framework of Banking and Payments**

The regulatory framework affecting fintech is changing in dynamic and will make a significant impact on the industry's development. In many markets, regulators are taking on a more proactive role and often encouraging development of the industry (Anand & Mantrala, 2019). For example, in October 2014, the Financial Conduct Authority in the United Kingdom launched Project Innovate, which guides technology start-ups through regulatory processes and makes the case for expedited responses to questions and applications. More and more, regulators are shaping the fintech industry's growth and evolution, and "are also increasingly involved in nurturing fintech clusters, organizing large educational and community-building events in many markets (Dietz, Vinayak, & Lee , 2019, p. 5).

It remains unclear how the costs of regulatory developments will impact the key players, and start-ups in particular. However, regulators will continue to play a balancing act of curtailing the risks to the financial services sector and encouraging innovation. With the blurring of boundaries among jurisdictions, entities and activities, policymakers need to consider the implications for legal principles and common standards, to the extent that they align with national priorities.

In Uganda, the BOU recently (August 2017) instituted the agency banking framework/guidelines to enable the banks to deepen their reach and be able to compete with MNOs offering MOMO services (fintech). Agency banking is the delivery of financial services outside conventional bank branches, where a licensed deposit-taking financial institution contracts a third-party operator, known as an agent, to provide a range of financial services on its behalf. It is a low-cost model that is expected to deepen financial inclusion by providing a bridge between banks and customers.

Regulatory decisions can impact MOMO provider profitability and ability to scale, as evidenced by the recent introduction of taxes (1% across the board) on MOMO transactions as of

1 July 2018, which resulted in many customers shunning the service until the Ministry of Finance reduced the tax rate from 1% to 0.5% for cash withdrawal transactions only (Excise Duty (Amendment) (No. 2) Bill, 2018, Government of Uganda).

**Regulatory environment.** For any market, a key determinant of success is a regulatory framework developed for the specific characteristics of offering digital financial services (Staschen, 2015). In this context, there are two particularly important regulatory issues:

- Permission to use third-party agents for provision of financial services, and
- Permission for non-banks (e.g., MNOs) to issue electronic money without having to adhere to the full range of prudential regulations that are applicable to banks. When the BOU, in 2011, commissioned a diagnostic on its legal framework to gain insight into options for regulating digital financial services, it determined that banks did not have permission to use agents, and that non-banks could not issue e-money without applying for a bank license.

Despite such challenges, the BOU was able overcome unfavourable financial sector laws, allowing mobile financial services to emerge. In consequence, between 2009 and 2011, the country's four biggest MNOs launched mobile financial services that in essence follow the model implemented by other countries that allows non-banks to offer electronic money services, with the exception being that the partner bank is regulated and not the MNO (Staschen, 2015). Compared to the alternative of directly licensing an MNO, the current approach's outcome is that the bank, being the main supervised entity and carrying the regulatory risk, has a bigger role in the monitoring of the MNO's performance. It could be considered, therefore, that the BOU outsourced part of its supervisory task to partner banks. The BOU proceeded with drafting more formal guidelines in cooperation with the UCC, released in July 2016 (BOU, 2016). A committee charged with expanding financial inclusion drafted these guidelines, working closely with consultants to arrive at innovative financial services that could be offered to the poor. The potential of MOMO

to extend financial services to the rural poor is immense, prompting the Ugandan cabinet to approve agency banking guidelines. This means that MOMO agents like shops, kiosks and street vendors can now provide general MOMO services to the public (Staschen, 2015).

### **Customer Adoption of Banking Non-traditional Channels and Drivers for Adoption**

According to Kshetri and Acharya (2012), several factors are driving the adoption and growth of mobile payments, including socioeconomic conditions, rapid diffusion of mobile phones, increased efficiency, and convenience and lower costs. New initiatives like the GSMA Development Fund and the Gates Foundation – Mobile Money for the unbanked programme are key levers to reduce poverty and achieve inclusive economic growth. Research by the CGAP (2013) concluded that MOMO adoption was based on two key variables: social network and social interactions of the customer and a segment of customers who can be described as mobile technology leaders (early adopters).

In the Ugandan context, due to literacy rates and complexity of banking products including cumbersome know your customer (KYC) requirements, MOMO service has to address the following:

- (i) Customers are looking for simple products.
- (ii) Customers are prone to adopt innovation, especially on mobile; this has been evidenced by the current trends in voice and data service adoption.
- (iii) Customers are looking for cheap and convenient ways of sending money.

As articulated above, the Uganda market's financial services is not addressing the mass market or the financial needs of the informal sector and the rural folk. There is huge potential for MOMO services due to the following:

- (i) Low banking penetration,
- (ii) High mobile penetration, and
- (iii) High prices for alternative transfer means.

While there are certain more “upscale” or wealthy customers who use phones, an above-average section of the customer base is likely customers who do not usually have access to traditional or conventional financial services and who are seeking lower prices.

The main ingredients for MOMO adoption are building awareness, customer education, value proposition and product availability through agent network.

1. Building awareness of MOMO service through:

(i) Campaigns developed to create awareness of MOMO

- a. Develop communications that introduce, first, what MOMO service is all about, second, the value proposition — how it could be useful to customers in their daily life — and third, explain exactly how the service works;

(ii) Build one segment, one message (Send and receive money – Simple Secure Instant);

(iii) Distinguish product from competition — through value proposition communication.

2. Educating customers on value proposition of MOMO:

- (i) Above the line and below the line campaigns focused on customer education and building knowledge.

3. Driving customer adoption and activation:

- (i) Below the line activities; collaborating with distribution channel; promotional activities including loyalty programmes, referral schemes, etc.;

- (ii) Client activation strategy potentially including outbound calls/SMS programmes

4. Develop branding and merchandising guidelines for agents:

- (i) Avail appropriate agent branding materials for the channel.

GSMA (2012) summarised the key barriers to digital financial growth as illiteracy, including digital illiteracy, unfavourable regulatory framework, poor infrastructure, including absence of affordable devices, and digital financial strategy. This is supported by the World Bank

report of 2015 that cites lack of technological development and national identification in the country as other barriers.

### **Fundamental Aspects of Financial Inclusion through Mobile Technology**

The Centre for Financial Inclusion (2015) defined financial inclusion as “a state in which everyone who can use financial services has access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, with respect and dignity” (p. 1). Others have broadened this definition to include that the target of these financial services at affordable prices are vulnerable groups such as low-income earners, who may have difficulty accessing credit or getting loans (Joshi, 2011). But why has financial inclusion become so important? Indrawati (2015) stated that 80% of the world’s poor population, who live on less than \$2 a day, have no access to any formal kind of financial service, and that giving them access to the financial system leads to increased job creation, savings and access to credit. The researcher cites the example of Mexico, which in 2002 opened 800 bank branches focused on low-income clients that then led to an increase of 7.6% in the number of informal business owners. Total employment also increased by 1.4% and average income rose by about 7%. As a result of this shift in mindset, World Bank Group President Jim Yong Kim (World Bank, 2013) declared that “Universal access to financial services is within reach – thanks to new technologies, transformative business models and ambitious reforms” (para. 2). He further noted that over 50 countries had committed to targets of financial inclusion, adding: “If they fulfil their commitments, if other countries also set bold targets, and if the private sector responds by unleashing its resources and know-how – then we can reach universal access by 2020” (para. 3).

Ernst and Young (2014) found through a worldwide survey that customer confidence in banking was increasing yet customers had more choices available to them due to banks offering various services; therefore, in order for banks to retain their customers they had to create more trust and convenience in terms of accessibility of bank products and services. Further, the report

states that the key driver in creating trust was their experience, that is ‘how they were treated’. It further asserts that in developing markets (which are countries with lower incomes, life expectancy and literacy rates), mobile technology has led to an inflow of customers who want basic financial services. The drive towards offering these basic financial services to those that it may have been inaccessible to touches on the subject of financial inclusion.

Global Findex (2017) advised that:

although significant progress has been made in Africa, approximately 57% of the adult population have no access to a formal account, be it mobile money or a traditional bank account. Africa is the world leader in adoption of mobile money with 20% of the continent’s adult population having access to a mobile money account compared to the world average of 4.4%. (2017, p. 3)

Financial inclusion is on the rise globally. The Global Findex (2017) database shows that 1.2 billion adults have obtained an account since 2011, including 515 million since 2014. Between 2014 and 2017, globally, the share of adults holding an account with a financial institution or through a MOMO service rose to 69% from 62%, while in developing economies this rose to 63% from 54%.

Chibba (2009) underscored the importance of financial inclusion as a means of addressing poverty as well as issues of access and equity. The researcher further pointed out that the MOMO facility enhances financial inclusion for rural people as it overcomes the barriers faced by traditional banks. Research carried out by Bhavhani, Chiu, Janakiram, and Silarszky (2008) and Dermish, Kneiding, Leishman, and Mas (2012) seems to suggest that, as noted by Nyagilo, Sakwa, and Namusonge (2017), there are “relational benefits that accrue between transacting parties eliminating the need for middlemen, as a result it shrinks information asymmetry and increases the frequency of transactions and redress[es] market inefficiencies” (p. 555). MOMO service allows users/customers to benefit from remittances from either family members or friends living

abroad, resulting in improved economic well-being as the poor obtain a source of income (Alleman & Rappoport, 2010; Morawczynski & Pickens, 2009).

### **Empirical Evidence on the role of Fintech in Competitive Advantage and Digitilisation**

This section of the literature review discusses case studies to support the hypotheses. It also outlines some of the organisations that have managed to leverage IT for competitive advantage and/or collaborated with fintech companies.

**Citigroup fintech strategy.** Citigroup is one of the pioneers of developing the ATM delivery channel as this was aimed at delivering online interactive transaction products and services. Citigroup management recognised an opportunity to provide innovative products and services based on the “new” technology early in its infancy (Glaser, 1988). The goal was to provide customer convenience and to have broad external visibility with minimal need for support from the existing back office operating organisations of the bank.

The ATM was deployed in 1976 throughout the New York City branch system and it became an instant success. Citibank’s market share, which had been stagnant at 4%, shot to 13.4% in New York, a marketplace with little or no population growth at that time. Customers felt they were getting something that no other bank could offer, symbolised by the advertising motto “The Citi Never Sleeps”, which captured the feeling of the time.

Citibank retained this differentiated product position with essentially no competitive response until the early 1980s. It took more than 4 years for the major banks in New York City to decide how to respond and then develop both the network infrastructure and teller machine base that could compete with Citibank.

Due to the advent of fintech disruption that is threatening to usurp the multi-trillion-dollar banking industry, Citi Fintech was set up in line with a “Cambrian explosion” of innovation to be a fast-paced company within the Citigroup that would offer transformation and adoption of digitising Citi. The new company focused on rapid prototyping, working on 2-week sprints to

bring agility and faster turnaround time of projects that would have taken years to complete (Gandel, 2016). This facilitated the development of a mobile app that quickly gained prominence among Citi customers.

Citi Research (2016) projected that revenues of fintech start-ups would leap 10 times to more than \$100 billion by 2020, and the study earmarked four fintech companies to watch, namely Digital Assets Holdings (trading platform for stock swap), Kensho (trading AI platform), SOFI (online lending platform), and Stripe (platform allowing any company to accept payments in minutes).

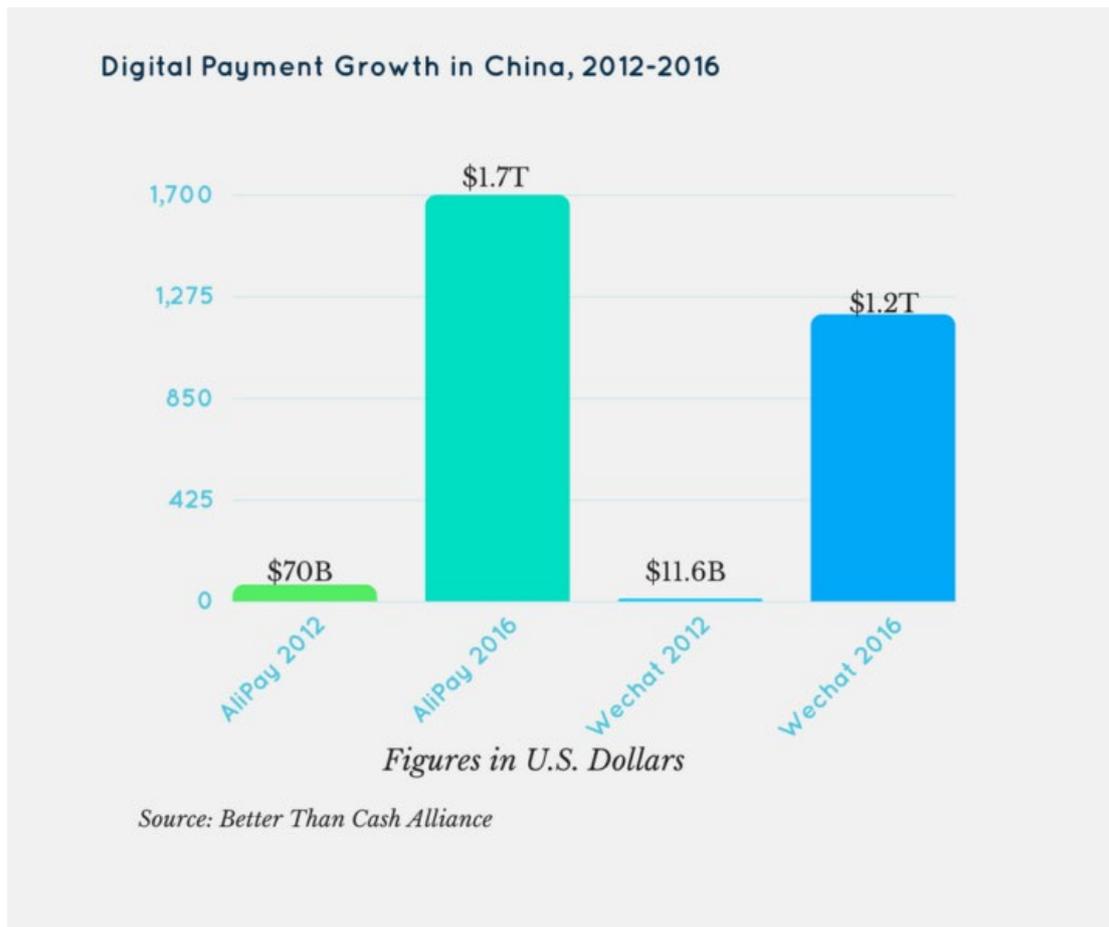
According to Gandel (2016), Citigroup has the largest investments in fintech start-ups as it sees opportunities going forward, given that 51% of its revenue comes from consumer banking and another 11% from payment processing and it has been one of the leaders in international payments. The above revenue streams are the major targets for fintech as it offers a big opportunity for them and a big challenge for Citi and its peers. Citi has also established Citi Ventures, a venture capital company based in Silicon Valley founded on fintech opportunities. Citi has been a vanguard in technology innovation and continues to drive digital platform adoption. Citi has adopted a number of working partnerships with fintech firms and predicts that by 2023 fintech will account for 17% of consumer banking services in North America or \$203 billion, and has surely put in strategies for rapid adaptation and become part of the fintech revolution (Gandel, 2016).

**Tencent's WeChat fintech platform.** According to ChinaTechScope (2018) WeChat was developed by Tencent in 2011 and has become one of the top five instant messaging apps globally. Distinguin (2018) pointed out that “WeChat’s turnaround story started in 2014, when it launched the red envelope feature which allows users to send digital cash to their family members, friends, and users” (MEDICI, 2019, para. 2). WeChat provides three major services: chat, wallet, and third-party services. Its chat services have messaging, voice messaging and video calls integrated in it. WeChat Wallet enables users to pay bills, recharge mobiles, make purchases online, transfer

money to other users and make QR code payments at merchant stores. The feature propelled WeChat Pay to gain rapid user adoption. In 2018, it grew its monthly active users to 1.08 billion (1 billion daily active users) (China Internet Watch, 2018). It also helps users to buy virtual currency and gift and wealth management products. WeChat's third-party services comprise online shopping, food delivery, cab riding, subscriptions and travel bookings. In 2019, Chinese travellers made 1.2 billion purchases through the WeChat platform — the majority of the transactions were from Hong Kong, Macau and Bangkok (China Banking News, 2019). WeChat total daily payment transactions exceeded 1 billion in 2018. The increase in Tencent's revenues in fintech in 2018 was driven by its uptake of commercial transactions collected from merchants, cash withdrawal fees and credit card repayment charges collected from customers, and services fees from financial institutions for the distribution of fintech products (China Internet Watch, 2019).

Tencent's surging fintech growth is driven by online wealth management, and it has since launched the Salary Wealth Management Plan and obtained a fund agency sales license in Jan 2018. It has also obtained LiCaitong, which launched two online pension funds (China Banking News, 2019). Tencent continues to boost its payment penetration in the food and retail industries with features such as scan to pay, and last October launched a first-of-its-kind cross-border mobile payment service that enables WeChat Pay Hong Kong users to carry out RMB denominated transactions that are funded by Hong Kong (China Internet Watch, 2019). Figure 5 shows the dramatic rise of WeChat in the digital payment space in China. According to Noto (2016) and quoting a report by UN-based Better Than Cash Alliance, "Chinese consumers sent about \$3 trillion in payments through Alibaba and Tencent payment services in 2016" (para. 2).

**Figure 5. Digital Payment Growth in China (2012–2016)**



**Emerging cases for MNO and banking partnerships.** In order to understand the MNO and the bank’s business model, a few examples of such partnerships in different parts of the world are captured below and will touch on the following points:

- (i) The MNO’s market position and strategic intent;
- (ii) The benefits accrued to the bank in terms of cross-selling and core innovation with an MNO;
- (iii) The benefits accrued to the bank in terms of mobile platform and distribution outlets;  
and
- (iv) How competitive advantage is derived through cost leadership or differentiation from such an alliance.

***Bharti Airtel and Kotak Mahindra Bank.*** Bharti Airtel is the largest provider of mobile telephony in India with a subscriber base of 215 million and 31% market share. It has a distribution network of over 1.4 million retail points. Airtel offers MOMO services under the brand name Airtel Money, and it launched the first mobile-based pre-paid payment service in India (Airtel, 2015).

Kotak Mahindra Bank is the fourth-largest Indian bank by market capitalisation. In 2014, Kotak announced its thrust on digital and social media with the launch of innovative solutions through a “first-of-its-kind fully integrated social bank account named ‘Jifi’, and world’s first bank instant funds transfer platform using Facebook called ‘KayPay’” (Kotak Bank, 2015). Subsequently, in January 2015, Kotak launched ‘Jifi Saver’, a savings bank account, with secure and seamless transactions on popular social networks.

In his Interim Budget speech on July 10, 2014, Indian Finance Minister Arun Jaitley announced the setting up of small and differentiated banks. Subsequently, in November 2014, the RBI released guidelines allowing MNOs, retail chains and corporate houses to apply for payment bank licenses (Shubhashish, 2016). As a result, Airtel MCommerce Services Ltd, a wholly owned subsidiary of India’s largest telecom service provider, Bharti Airtel, applied for a payment bank license in February 2015 and indicated that Kotak Mahindra Bank will acquire a 19.90% stake in it (Chakraborty & Kamath, 2015).

Commenting on the synergies between Airtel and Kotak Mahindra Bank, Dipak Gupta, joint Managing Director of Kotak Mahindra Bank, said: “Bharti Airtel has the technology and physical infrastructure, a well-entrenched distribution network in rural and remote areas of the country and has the largest telecom customer base, coupled with our banking expertise, this clearly is a win-win for both” (Peer, 2015, para. 5). On the decision to partner with a telecoms operator ahead of other retailers, Rajat Gupta, joint Managing Director of Kotak Mahindra Bank, said: “Other retail players don’t have such a wide reach or customer base and therefore we chose to

partner a telecom operator” (Chakraborty & Kamath, 2015, para. 13). Gopal Vittal, MD and CEO (India and South Asia) for Bharti Airtel, indicated that “Kotak’s banking expertise coupled with Airtel’s strength in telecom will help deliver financial services to millions of unbanked citizens across the country” (Chakraborty & Kamath, 2015, para. 3).

Shubhashish (2016) summarised the requirements and business model for the payment banks that is being pursued by Kotak Mahindra Bank. The rationale is to further financial inclusion by providing small savings accounts that are used for payments and remittances to the “migrant labour workforce, low income households, small businesses and other unorganised sector entities” (Shubhashish, 2016).

From a regulatory perspective, the bank’s shareholding in the jointly owned payment bank is limited to 30%. Further, the minimum capital requirement for setting up a payment bank is mandated at Rs 100 crore (\$15.76 million) by the RBI (Chakraborty & Kamath, 2015, 2015). Their key focus has to be domestic payments. They do not have permission to lend, but they can accept deposits of up to Rs 1 lakh (\$1,573). They can offer current and savings account deposits and they are able to issue debit cards and Internet banking, but not credit cards. “The Payments Bank is expected to leverage technology to offer low cost banking solutions” (Financial Health Meter, 2015, para. 4). Cash-in and cash-out services are permitted, through channels like ATMs and bank branches. These banks cannot take deposits from non-residents. Remittances made to accounts held by residents are deemed deposits. A payment bank can distribute financial products that are simple and do not share risk, such as mutual funds and insurance (Chakraborty & Kamath, 2015).

Airtel piloted the Airtel Payments Bank in one circle in the last week of November 2016. This was possible as they were granted a license. Rival banks are due to be launched by Vodafone India and Idea Cellular as well as by specialist payments firms such as Paytm.

***Alior Bank and T-Mobile strategic alliance.*** The strategic partnership between Alior Bank and T-Mobile was premised on the need to create synergies between Alior, considered Poland’s

most innovative bank, and T-Mobile, a global telecommunications operator serving over 15 million clients in Poland (Alior Bank, 2013). The formation of the partnership resulted in the bank being able to offer its existing banking products through all available channels utilising “technological synergies and competitive advantages derived from operating model of the bank and telecommunication company” (Alior Bank, 2013, p. 1).

The synergies between banks and MNOs are the result of a need to evolve in line with the mobile revolution. The cooperative undertaking of Alior Bank and T-Mobile will enable the launching of solutions, products and services that are beyond the sole capabilities of any other bank active in Poland. In addition, the bank will be able to benefit from the substantial extension of a sales network, access to the most advanced mobile technologies, ensuring substantial dynamics in client acquisition, as well as growth of the bank’s profitability (Alior Bank, 2013).

T-Mobile, acting as the bank’s intermediary, will offer most of the bank’s products in its physical outlets, which will also be supported by strong brand and marketing activities. The ability to provide such services “to one of the largest client groups in Poland will significantly boost client acquisition dynamics as well as Bank’s profitability” (Alior Bank, 2013, p. 1). Furthermore, According to Telecompaper (2014), Alior Bank attracted 58,000 T-Mobile clients by July 2014 against an estimated 200,000 by year 2014, of which 85% had never used Alior Bank’s services before.

Wojciech Sobieraj, President of the Management Board at Alior Bank, said that the creation of Alior Sync, the first 24-hour fully virtual service, available anywhere in the world through Internet and mobile banking, and offering financial and non-financial products and services that make consumers’ lives easier, was a result of the cooperation between the parties in order to meet the expectations of clients who want to use modern technologies and banking services bundled with extra-financial services. The bank launched the service on 14 June 2012 and already serves almost 100,000 clients.

**Rogers Communications.** Rogers Communications Inc. ('Rogers Communications' or 'Rogers') made a strategic decision in 2011 to apply for a banking license in Canada for the purpose of launching a credit card business. In 2013, a license was granted to it by the Canadian Central Bank (Rogers Communications Inc, 2014). Through this initiative, Rogers Communications sought to offer its telecommunications customers credit cards and participation in a rewards programme, the Rogers First Rewards, as a reward and retention strategy. Customer retention is key in an environment where the churn rates are high.

According to Dobby (2013), Rogers partnered with the Canadian Imperial Bank of Commerce and major credit card issuers, MasterCard and VISA, in this project. Analysts contend that the decision to obtain a banking license was also linked to Rogers' digital wallet strategy, which saw the introduction of near-field communications technology in smartphones (Dobby, 2013).

Rogers gave the bank the ability to grow its business by leveraging the customers of the telecommunications business and taking advantage of the opportunity that existed to provide services that would improve the business' customer retention. Whilst Rogers insisted that it had no intentions of the bank being positioned as a deposit-taking institution, the acquisition of the banking license further created additional future opportunities for the new bank.

**Equity Bank Kenya.** MOMO transfer as a service was started by the Kenyan telecommunications giant Safaricom in 2007. The landscape developed further when the Communications Commission of Kenya licensed three new mobile virtual network operators (MVNOs) in April 2014. This model allows a company to provide MOMO services without owning or building any telecommunications infrastructure by simply partnering with existing MNOs. Equity Bank is one such MVNO. Mas and Staley (2014) argued that there are three reasons that Equity Bank chose this route to get into mobile banking:

- (i) without access to the encryption keys that are embedded in the SIM card, Equity Bank could not guarantee the security of the transactions as they passed through the operator's network;
- (ii) the dominant network, Safaricom, is also a competitor of banks in the MOMO transfer business and therefore it could dictate the price at which banks could access the network, potentially making it expensive to reduce competition from banks; and
- (iii) without access to the mobile phone menu in order to complete the financial transaction, banks have to send the service menu options back and forth each time the customer enters a piece of information (like a pin, and then the type of transaction, the amount for the transactions), affecting the speed of the transaction and the quality of the customer's experience.

Therefore, in order to control these three things — i.e., security, price and speed — Equity Bank became an MVNO. Of importance regarding the issue of price is that Equity Bank will offer the usual services an MNO would offer except it does not manage nor have to maintain the cost of an MNO's infrastructure which is outsourced to a host network for a fee. In this case, Equity Bank has appointed Airtel as its MVNO host by negotiating a basic connectivity service off-take agreement.

While Equity Bank has yet to start offering services to the public, it has announced that it would offer low lending rates for small loans (a maximum of 2% as opposed to the 7.5% offered by others in the market) as well as low transaction costs for money transfer of between \$0.01 and \$0.28. This caused enough ripples in the market, resulting in Safaricom slashing its transaction fees by 65%.

***First National Bank of South Africa.*** First National Bank (FNB) of South Africa launched mobile services in June 2015 by introducing its own mobile SIM cards. This new product “adds the mobile voice and data service to the bank's growing technology-focused offerings” (Fripp,

2015b, para. 2), which also includes an asymmetric digital subscriber line, or ADSL, and 3G broadband packages through FNB Connect (Fripp, 2015b). The service uses Cell C's mobile network for delivery. According to Jacques Celliers, the CEO of FNB, "Mobility and banking innovation are now synonymous in the minds of FNB customer" (Fripp, 2015b, para. 3), and he described the launch of FNB Connect as the next step in their digital evolution. Once a customer gets an FNB Connect SIM card its details are linked to the customer's FNB online banking profile, allowing the customer to check their bank balance and top up their mobile line balance from there.

The integration of this offering with digital platforms such as FNB's Online Banking will afford customers the benefit of a single login to simultaneously manage their financial and mobile accounts. This provides peace of mind knowing that the same advanced security that protects customers' financial accounts will also protect their mobile accounts. (Fripp, 2015b, para. 5)

The bank is already established in the telecommunications space with "over 2 million customers topping up with airtime and bundles monthly and over 285 000 discounted smart devices sold since 2011" (CAJ News, n.d., para. 7). SIM cards are sold separately from devices and customers are able to choose from a range of mobile voice and data products. "The FNB Connect mobile offering will add value to our customers' lives as it is seamlessly integrated into all our banking systems" (CAJ News, n.d., para. 4). Customers also have the option to easily port their existing cell phone number through FNB's electronic banking channels. Further, the Flexi Package will constitute the core offering, "which is unique as customers can manage their account by creating their own mobile package and have the ability to change it every month" (CAJ News, n.d., para. 11), as advised by Ravesh Ramlakan, CEO of FNB Connect. Transparency and the ability to control spending are made possible by electronic features, including real-time history of call transactions, ability to set limits on bills and settings regarding notifications. Aligned with the bank's strategy aiming to encourage customers to make use of digital banking instead of physical branches, digital platforms are used for the ordering and activation of SIMs. Other self-service

options are also available, such as SIM Swap, blocking one's SIM and activating international roaming calls through Online Banking (Mynewsroom, n.d.). Ramlakan concluded that:

The banking landscape has evolved tremendously and with the help of technology we are able to better enrich the customer experience. We believe that this valuable service will assist customers with the opportunity to do their banking and mobile services from one platform. This is yet another innovation aimed at offering our customers the benefit of integrated and seamless mobile services which inter-operates across existing platforms. (Fripp, 2015a, para. 10).

**Emerging trends.** According to McKinsey (2016b), ecosystems will likely develop to follow customer needs, rather than conform to traditional industry lines. Leaders in these ecosystems will need strong data-analytic capabilities to develop useful insights from the torrent of customer information available, and they will likely use fintechs and others to develop the system and extract maximum value (USAID, 2012). While data and analytic capabilities are crucial to leading an ecosystem, companies will also need demonstrated prowess in cyber security to credibly safeguard the huge amounts of potentially sensitive client data available in the system.

Already, ecosystem orchestrators are building advantageous data-analytic capabilities. For example, China's Ping An established a big data-analytics platform in 2013 to improve cross-selling and customer migration. The platform is a critical component in reaching the company's stated goal of "one customer, one account, multiple services, and multiple products" (McKinsey, 2016b, para. 5). Ping An is already benefiting from the use of this platform, with more than half of Ping An's 109 million core finance customers successfully migrated and also using its online services as of 2016. Across all its platforms, the company has an Internet user base of 298 million people, as of June 2016, presenting powerful opportunities for customer acquisition and channel migration. The recent awarding of a Facebook payment license by the Central Bank of Ireland and the launch of Libra (a cryptocurrency built on blockchain technology) in June 2019 brings in a new dimension to the global payments landscape.

## **Relationship between Case Studies and the Hypotheses**

The issues raised in the case studies seem to confirm that:

- Information technology is a critical component of the business strategy and can be used as a competitive tool, and is the key driver for digitilisation;
- Information technology has provided tangible benefits to businesses that have adopted it;
- Fintech technologies have changed the competitive arena and will continue to change the shape of the financial services industry, especially on payment platforms;
- Companies have to continuously be innovative and be in the forefront of the competition as IT competitiveness is short-lived since the competitors can easily replicate the same technologies;
- The regulatory framework has to keep pace with innovation;
- Collaboration of banks and changing of the distribution model plus adoption of new channels is changing the banking landscape.

## **Implications for the Banking Industry in Uganda**

In light of the preceding arguments, banks in Uganda may well have competitive strategies that are linked to technology strategies. The macro-economic changes mentioned in Chapter 1 must have exerted some pressure on the banks to adopt one competitive strategy or another. Against the backdrop of competitive pressures that saw phenomenal growth in the number of players in the sector, the advent of mobile applications and agency banking around the same time could not have come as an accident but rather a responsive technology strategy. This in turn provided an alternative service delivery channel for the banks that embraced the technology, but posed new challenges for the respective banks' competitive strategies on how to differentiate this delivery channel from the competition. Further technological developments such as the mobile app adoption and adoption of DLT and AI will continue to impact on the competitive strategies of

institutions. As Evans and Wurster (1997) noted: "...information and the mechanisms for delivering it stabilize corporate and industry structures and underlie competitive advantage" (para. 18).

The competitive advantage of banks lies in the ability to capture, manipulate and manage client information. Banks that deploy IT investment in order to facilitate ease of transactions, customer experience, and introduce new or improved services will out compete their rivals. Whatever the perspective of linking technology, competitive strategy and fintech adoption/partnerships each bank chooses to follow, they should be guided by the notion that "while technology must be guided by strategy; it also simultaneously creates conditions to which strategy must respond" (Zahra, Sisodia, & Matherne, 1999).

### **Summary**

In this chapter, the relevant literature review focused on the following dimensions:

- The theoretical aspects on linkages between IT and competitive advantage and the role of fintech-led disruptive innovation in the financial services sector technologies; and
- Specific case studies of businesses that have adopted fintech as a lever to achieve competitive advantage.
- MOMO and digital wallets adoption will drive the digitalisation of banks as the race for mass market customers goes into super drive.

The review clearly showed how IT through digitalisation can be exploited by organisations, especially financial services, to achieve competitiveness as they grapple with the advent of fintech companies in the digital space and compete in a dynamic ecosystem.

### **Chapter 3: Research Methodology**

This chapter presents the research methods and methodology adopted for this study and justification of their choice. This chapter also focuses on the questions' content and phrasing format of the questionnaires and interviews, and the link between questions and the hypotheses. The aim was to achieve the objectives as stated in Chapter 1 under 'Research Methodology':

- (i) Exploring why companies world-wide are focusing on the use of IT to increase performance and competitive advantage;
- (ii) Determining each financial institution's information technological and strategic positioning with respect to other institutions in Uganda;
- (iii) Finding out whether Ugandan institutions use IT as a tool to sustain or enhance competitiveness and ward off fintech challenges;
- (iv) Determining Ugandan customer perceptions on the use of fintech-induced products such as MOMO;
- (v) Establishing hindrances and options that are at the disposal of Ugandan banks in implementing new technologies and keeping up with the dynamic technological changes.

#### **Essential Definitions**

A research method is "a systematic and orderly approach taken toward the collection and analysis of data so that information can be obtained from those data" (Jankowicz, 2005). Collis and Hussey (2009) referred to research methodology as "the overall approach to the research process, from the theoretical underpinning to the collection and analysis of data". The attitude towards the research, embracing the nature of the phenomenon, the manner of data gathering and the analysis of the phenomenon represents the philosophical stand or belief that guides the researcher on how to approach the research work.

The main research methods, as cited by Jankowicz, are:

- Archival method, in which a researcher directs questions to people and written sources concerning issues and events in the past. The aim is to understand the present and predict the future, using either a historical view or biographical analysis.
- The case study, in which the researcher explores issues both in the present and in the past, as they affect a relatively complete organisational unit (single case study) or group of organisational units (comparative case study). The researcher looks to the future by means of the recommendations he/she makes.
- The survey, in which the researcher directs questions to relatively large groups of people in order to explore issues largely in the present.
- The field experiment, in which the researcher identifies the relative importance of one or more variables in situations where a focus on variables rather than issues makes sense.

Research techniques are ‘step-by-step’ procedures that one “can follow in order to gather data and analyse them for the information they contain” (Jankowicz, 1995). Examples of research techniques, as cited by Jankowicz, include:

- Semi-structured, open-ended techniques: the conversation, the individual interview, the key information interview and the focus group;
- Fully structured techniques: the structured questionnaire, and the structured face-to-face interview, together with material on posted and telephone variants.

A research methodology is an analysis of and rationale for the particular method or methods used in a given study and in that study in general. Blaxter, Hughes, and Tight (2014) suggested that a researcher’s preference/capacity in the application of the various methodical options should influence the choice of research method. Thus, the discussion of approach to this study as presented in this chapter, the associated analysis of choice, and justification of research methods and techniques constitute the research methodology for this study.

## **The Research Approach**

The research is a descriptive, cross-sectional survey research study that sought to examine the potential of banks in Uganda to strategically adopt and implement IT for competitive advantage. Further analysis of user perception on the role and use of MOMO as one of the technologically influenced fintech payment delivery channels was also evaluated. The aim of the results was to show whether institutions in the banking sector are effectively utilising IT in transforming their business models and if this investment is being well received by the general public (who happen to be their customers) to counter the disruptive force for good of the fintech challenge.

**Choice and justification of research methods.** The case study and survey methods were adopted for this study to test the four hypotheses, which are recapped below:

As originally proposed, the focus of this dissertation is the case study of the Ugandan banking sector, which is a comparative research covering similar institutions. It was therefore instructive to apply a comparative case study approach to test the hypotheses. Saunders, Lewis, and Thornhill (1997), quoting Robson (1993), defined a case study as the “development of detailed, intensive knowledge about a single ‘case’, or a small number of related ‘cases’”. This relates to “a small number of related ‘cases’” and is what Jankowicz (1995) distinguished as ‘comparative case study’.

The great advantage of the case study in the case of testing hypotheses, over other methods, is that it attempts to be comprehensive and involves describing and analysing the full richness and variety of events and issues in question. (Jankowicz, 1995, p. 181). The main advantage of a survey is that it allows the collection of a large amount of data from a sizeable population in a highly economical way (Saunders et al., 1997). Given the multiplicity of customers who use MOMO, no other method could have been economically used to check the perceptions on the usage of MOMO in Uganda.

The research techniques applied to the study in the context of the chosen methods were:

- Structured questionnaires,
- Unstructured interviews,
- Participant observation, and
- Documentary analysis.

The adoption of a questionnaire survey for bank and MNO customers and an interview survey for staff constituted the basis of data collection for this research. The questionnaire is a self-completed instrument (Lee, 2009), and Johns (2010) maintained that a Likert scale could range typically from two to 11, but the five-point has become the norm and preferred because it strikes a balance between the conflicting goals of offering enough choices and managing the attention and concentration span of respondents. In conformity with this bias and validity evidence, this research opted for the five-point Likert scale. Appendix 2 captures a sample questionnaire.

Details of how the techniques were applied are presented in this chapter's section 'Instruments and tools of data collection'.

**Study population and sample design.** The study population comprised of financial institutions in the categories of agent banking agency, commercial banks, MNOs and finance houses, totalling 24, and 400 customers of retail banks and MNOs who utilise the bank services as well as mobile phone users with MOMO accounts. This research adopted a 75% return rate of questionnaires. Leedy and Ormrod (2013) asserted that a sample size of four hundred (400) suffices beyond a certain population size.

Two sample frames were drawn from the study population:

- All banks that to a large extent deal with general public merchant banks, building societies, commercial/retail banks;
- 400 randomly selected customers of varied banks who use MOMO services.

**Sample element respondent.** The research targeted the CEOs, Chief Operation Officers, Chief Information Officers/IT Managers of commercial banks, and building societies as the respondents to the first questionnaire for the study. For the evaluation of MOMO services, the research targeted various age groups of customers on a random basis as the respondents.

### **Instruments and Tools of Data Collection**

The main instrument used for collecting primary data was the survey method through the Survey Monkey tool. Questionnaires were uploaded on the tool and links were sent to the target respondents. Responses were tracked through the same tool.

**Structured questionnaires.** Structured questionnaires (Appendices 1 and 2) were used to gather primary data from the sample under study. The key challenge in the design of the questionnaires was to translate the research objectives into specific primary data-gathering questions. The factors that were taken into consideration in the design of the questionnaires were content of question and response format.

**Testing the instruments.** Pilot questionnaires to test the instruments were sent out to selected banks and colleagues in the first week of June 2018. The aim was to uncover and correct any faults before the final copy was sent out. The pilot study also checked for relevance and completeness of the questions in the questionnaires.

**Administering the instruments.** The main questionnaire was dispatched to the respondents on 24 June 2018 with an introductory note as part of the survey detailing the purpose of the survey and ethical data issues. Appendix 1 shows the structured questionnaire sent to financial institutions. The second questionnaire on the use of MOMO was distributed via a Survey Monkey link to random selected databases of customers requested from the marketing business intelligence team. Tracking mechanism was achieved by use of outbound calls through a service obtained through a third-party calling platform.

**Questionnaire follow-ups.** The cut-off date for the receipt of responses was set to 30 September 2018 and follow-ups were put in effect during the two weeks of August 2018 with outbound call services facilitated by sales and distribution retailers. The response rate that was achieved is reported in Chapter 4.

**Unstructured interviews.** Informal interviews were held with Chief Information officers/IT managers of several institutions to establish trends of digital transformation programmes and IT investments/expenditure. Interviews were also carried out with colleagues on the role and use of digital channels to gauge whether there was customer adoption and user satisfaction. Top call drivers at the call centres of one of the MNOs were also provided from the digital financial services desk.

**Participant observation.** At the time of the study this author was the Director of Information Technology in one of the MNOs and was involved in meetings in which deliberations on the adoption and implementation of digital technologies and MOMO took place. Discussions centred on distribution infrastructure, go-to market strategies, agent and customer on-boarding, and other key parameters for successful MOMO deployment and adoption. The author also attended various forums arranged by the BOU, UCC and FIA on evolving KYC regulations in the industry.

**Documentary analysis.** The documentary analysis was derived from secondary data of the various banks' annual reports and BOU and UCC updates. A GSMA annual review on MOMO deployment also provided insights on trends and MOMO product portfolio adoption.

### **Sources of Data**

Financial institutions do not generally part with information relating to their operations especially in the current environment where new institutions are sprouting and most of the information is regarded as confidential. However, the following sources were utilised for this research study.

**Primary sources.** The main source for this research was the primary data that was gathered through the use of structured questionnaires.

**Secondary sources.** Data was also collected from various sites on the web as well as other media such as newspapers, journals and annual reports. Annual reports gave insight into information relating to growth patterns, IT strategies and problems encountered in implementing IT solutions in the institutions. Newspaper reports and advertisements placed by various institutions highlighted the focus on banks to drive the adoption of digital channels and how easy and convenient opening of new accounts had become simple. The BOU assets and liabilities report was also utilised to determine the market share being enjoyed by institutions in each sub-sector, in terms of deposits.

### **Data Analysis**

For this study, Survey Monkey tools were used for an overall analysis summary of respondents to focus the analytical attention on the results. Data was further extracted to Microsoft Excel to determine further correlation and group the responses for different themes. The themes were developed according to the research questions and empirical data. The aim and purpose were to search for content and individual perceptions of the context and derive a data structure from this (King, Horrocks, & Brooks, 2015).

### **Credibility**

In terms of this study, credibility, the areas of validity and reliability are outlined in order to facilitate the study's contribution and applicability for future research.

**Construct validity.** The extent to which a measurement method accurately represents a construct and observation distinct from that produced by a measure of another construct (quality of conceptualisation).

**Internal validity.** Internal validity focus is on the extent to which the causes of an effect are established by an inquiry (researcher provides a plausible causal argument, logical reasoning

that is compelling). The internal validity is seen as high due to the amount of data collected for the study and comparative study of financial institutions.

**External validity.** External validity relates the extent to which a finding applies or can be generalised to persons, objects, settings of the study. This study followed Yin's (2017) suggestions to strengthen the validity of the study, wherein Yin asserted that with a clear research design, before collecting any data a formulated research question, an identified unit of analysis, and a structured way of interpreting links between data and population, the study may be both rigorous and logical in regards to comparison. This study depicts findings from Uganda's banking and fintech industry, indicating a generalisation of the findings can be given. The study shows different perspectives of the banking and fintech players in the adoption of digital strategies to embrace fintech challenges and in some cases, as depicted in the literature review, join forces in new partnerships. Therefore, the study can provide a basis for similar studies in similar circumstances.

**Reliability.** The extent to which a measurement process produces similar results on repeated observations of the same condition and event. The study can be repeated and produce similar results. (Other researchers can arrive at the same insights if they conduct the same study along the same steps).

### **Ethical Considerations**

An introductory note was adopted to inform the respondents about the purpose of the questionnaire and interviews to be carried out. For instance, the regulator interviewee was aware not to divulge a government-sensitive position on the introduction of MOMO tax beginning mid last year and this was not to cloud their expert views. The relevant data and key points remain anonymous and the researcher was mindful of protecting individual viewpoints.

### **Summary**

This chapter has stated the methodology adopted to test the hypotheses. It has presented the sampling design and discussed the methods used to collect data as well as the data sources.



## Chapter 4: Research Findings and Analysis

This study sought to establish the effect of technological innovation (fintech) on the financial digitilisation efforts of banks in Uganda. The study covered the following:

- How the banks have adopted digitalisation to combat the challenge of fintech (scope limited to MNOs' MOMO offering)
- Customer adoption and impact on financial inclusion
- Impact of regulatory framework and need to get views of the regulators
- Consideration of secondary data from previous research studies

Data was gathered by use of questionnaires and interviews carried out in addition to secondary data analysis. This study used Microsoft Excel for analysis of primary data. Consistent with the position of Ammar, Moore, and Wright (2008) that averages and linear regression, amongst other statistical methods, are most frequently used to analyse survey data, the analysis in this study employed some of these measures to profile and describe the customers' attributes and behaviour and to observe structural relationships amongst the constructs of the model.

Averages on satisfaction implicitly connote customers' perceptions of overall satisfaction for a service process/dimension. The use of averages for the satisfaction constructs assumes a linear relationship between each service attribute and satisfaction, thus undermining possible interaction effects. While research evidence has proven that each service attribute is unlikely to be an independent information source that determines satisfaction levels (Wan, Luk, Fam, Wu, & Chow, 2009), the benefits and insights on the behaviour of the variables as provided by averages remain extremely useful.

This chapter therefore presents an analysis of the primary data and discusses the findings of the research in relation to:

- The hypotheses set out at the beginning of this study, which are recapped below:

H<sub>1</sub>: Mobile payments platforms have taken a significant market share of banking transactions.

H<sub>2</sub>: Fintech companies are threatening the dominance of traditional players in retail banking.

H<sub>3</sub>: Mobile payment platforms have the potential to change banking practices in Uganda.

H<sub>4</sub>: Mobile payment platforms have increased financial inclusion in Uganda.

- The findings of the literature review and the case studies.

The discussion focuses on the following categories:

1. Response rate and respondents' profiles
2. Biases in the research and reliability of information

The analysis has been broken down into the following sections:

#### FINANCIAL INSTITUTION SURVEY FINDINGS

1. Information Technology and Competitive Strategies
2. Information Technology Utilisation
3. Information Technology Expenditure and Investment
4. Digital Strategy execution

#### CUSTOMER SURVEY FINDINGS

1. Demographics
2. Bank Quality of Service (QoS) Delivery
3. Agent Banking and Third-Party Services
4. Digital Services
5. MOMO Services

### **Response Rate and Sample Characteristics**

This study used two questionnaires, as discussed in Chapter 3, and the response rate is summarised in Table 2.

**Table 2. Response Rate**

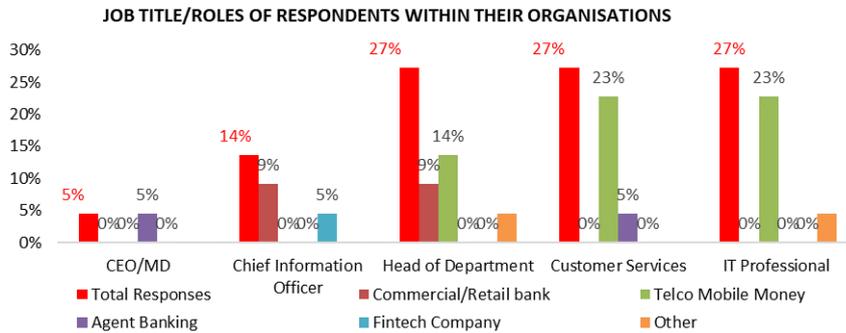
	Expected number of respondents	Actual number of respondents	Response rate
Financial institutions Structured questionnaire to banks	24	19	79.17%
Customer questionnaire Structured questionnaire to customers	400	287	71.75%

The shortfall in response to both the structured questionnaires is attributed to the non-return of questionnaires by the cut-off date. However, in some instances other banks did not respond, citing information confidentiality.

The bank respondents were all classified as IT professionals, CEOs and General Managers, which reflected that they were senior members of the institutions and hence the targeted respondents as defined in the methodology participated in the project.

According to Mugenda and Mugenda (2003), a response rate of 50% or more is adequate. Babbie (2004) also asserted that return rates of 50% are acceptable to analyse and publish, 60% is good and 70% is very good. Based on these assertions from renowned research academicians, the response rates for this study of 71.75% and 79.17% were considered to be adequate for forming conclusions and generalisation.

**Figure 6. Financial Institution Composition of Sample**



Most of the respondents were IT Professionals/HoDs/CIOs (68%) followed by General Managers (27%) and CEOs (5%).

The respondents' profiles of the second questionnaire will be discussed in this chapter's section 'Customer Survey Findings'.

### **Biases in the Research and Reliability of Information**

Potential for bias was introduced through the following:

1. *Choice of respondent:* While the focus was on interviewing one of the top two decision-makers, in the majority of cases the IT specialist was called in to answer the questions. Invariably, the answers painted a good picture of the banks' strategies as reflected by the responses on how they rated their banks' positioning in terms of adopting new technologies. All the respondents indicated that they were leaders in their own right.
2. *Interviewer bias:* The interviewer/writer has detailed knowledge about the local ICT industry and in particular the banking industry, due to his profession in the same industry, and there are possibilities of unconsciously influencing some of the answers.
3. *Ethics of the respondent:* This was to check whether respondents answered correctly or tried to impress the interviewer. Some of these situations were easily detected as the industry players are still few and the implementation of new systems is not usually a closely guarded secret.

The direct interview technique tends to be more efficient in eliciting correct information from the respondents but is costly in terms of time spend. In this instance, follow-up interviews

were conducted over the telephone after receiving the questionnaires. Reliability of information was enhanced by the revision to questionnaires after the pilot study was carried out.

## Financial Institution Survey and Findings

**Comparative data on competitive positioning of retail banks in Uganda.** There are eight most-powerful banks that control assets worth UGX21.7 trillion (\$5.8 billion), an equivalent of 21% of Uganda's GDP, and in 2018 they made a combined profit of UGX676.5 billion.

*Figure 7. Comparative Figures of Total Asset Holding for Retail Banks in Uganda*

Bank	Loans & Advances					
	2017 (billions)	2018 (billions)	Change (billions)	Change (%)	Industry Rank	Market Share
Stanbic Bank	2,134.0	2,508.8	374.8	17.6%	1	19.7%
Centenary Bank	1,335.3	1,529.2	193.9	14.5%	2	12.0%
dfcu Bank	1,334.6	1,398.2	63.6	4.8%	3	11.0%
Standard Chartered Bank	1,221.9	1,311.1	89.2	7.3%	4	10.3%
Barclays Bank	1,028.0	1,177.6	149.6	14.6%	5	9.2%
Bank of Baroda	616.6	757.2	140.6	22.8%	6	5.9%
Equity Bank	496.0	699.8	203.8	41.1%	7	5.5%
DTB Uganda	623.0	534.2	-88.8	-14.3%	8	4.2%
Housing Finance Bank	455.1	511.6	56.5	12.4%	9	4.0%
Bank of Africa	320.4	344.1	23.7	7.4%	10	2.7%
Orient Bank	310.8	334.1	23.3	7.5%	11	2.6%
Citi Bank	261.3	310.3	49.0	18.8%	12	2.4%
KCB Bank	238.7	226.6	-12.1	-5.1%	13	1.8%
Exim Bank (Formerly Imperial)	143.0	169.0	26.0	18.2%	14	1.3%
NC Bank	121.6	143.7	22.1	18.2%	15	1.1%
Eco Bank	145.8	131.6	-14.2	-9.7%	16	1.0%
Tropical Bank	139.1	128.7	-10.4	-7.5%	17	1.0%
Bank of India	85.6	127.3	41.7	48.7%	18	1.0%
Finance Trust Bank	110.4	122.7	12.3	11.1%	19	1.0%
Commercial Bank of Africa	71.8	85.8	14.0	19.5%	20	0.7%
Guaranty Trust Bank	79.3	72.3	-7.0	-8.8%	21	0.6%
Cairo International Bank	47.7	54.8	7.1	14.9%	22	0.4%
United Bank for Africa	27.6	33.0	5.4	19.6%	23	0.3%
ABC Capital Bank	16.4	19.6	3.2	19.5%	24	0.2%
<b>TOTAL</b>	<b>11,364.0</b>	<b>12,731.3</b>	<b>1,367.3</b>	<b>12.0%</b>		<b>100.0%</b>

Source: CEO East Africa

UGANDA BANKING INDUSTRY PERFORMANCE (CUSTOMER DEPOSITS)						
Bank	Customer Deposits					
	2017 (billions)	2018 (billions)	Change (billions)	Change (%)	Industry Rank	Market Share
Stanbic Bank	3,620.9	3,892.3	271.4	7.5%	1	19.9%
Centenary Bank	1,911.1	2,282.2	371.1	19.4%	2	11.7%
dfcu Bank	1,987.1	1,979.0	-8.1	-0.4%	3	10.1%
Standard Chartered Bank	1,903.0	1,922.1	19.1	1.0%	4	9.8%
Barclays Bank	1,682.5	1,788.1	105.6	6.3%	5	9.1%
Bank of Baroda	1,166.2	1,301.8	135.6	11.6%	6	6.6%
DTB Uganda	1,167.5	1,148.8	-18.7	-1.6%	7	5.9%
Equity Bank	729.5	875.5	146.0	20.0%	8	4.5%
Orient Bank	554.8	618.0	63.2	11.4%	9	3.2%
Bank of Africa	544.3	568.9	24.6	4.5%	10	2.9%
Citi Bank	547.9	536.1	-11.8	-2.2%	11	2.7%
KCB Bank	532.9	489.5	-43.4	-8.1%	12	2.5%
Housing Finance Bank	379.3	451.3	72.0	19.0%	13	2.3%
Eco Bank	274.8	288.3	13.5	4.9%	14	1.5%
United Bank for Africa	127.8	244.7	116.9	91.5%	15	1.2%
Exim Bank (Formerly Imperial)	220.8	226.0	5.2	2.4%	16	1.2%
Tropical Bank	166.7	182.6	15.9	9.5%	17	0.9%
Guaranty Trust Bank	140.6	152.3	11.7	8.3%	18	0.8%
NC Bank	114.4	150.4	36.0	31.5%	19	0.8%
Commercial Bank of Africa	85.1	134.0	48.9	57.5%	20	0.7%
Bank of India	114.0	125.5	11.5	10.1%	21	0.6%
Finance Trust Bank	103.0	124.3	21.3	20.7%	22	0.6%
Cairo International Bank	74.1	80.5	6.4	8.6%	23	0.4%
ABC Capital Bank	26.5	27.0	0.5	1.9%	24	0.1%
<b>TOTAL</b>	<b>18,174.8</b>	<b>19,589.2</b>	<b>1,414.4</b>	<b>8%</b>		<b>100.0%</b>

Source: CEO East Africa

The above data was extracted as part of the documentary analysis from Monthly Statements of Assets and Liabilities for each sector. The above comparative figures show that the total asset base for established banks has marginally increased whereas new entrants have gained on their losses.

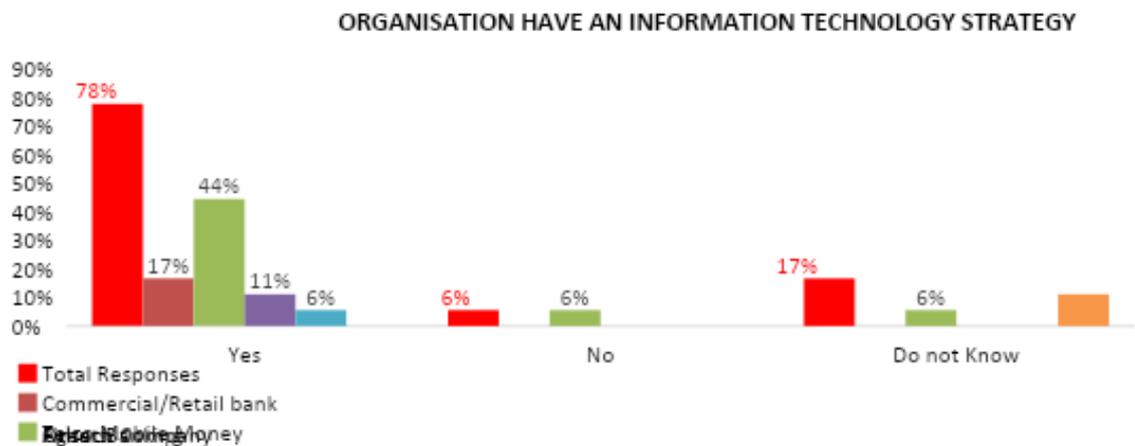
Competition in the Ugandan banking sector is becoming tougher, with new entrants gaining market share and putting pressure on the margins. All the respondents indicated that the level of competition in the sector was intense. However, this has provided banking clients with greater choice and has spurred on all banks to improve cost efficiencies and develop new products, as evidenced by the closing down of some of the branch networks around the country. It has also compelled banks to stop cross-subsidising less-profitable businesses, as exemplified by the shrinking loan product portfolio.

A number of new groupings have altered the composition of the Ugandan banking sector in the last few years. The largest transaction in the industry in the past 18 months was the merger

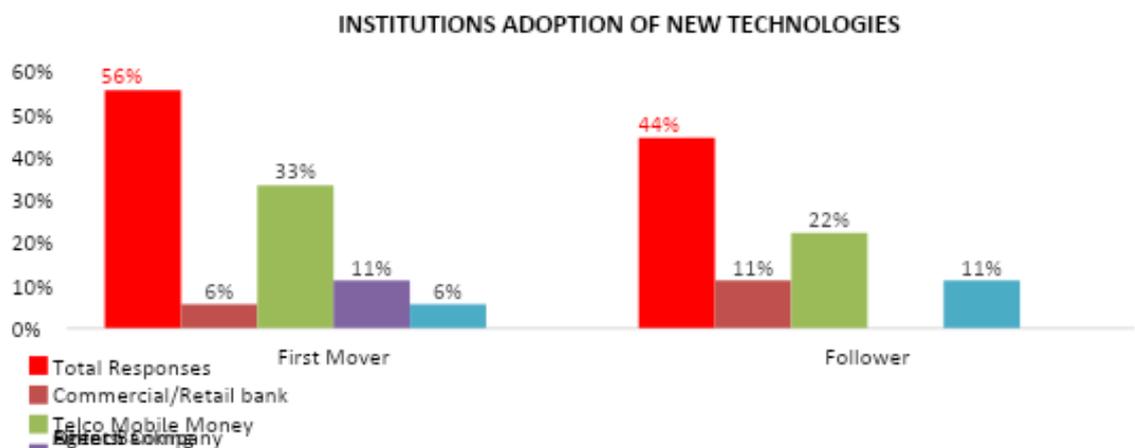
of Crane Bank with DFCU albeit through a BOU audit to avoid a run on the bank due to non-performing loans. A number of issues have been resolved and overlaps consolidated, but alignment of strategies, including IT strategies, have taken longer.

**Information technology and competitive strategies.** Figures 8 through 11 summarise the responses to questions on IT and competitive strategies.

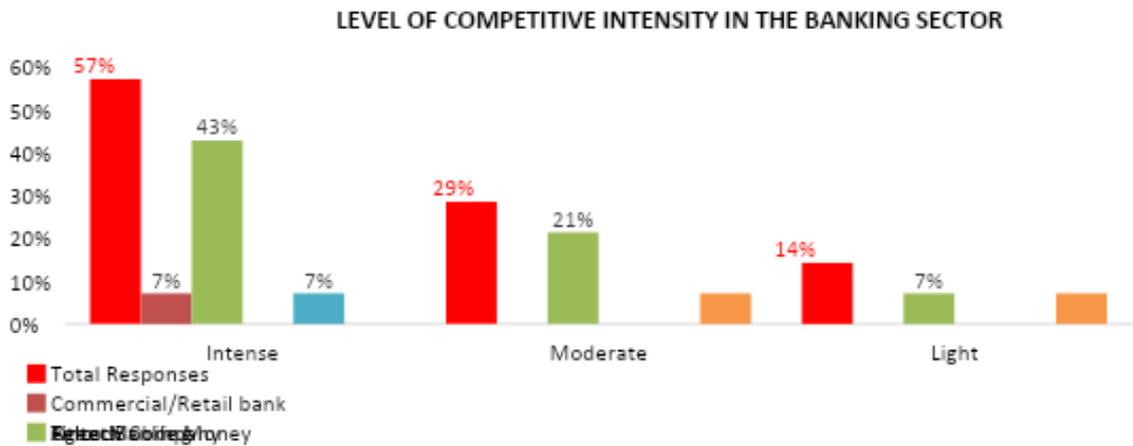
*Figure 8. IT Strategy within Banks*



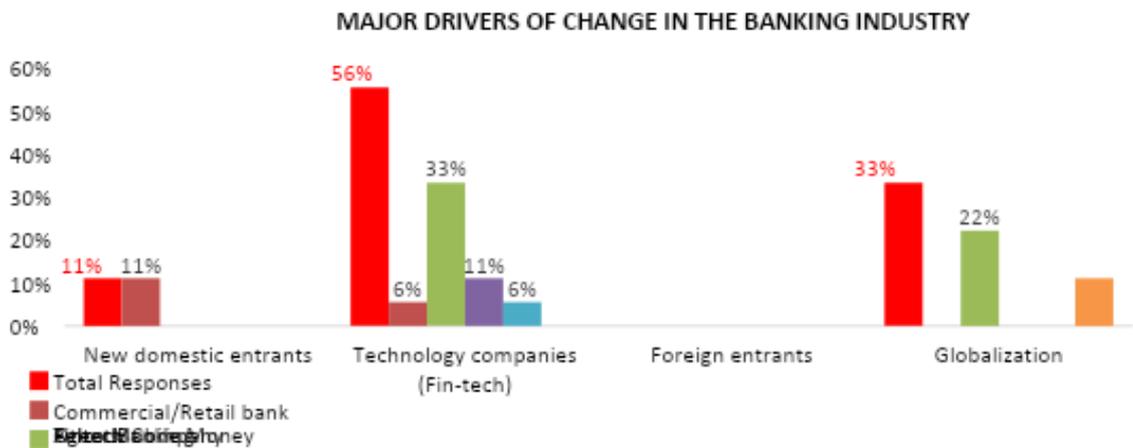
*Figure 9. Institution Adoption of New Technologies*



**Figure 10. Level of Competition in Banking Sector**



**Figure 11. Major Drivers of Change in the Banking Industry**



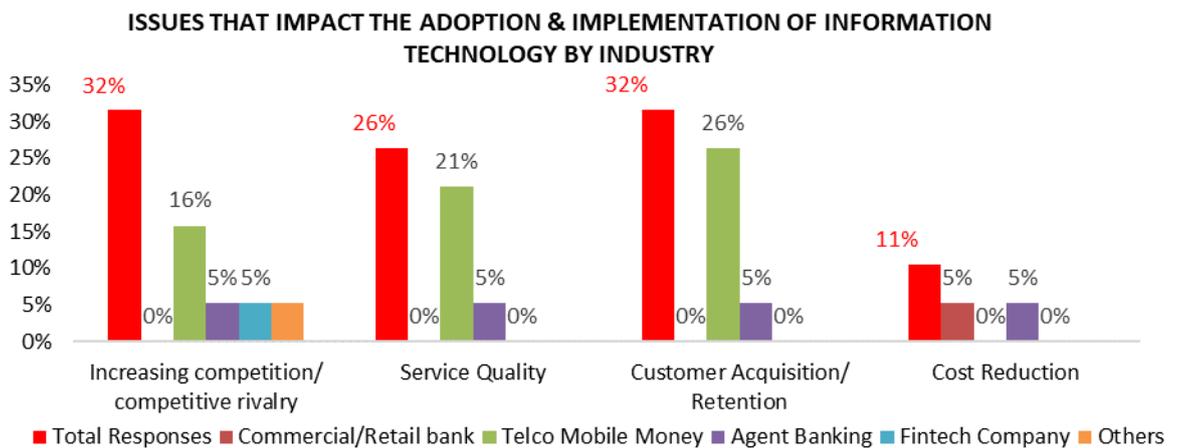
Findings summary for Figures 8 to 11:

- 78% of the organisations had an IT strategy.
- 56% of the organisations rated their institution’s adoption of technologies as first movers, while 57% rated the level of competition in the banking sector to be very intense.
- 56% of organisations generally stated technology companies (fintech) were major drivers of change in the banking sector, seconded by globalisation.

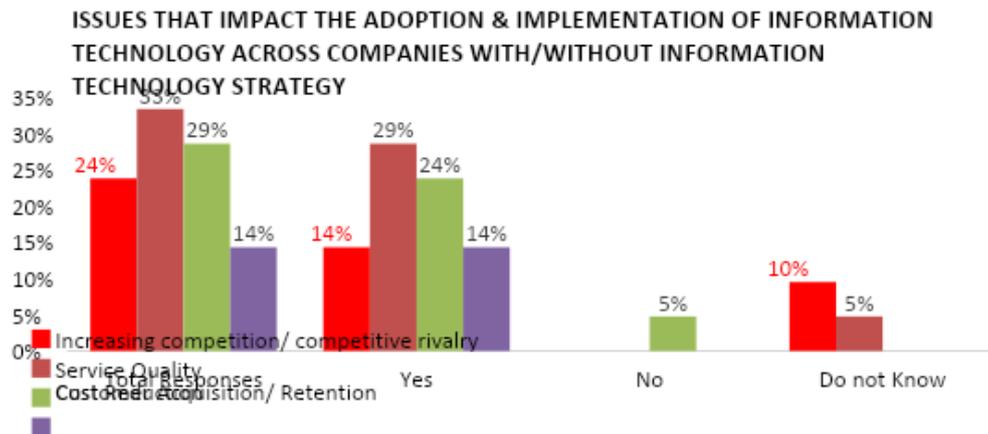
Regarding first movers, the situation is such that foreign-owned banks inherit systems that would have been adopted by parent banks, and experience over the years has shown that banks do not venture into unknown waters, such that the figure of 56% is a bit exaggerated. Banks in the same sector tend to follow what the “leader” has implemented, as evidenced by similar systems being run by several banks. First movers get the opportunity to define the competitive rules in a variety of areas, for example the ATM arena where Stanbic is the uncelebrated leader. In essence, many banks have been followers to foreign-owned banks in terms of the adoption of IT.

Technology had the highest score with 56%, which signifies that technology is a major driver of change across industries and in particular banking, and can create competitive advantage.

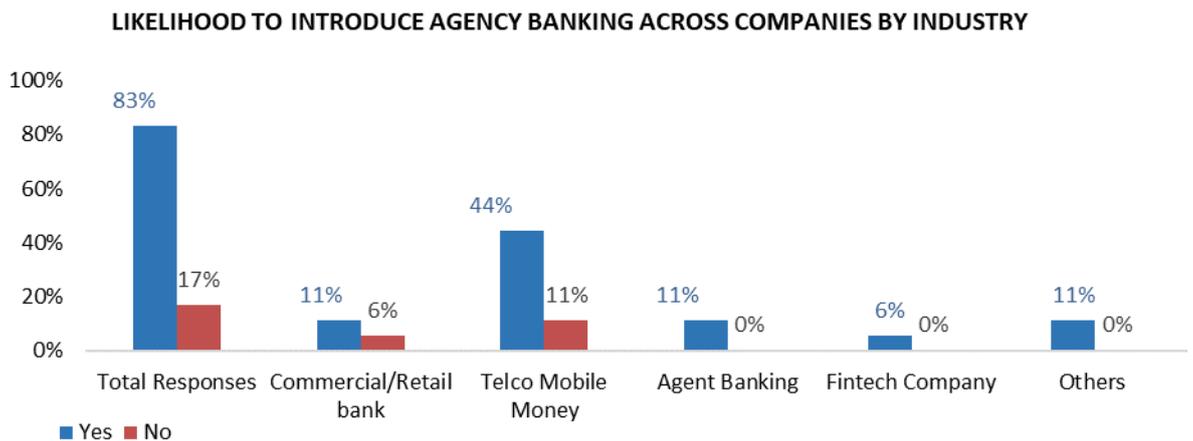
**Figure 12. Issues that Impact Adoption and Implementation of IT**



**Figure 13. Issues that impact IT adoption vs IT strategy**



**Figure 14. Likelihood of Introducing Agency Banking**

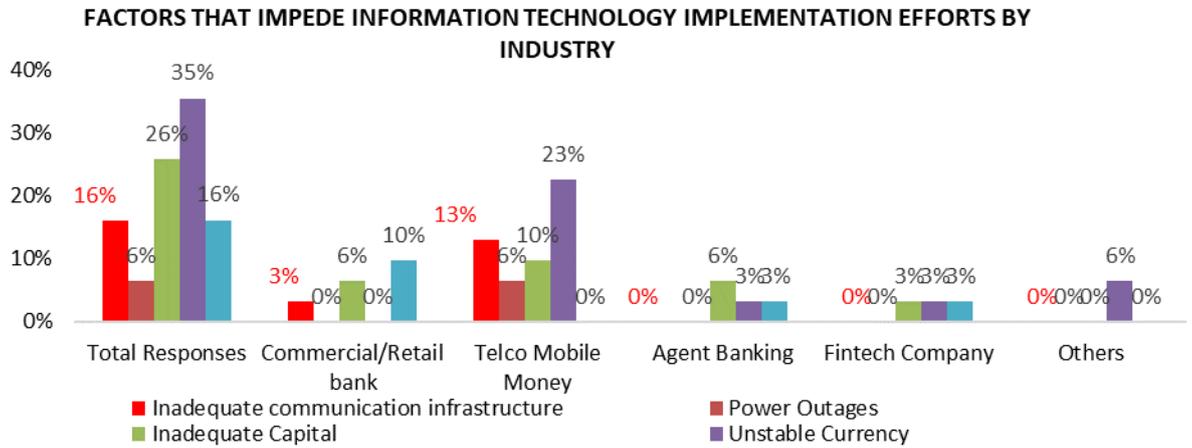


Findings summary for Figures 12 to 14:

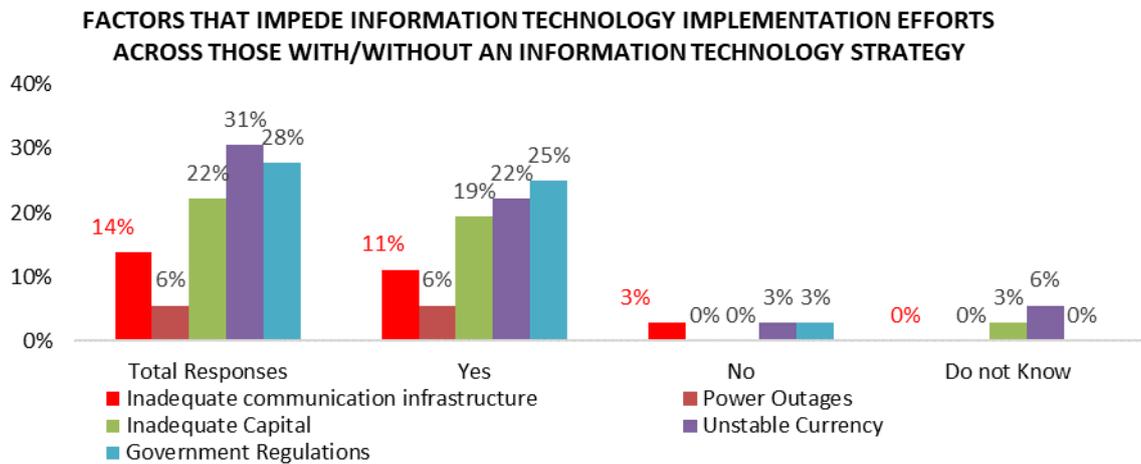
- 64% of the respondents stated increasing competition/rivalry and customer acquisition/retention as issues that impacted the adoption and implementation of IT and cost reduction was indicated as another big factor.
- The above holds true for organisations that actually have an IT strategy, in that 29% and 24% stated service quality and customer acquisition/retention as main issues.

- 83% of the respondents agreed to the likelihood of introducing agency banking as a cost reduction initiative and extending products' reach of the institution.

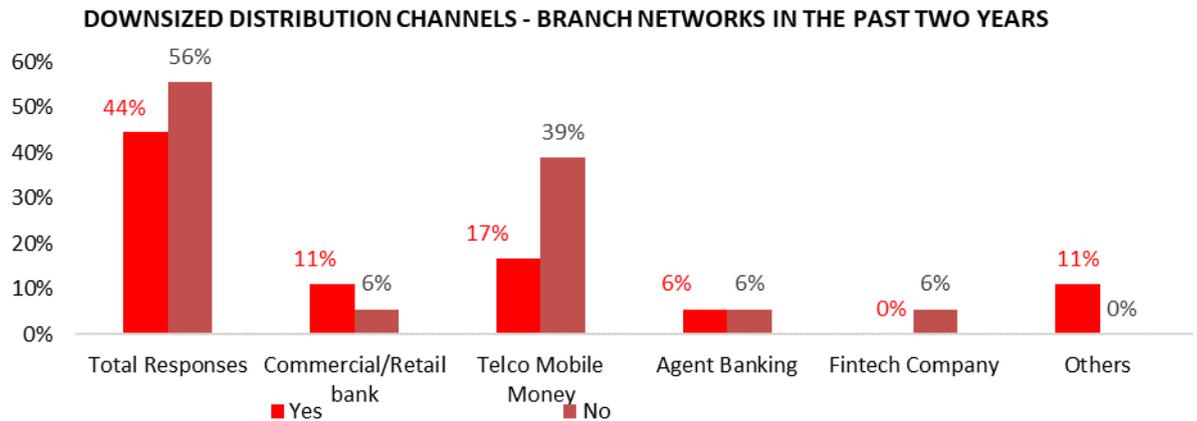
**Figure 15. Factors that Impede IT Implementation**



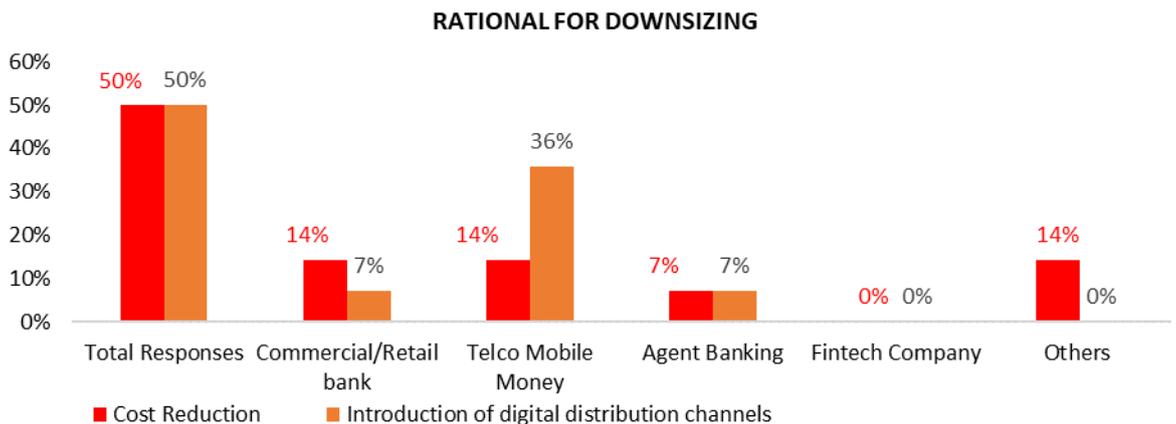
**Figure 16. Factors that impede IT Implementation vs IT Strategy**



**Figure 17. Institutions that have Downsized Branch Network in Last 2 Years**



**Figure 18. Rationale for Downsizing**



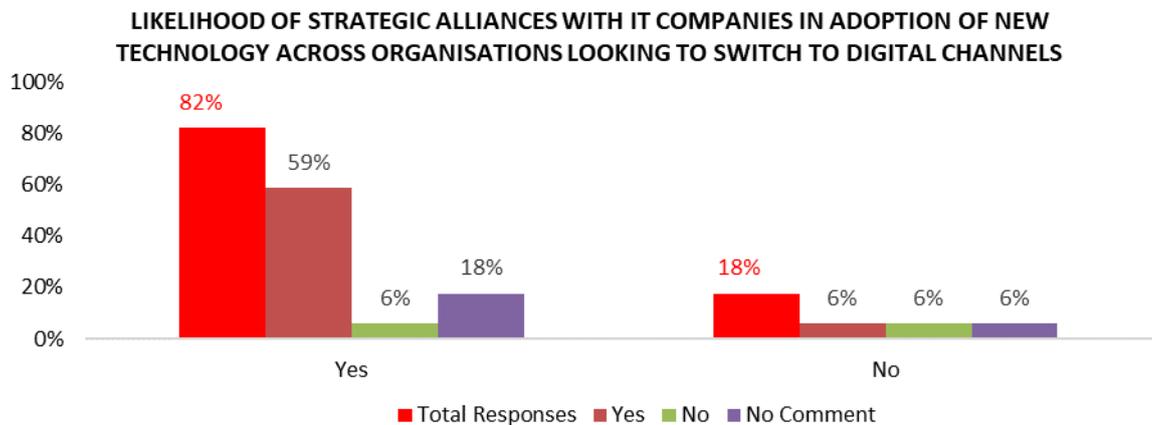
Findings summary for Figures 15 to 18:

- 55% of the organisations generally stated having an existing strategy to switch customers to digital channels.
- 67% of the organisations that had an IT strategy had an existing strategy to switch customers to digital channels.

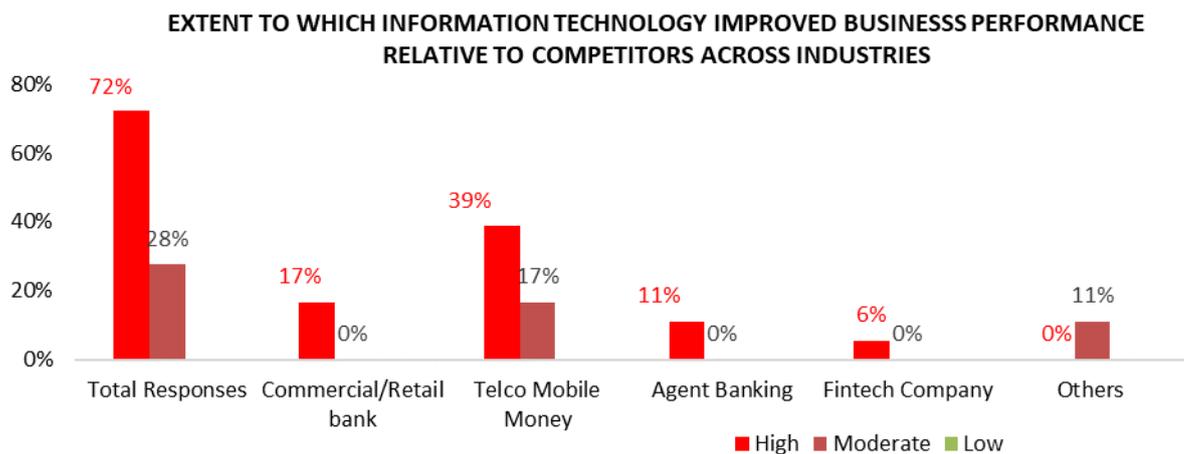
The banking sector has traditionally had a single distribution channel — its branch network — but banks are becoming increasingly occupied with the complexities of serving their different

customer segments through multiple channels, including digital channels, and embracing an omnichannel strategy. This has been made possible by the availability of information technologies. Figure 17 shows that over 50% of the respondents have already downsized their branch networks and the rationale behind this is has been the same — cost reduction and introduction of digital channels.

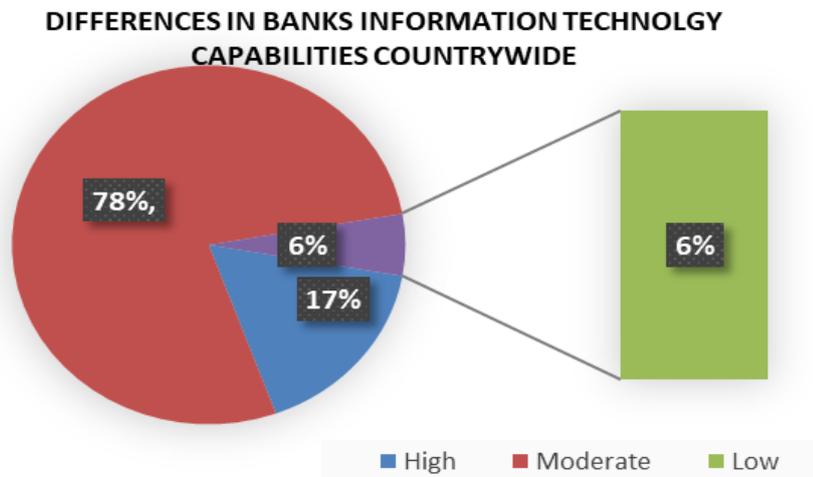
**Figure 19. Likelihood of Strategic Alliances with IT Companies**



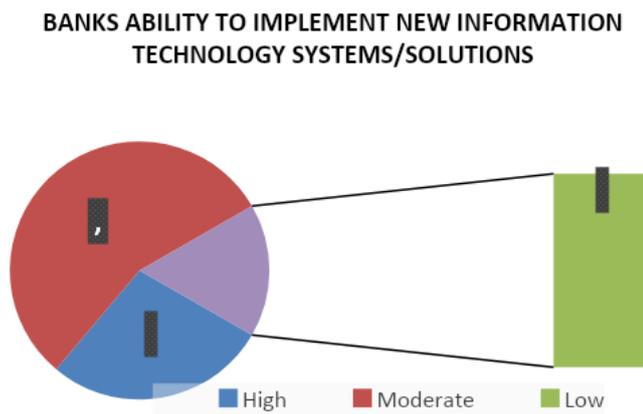
**Figure 20. Extent to which IT Improved Business Performance**



*Figure 21. Differences in Banks' IT Capabilities*

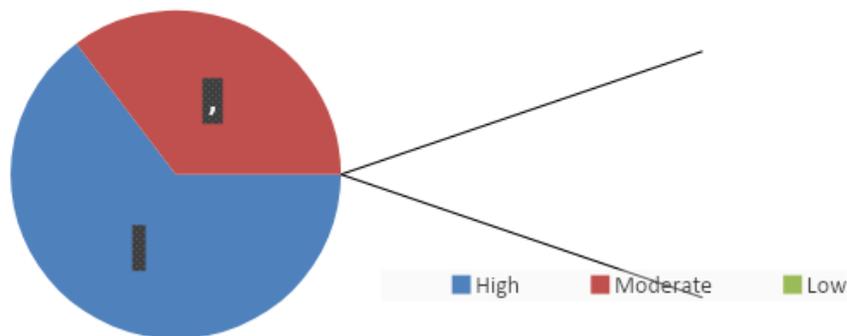


*Figure 22. Banks' Ability to Implement New IT Systems/Solutions*



*Figure 23. Extent IT has Improved Quality of Service to Customers*

EXTENT INFORMATION TECHNOLOGY HAS IMPROVED QoS TO CUSTOMERS

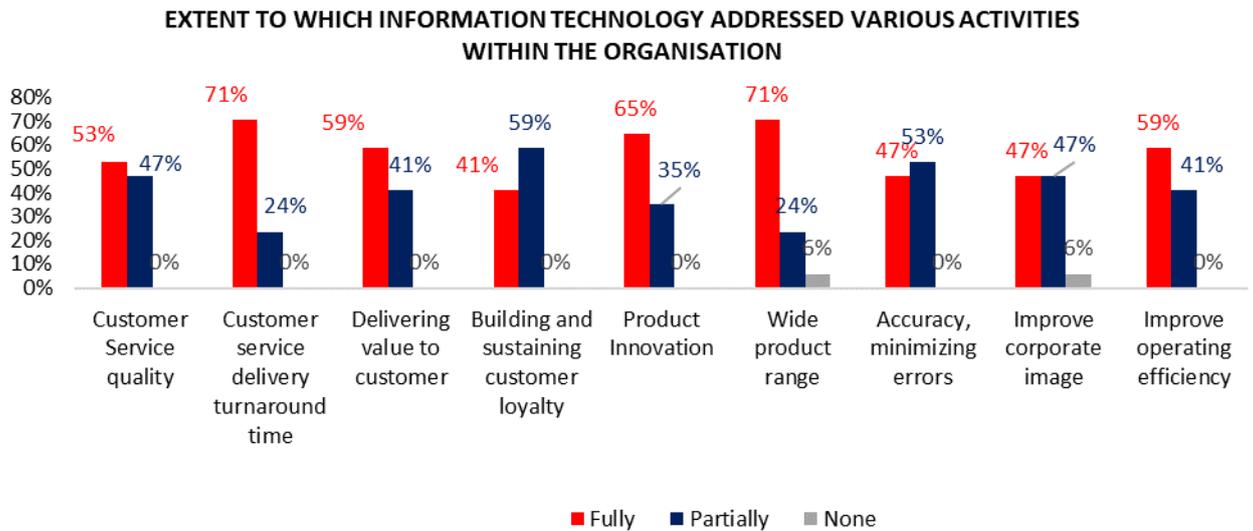


Findings summary for Figures 19 to 23:

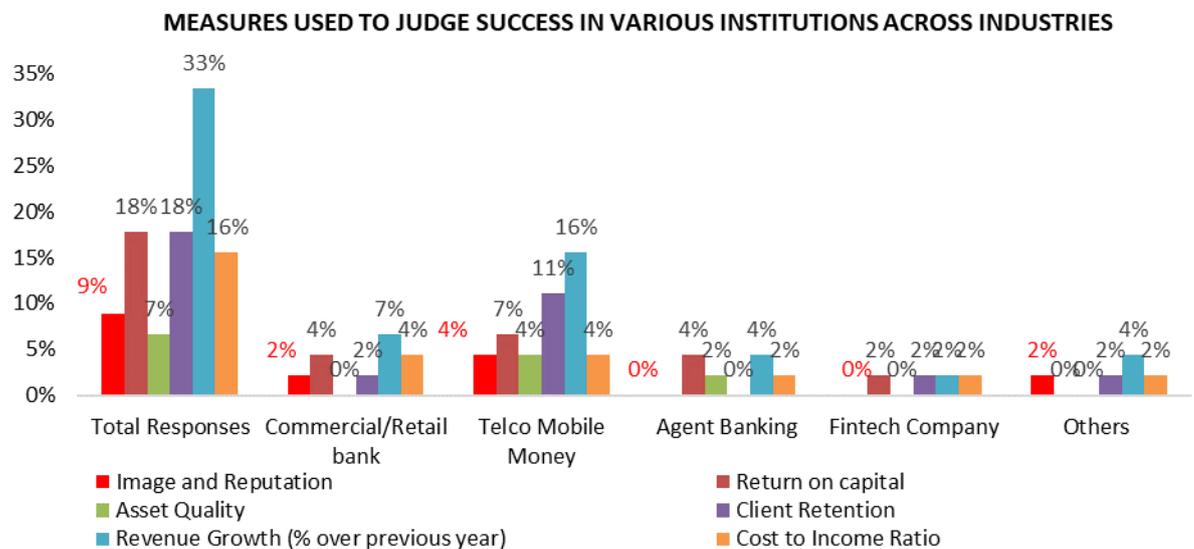
- 72% of organisations stated IT highly improved business performance relative to competitors across the various industries sampled.
- 78% of the organisations stated moderate differences in banks' IT capabilities, while 56% stated banks had the moderate ability to implement new IT systems/solutions.
- 65% stated that IT has highly improved the QoS to customers.
- 82% of the institutions agreed to a likelihood of strategic alliances with IT companies in the adoption of new technology.
- 82% of the companies that had an IT strategy, 66% agreed to a likelihood of strategic alliances with IT companies to adopt new technology.

As for the strategic alliances with technology companies, 66% of the respondents indicated that they will formulate strategic alliances and/or strategic links have already been forged with technology companies. This shows that banks in Uganda are following the trend worldwide where banks are investing in technology companies to outcompete their rivals on the technological front. Notably, two commercial banks have forged strategic alliances with retail outlets to differentiate their product offering and lower their costs by utilising existing physical infrastructure offered by these retail shops for their branch network, although most of the banks have joined a special purpose vehicle company to reinvent the distribution model.

**Figure 24. Extent to which IT Addressed Various Activities within the Banks**



**Figure 25. Measures for Success used in Various Companies**



Findings summary for Figures 24 to 25:

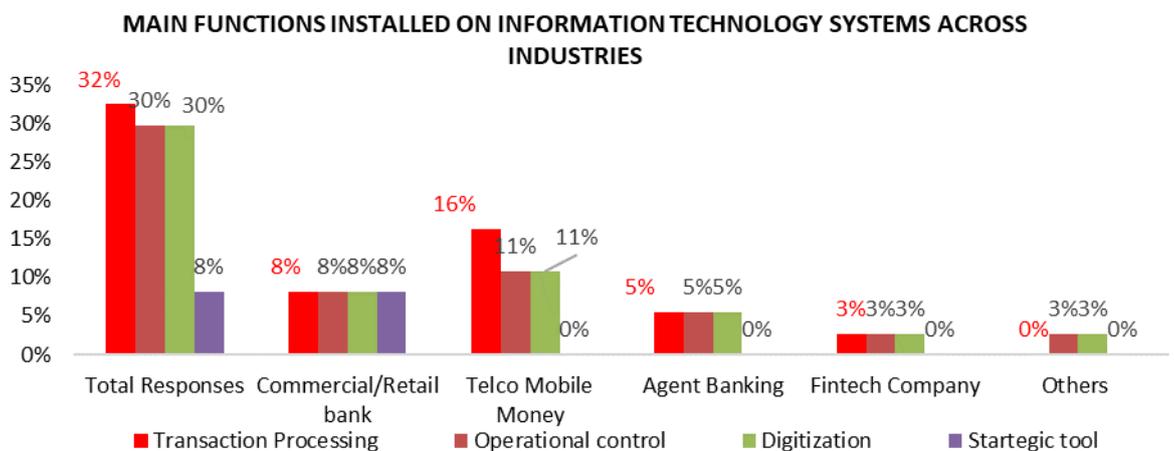
- Over 60% of the respondents indicated that the contribution of IT to business competitiveness confirmed that IT has a very high contribution and 36% believe that there is moderate contribution derived from IT. It is also important to note that no

respondent indicated that IT has had a low contribution. These findings underline the acceptance of IT in the industry and its contribution to competitiveness.

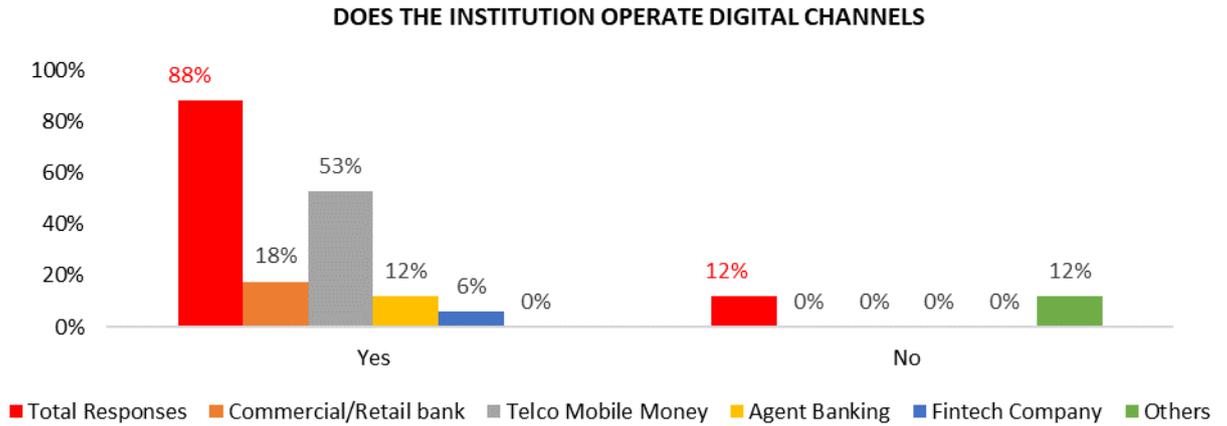
- Generally, IT is perceived as fully addressing various activities, customer experience, service delivery, product innovation, etc.
- Activities that were stated as being fully addressed through IT include: wide product range, customer service delivery turnaround, product innovation, improving operating efficiency, delivering value to customer, and customer service quality.
- Activities that were stated as being partially addressed through IT include: building sustaining customer loyalty, accuracy and minimising errors, and improving corporate image.
- The top three main measures used to judge success in various institutions across all industries were listed as: revenue growth, return on capital, and client retention.
- Commercial/retail banks' revenue growth, cost to income ratio, and return on capital were the top three measures for success.

**Information technology utilisation.**

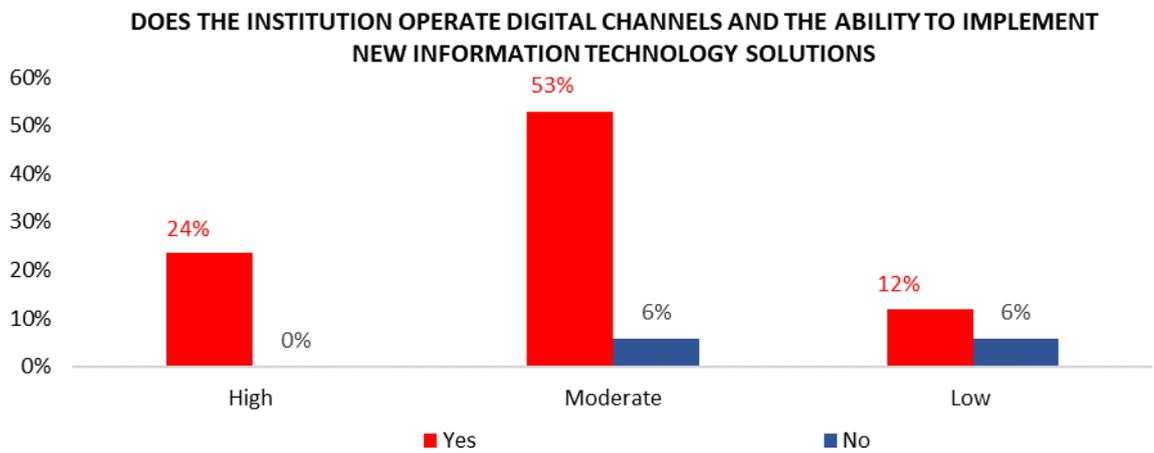
**Figure 26. Main Functions Installed on IT Systems across Banks**



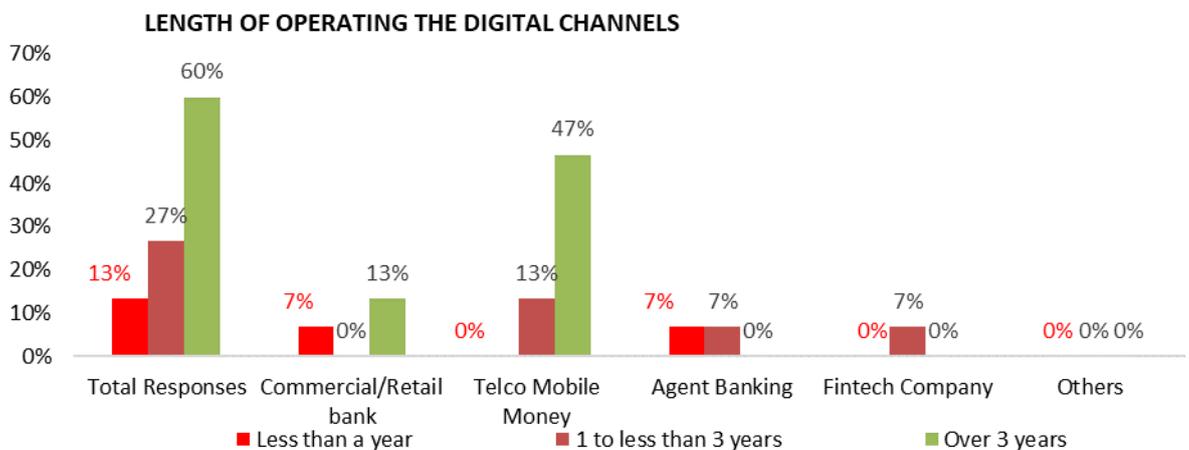
**Figure 27. Institutions that Operate Digital Channels**



**Figure 28. Combination of Digital Channels and Ability to Implement IT Solutions**



**Figure 29. Length of Time Operating Digital Channels**

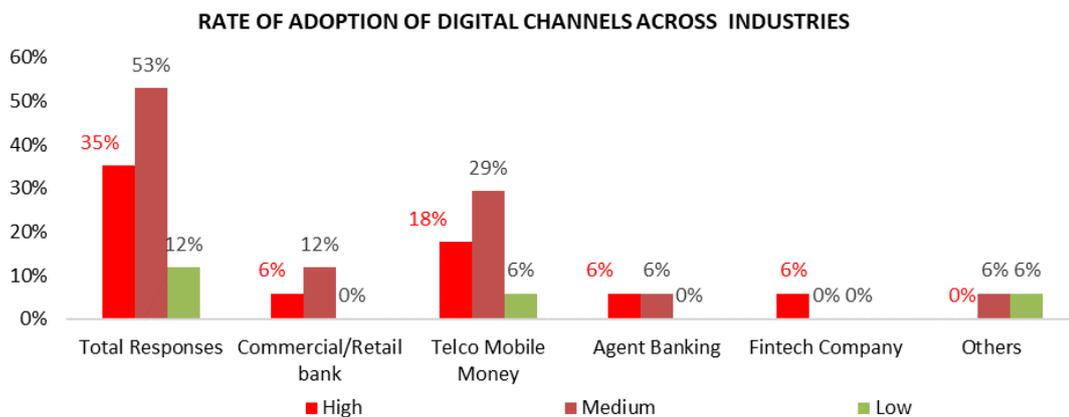


Findings summary for Figures 26 to 29:

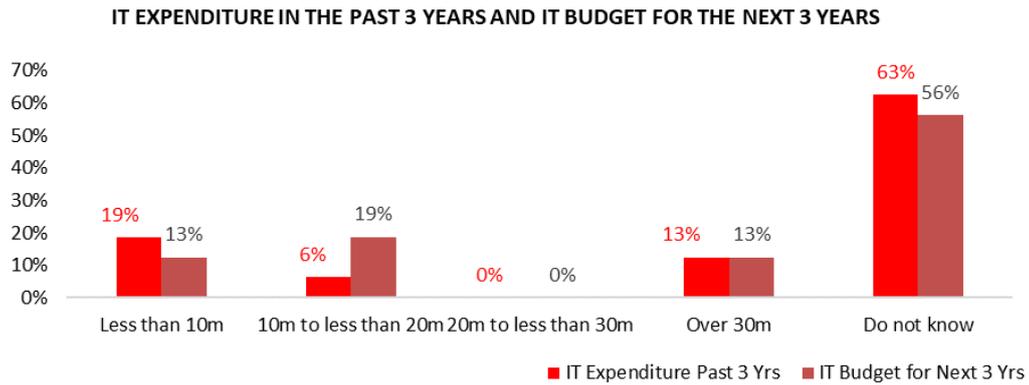
- 32% of the sampled organisations installed transaction processing systems, 30% operational control and digital solutions.
- 88% of the sampled institutions operate digital channels, weighted higher in telecommunications at 53% and commercial/retail banks at 18%.
- Of the institutions that currently operate digital channels, 53% stated that their companies have the moderate ability to implement new IT solutions.
- Of the total 87% of the institutions that have been operating digital channels, 60% have operated for over 3 years and 27% for less than 3 years.

**Information technology expenditure and investment.**

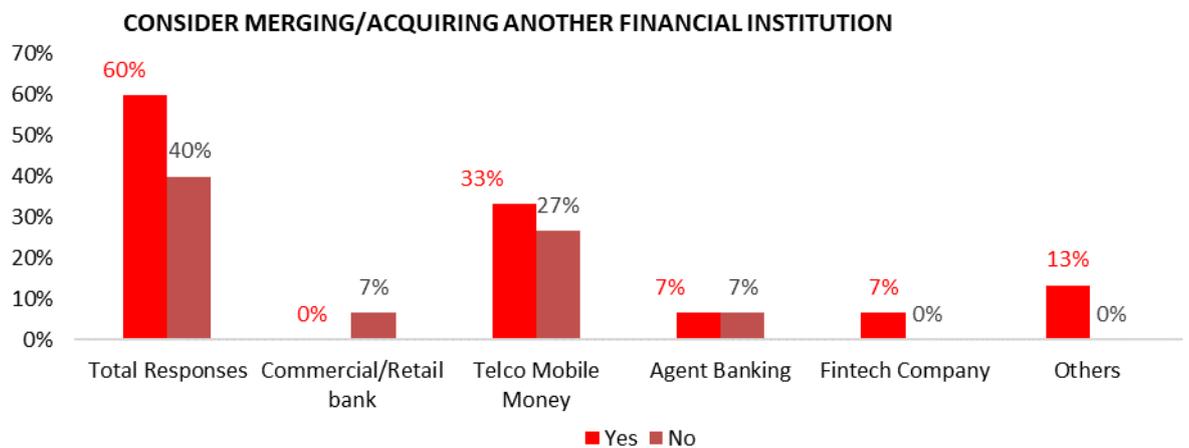
**Figure 30. Rate of Adoption of Digital Channels Across the Institutions**



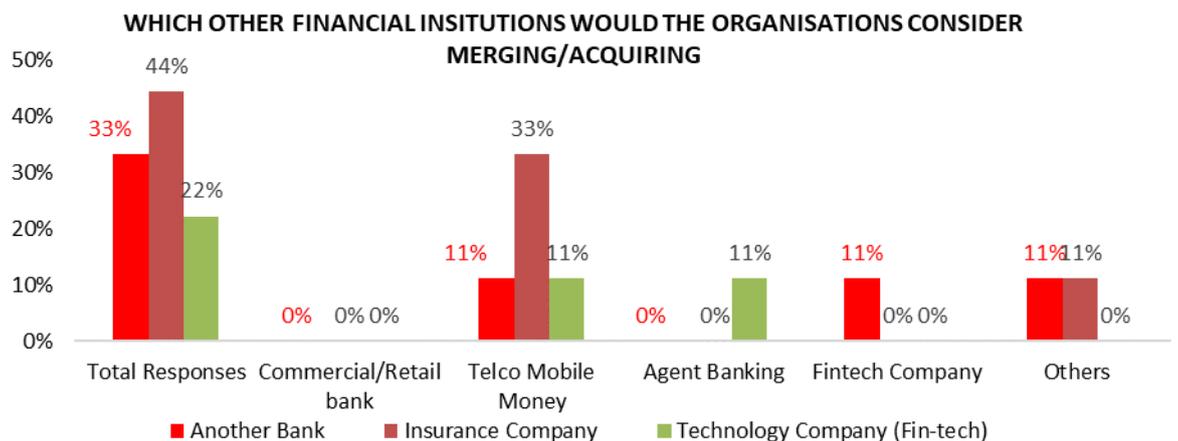
**Figure 31. IT Expenditure in the Last 3 Years and Budget for the Next 3 Years**



**Figure 32. Institutions Considering Merging with/Acquiring Another Institution**



**Figure 33. Which Institution the Organisation would Consider Merging with/Acquiring**



Findings summary for Figures 30 to 33:

- Across the institutions sampled and using digital channels, 88% stated their rate of adoption of digital channel as being medium and high, which reflects a strategy to operationalise digitalisation.
- Unfortunately, up to 63% did not know (or decided not to divulge the figures) their IT expenditure in the past 3 years; however, the larger group of 32% that did know stated that IT investment was between \$10 million and over \$30 million, respectively.
- 60% of respondents said they would consider merging and acquiring another financial institution, while 44% and 33% stated such institutions to be an insurance company and another bank, respectively. Only 11% of the respondents considered a fintech acquisition, which might suggest there is no appetite for fintech acquisition but rather to collaborate more on digitalisation initiatives.

The results suggest that the level of investment in IT has gone up in the last three years and continues to grow steadily in the next three years with most banks budgeting over \$10 million on IT projects. One thing IT can do is to support the customers' holistic view of the company since one eternal business problem is that organisations are split internally into different departments, each with its own systems, and trying to get information is at times difficult. This scenario is still prevalent within the installed systems in Uganda's banking sector, although massive investments are going towards transforming platforms to support digital initiatives.

The results of the research on IT and competitive strategies seem to suggest the following:

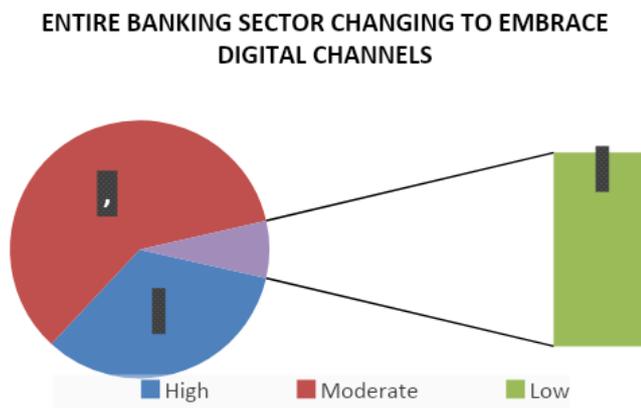
- IT is regarded as a critical success factor by banks, as revealed by the results.
- The rationale for IT spending is to improve service delivery efficiencies and hence gain competitive advantage.
- Banks have identified new digital delivery channels such as mobile applications and mobile banking as the future, and are downsizing their branch network and are likely

to switch customers to these channels, thereby lowering costs, and to differentiate their products, and this has been driven by the fintech competitive landscape.

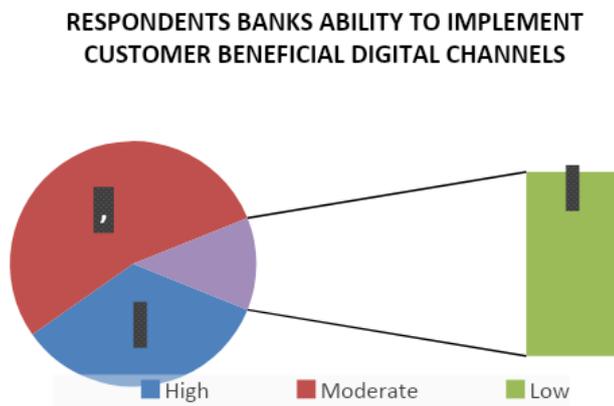
- Banks are likely to strike strategic alliances with technology-based companies to improve turnaround time of delivering new technology-based products.
- Competitive rivalry, customer retention, cost reduction, and mergers and acquisitions could have the greatest impact on competitive advantage through strategic application of IT.

**Financial services digital strategy execution.**

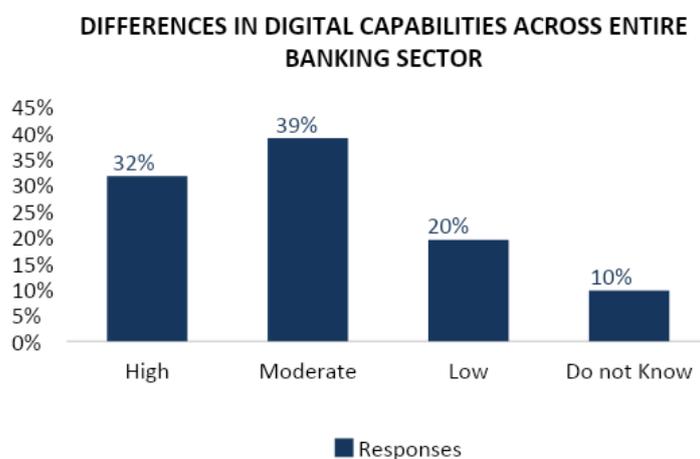
**Figure 34. Banking Sector Embracing Digital Channels**



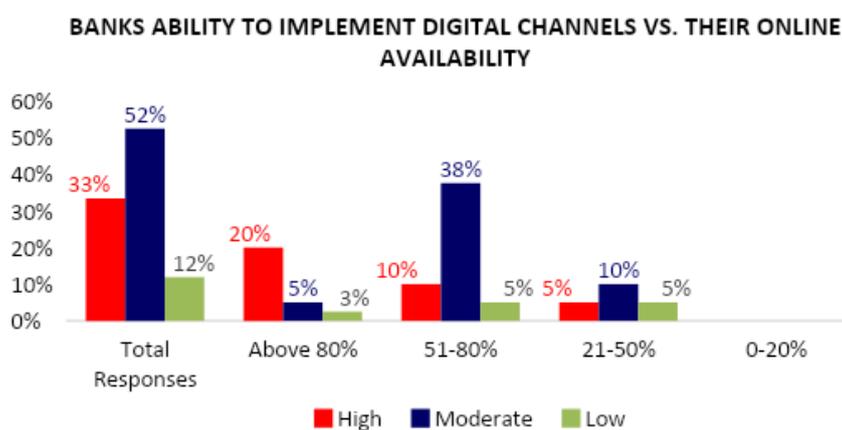
**Figure 35. Banks' Ability to Implement Customer Beneficial Digital Channels**



**Figure 36. Differences in Digital Capabilities Across Banking Sector**



**Figure 37. Banks' Ability to Implement Digital Channels vs Online Availability**



Findings summary for Figures 34 to 37:

- 93% of the respondents stated the entire banking sector as changing moderately and highly to embrace digital channels.
- 39% of the respondents listed the differences in banks' digital capabilities as moderate and 32% as high.
- 52% and 34% of the respondents listed their banks' ability to implement customer beneficial digital channels as moderate and high, respectively.

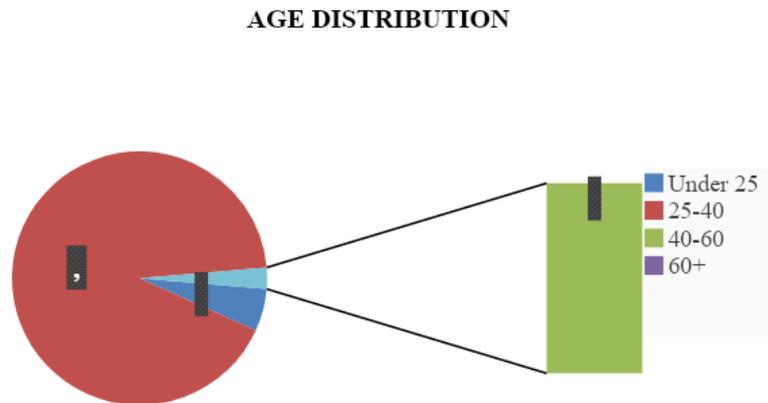
- 73% of the respondents who listed their banks as moderate ability to implement customer beneficial digital channels rated their online availability as 51-80%.
- 60% of the respondents who listed their banks as high ability to implement digital channels rated their online availability to above 80%, which translates to 20% platform unavailability and negatively impacts customer experience.

### Customer Survey Findings

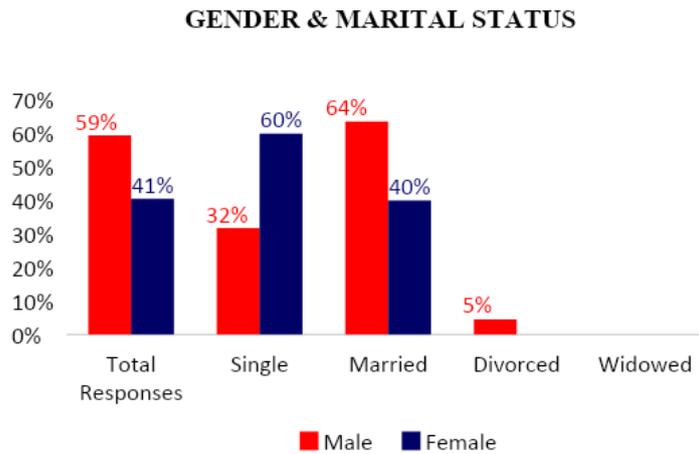
Ugandan consumers were surveyed by means of a questionnaire, as already discussed in this chapter’s section ‘Response Rate and Sample Characteristics’. The response rate was 72% of the total that were sent out in the greater Kampala area. The main reason for the questionnaire survey was to find out how customers perceive the use of MOMO and banking financial services.

#### Demographics.

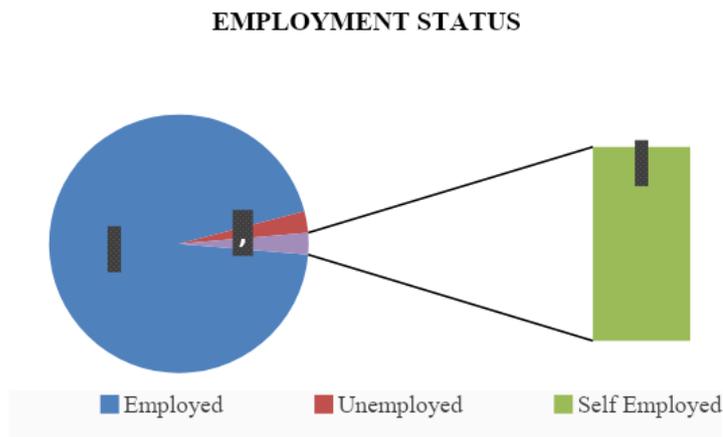
*Figure 38. Composition of Customer Sample – Age*



**Figure 39. Composition of Sample – Gender and Marital Status**



**Figure 40. Composition of Sample – Employment Status**



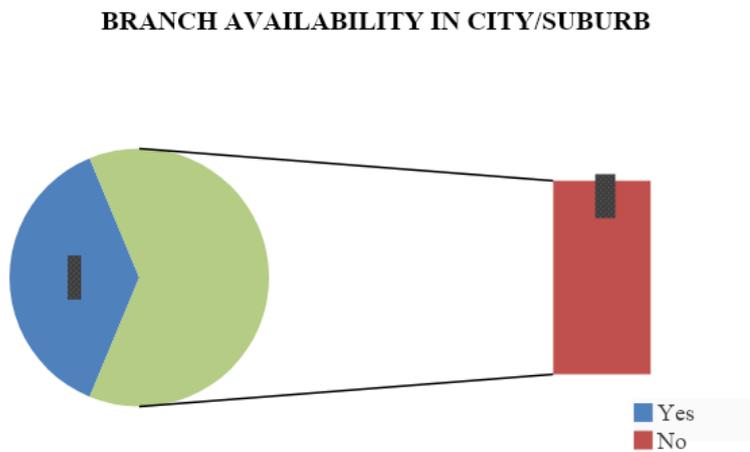
Demographics findings summary:

- 92% of the respondents were between the age of 25 and 40 years, which is representative of the Ugandan age distribution of the population.
- 95% of the employed respondents were largely from the 25–40 age group.
- 100% of the unemployed respondents were from the age group of under 25.
- 100% of the self-employed respondents were from the 25–40 age group.

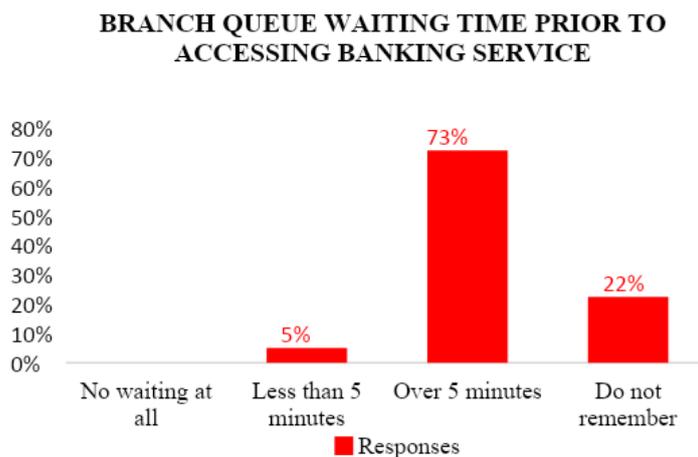
- 59% of the respondents were male compared to 41% who were female, which represents a gap in women’s access to financial services since the normal male to female ratio is 49% to 51% as representative of the Ugandan population.
- 64% of the male respondents were married.
- 60% of the female respondents were single.

**Banks’ quality of service delivery.**

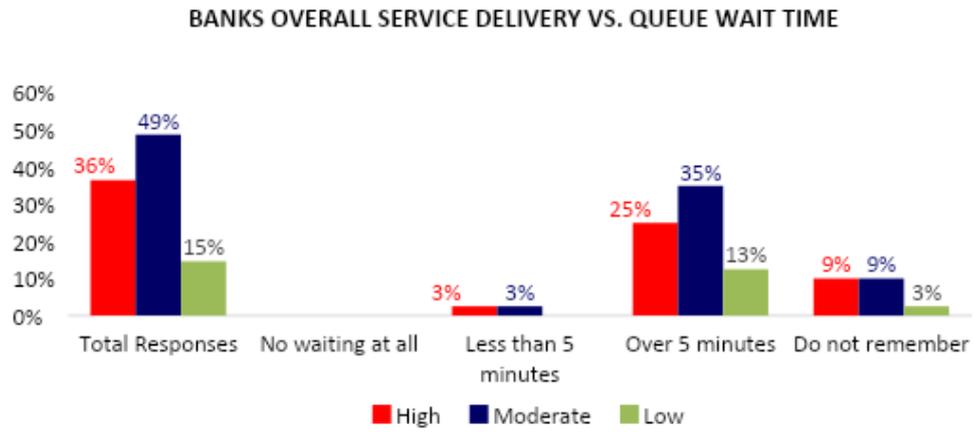
*Figure 41. Branch Availability in City/Suburb*



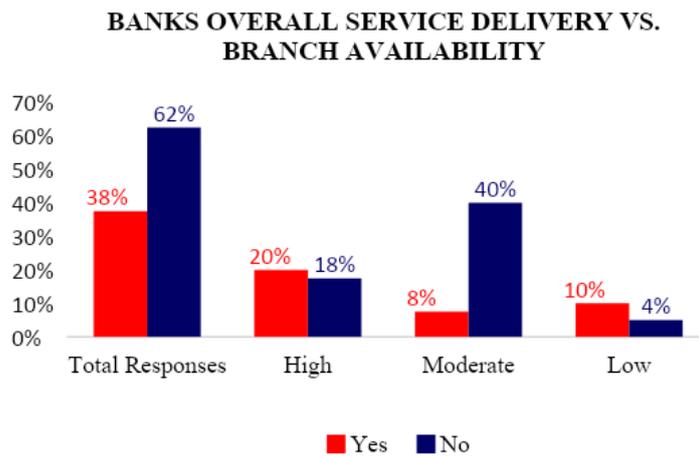
*Figure 42. Branch Queue Waiting Time Prior to Accessing Banking Service*



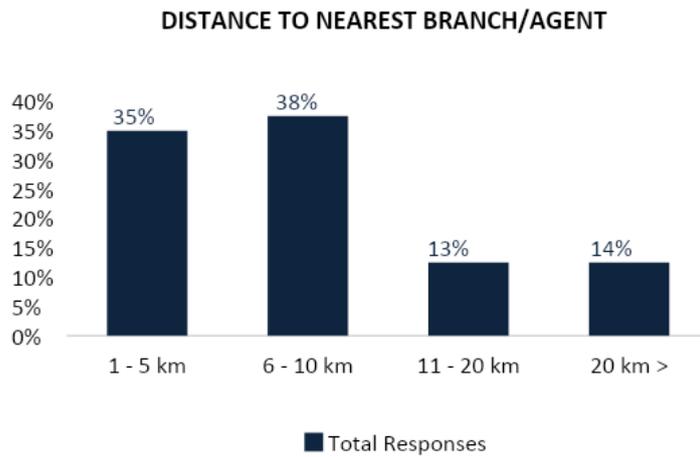
**Figure 43. Bank Overall Service Delivery vs Queue Wait Time**



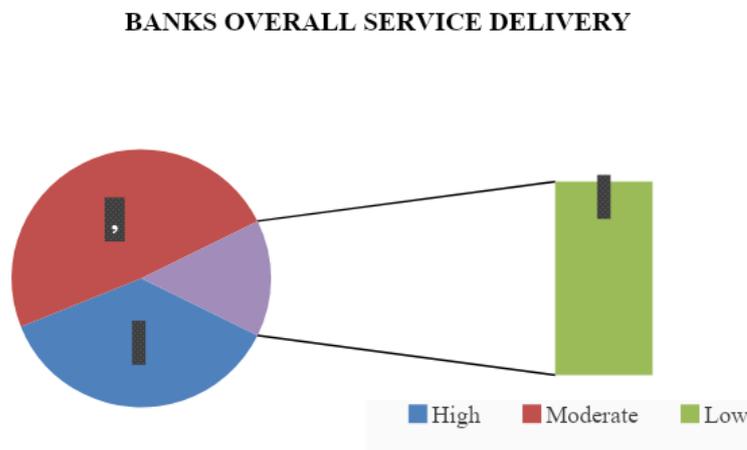
**Figure 44. Banks' Overall Service Delivery vs Branch Availability**



**Figure 45. Distance to Nearest Branch/Agent**



**Figure 46. Banks' Overall Service Delivery**

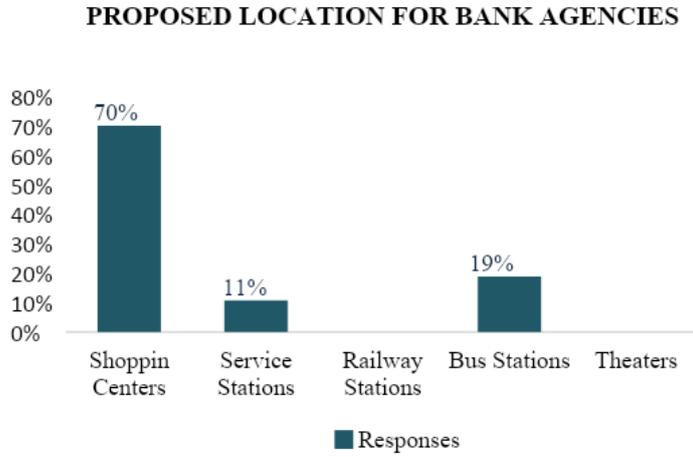


Banks' QoS delivery findings:

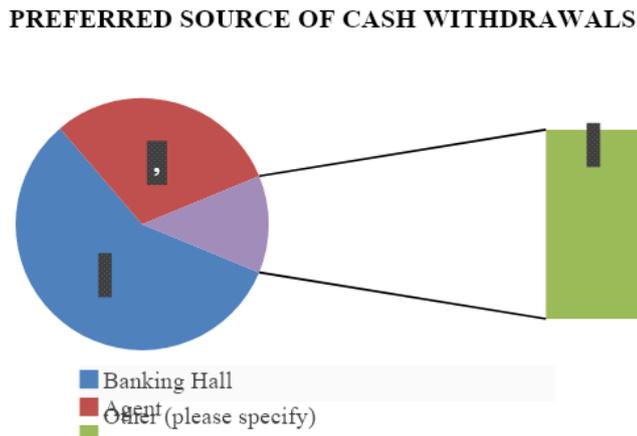
- 49% of the respondents believe the banks as providing a moderate overall service delivery, with 35% stating waiting in queue for over 5 minutes.
- Interestingly, though 36% of the respondents found the banks' overall service delivery as high, even if the majority of them waited for over 5 minutes in queue, which would suggest alternative digital channels would improve customer experience.
- Overall, 63% of the respondents felt the branch was readily available in the suburb, as 73% of the respondents stated the distance to the nearest branch as ranging from 1-10 km.

**Agent banking and third-party services.**

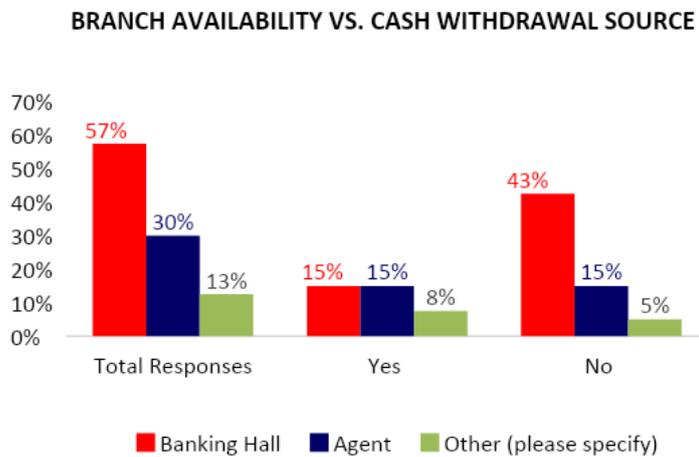
**Figure 47. Proposed Location for Bank Agencies**



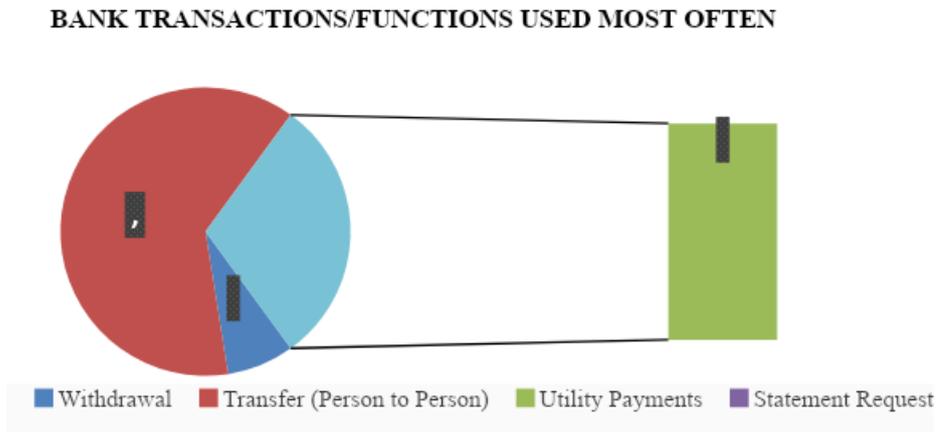
**Figure 48. Preferred Source of Cash Withdrawals**



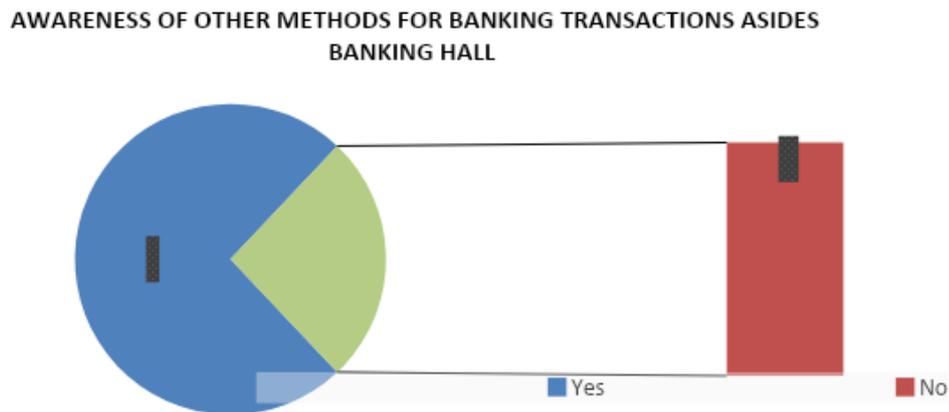
**Figure 49. Branch Availability vs Cash Withdrawal Source**



**Figure 50. Most Often Used Bank Transactions/Functions**



**Figure 51. Awareness of Other Methods for Banking Transactions**

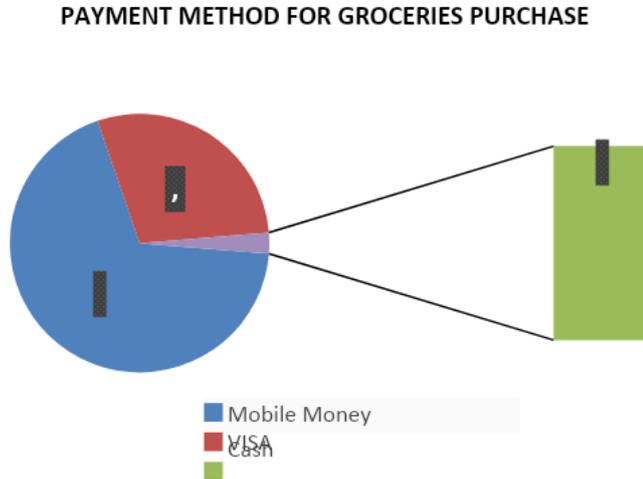


Findings summary for Figures 47 to 51:

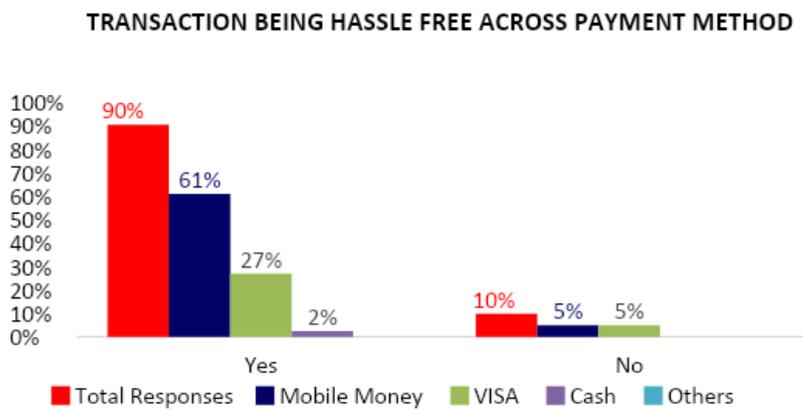
- 70% of the respondents proposed shopping centres as locations for bank agencies.
- 74% of the respondents were aware of other methods for banking transactions besides banking halls.
- 58% of the respondents preferred source of cash was banking halls.
- 74% of the respondents who preferred banking halls for cash withdrawals felt there were not enough branches/agents available in the city/suburb, which points to the need for digital channels awareness and promotion.

- 63% of the respondents' transactions were person-to-person transfers, while 30% were withdrawals.

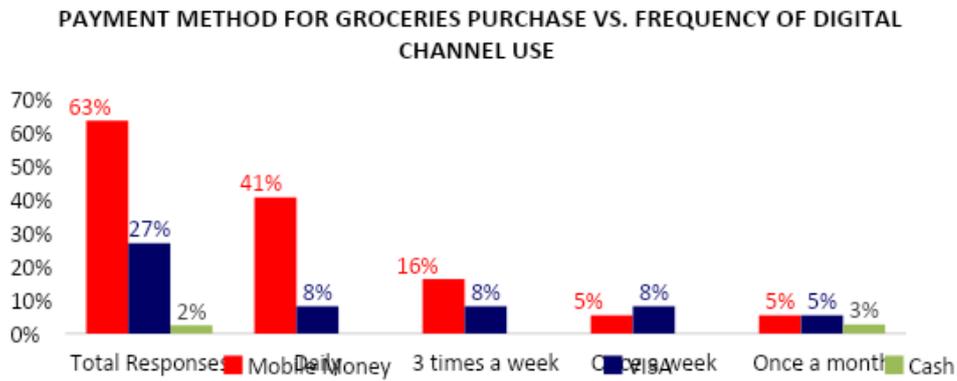
**Figure 52. Payment Method for Groceries Purchase**



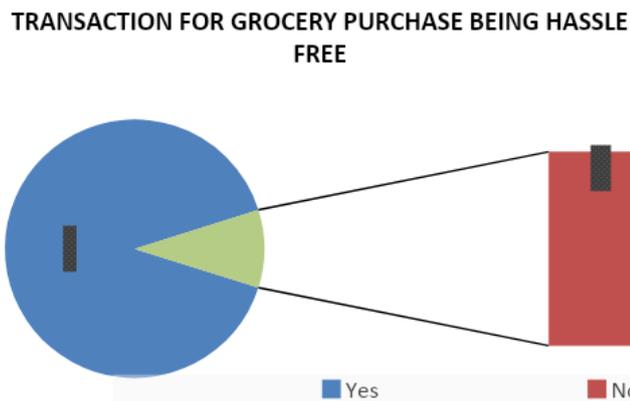
**Figure 53. Transaction Being Hassle Free Across Payment Method**



**Figure 54. Payment Method for Groceries vs Digital Channel Use**



**Figure 55. Transaction for Groceries Being a Hassle**



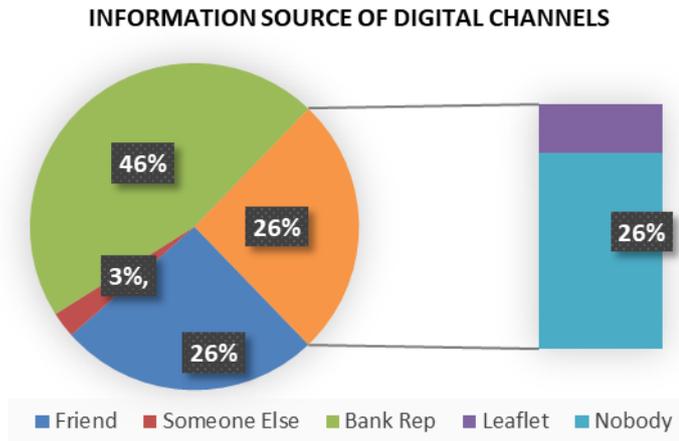
Findings summary for Figures 52 to 55:

- 68% of the respondents used MOMO as a payment method for groceries purchase.
- 90% of the respondents stated the transactions as being hassle free, of whom 61% and 27% used MOMO and VISA, respectively.
- 63% of the respondents used MOMO for groceries purchase, of whom 41% used the service daily for groceries purchase.

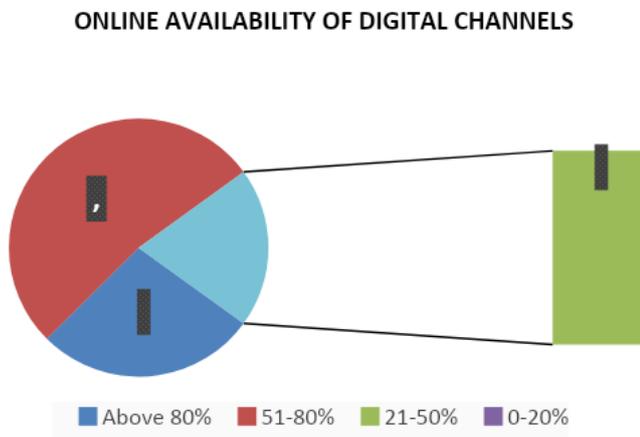
- 80% of the respondents are cashless users, already using a form of digital money service.

**Digital services.**

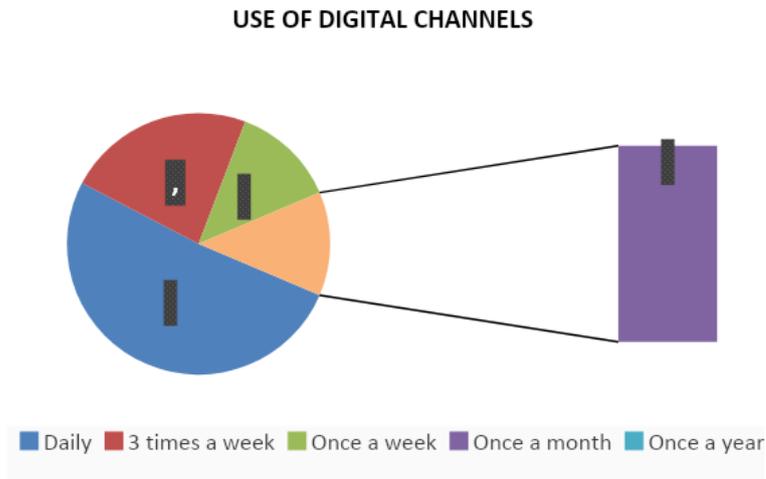
**Figure 56. Information Source of Digital Channels**



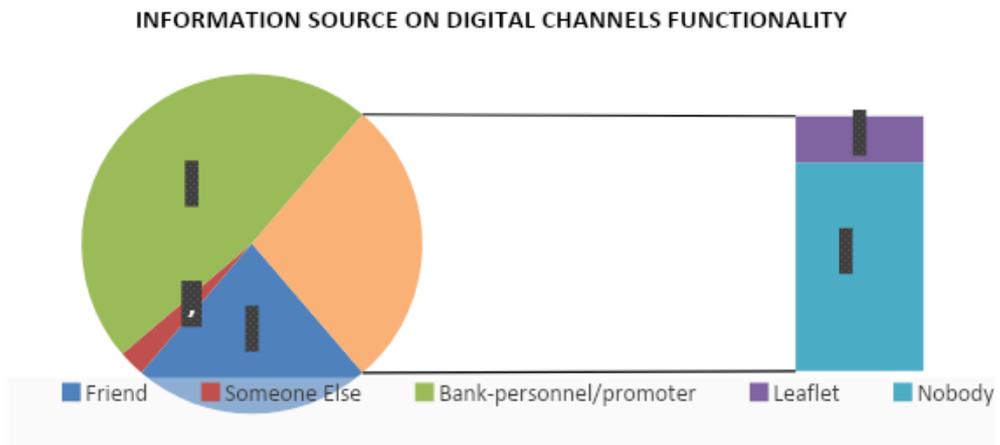
**Figure 57. Online Availability of Digital Channels**



**Figure 58. Use of Digital Channels**

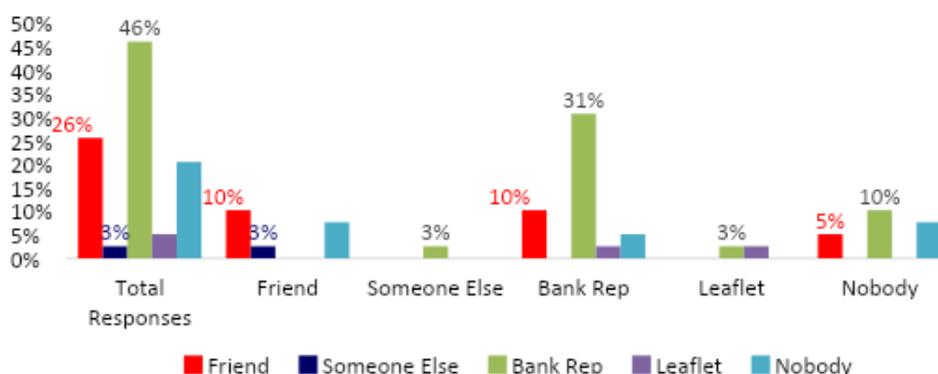


**Figure 59. Information Source on Digital Channels Functionality**



**Figure 60. Information Source vs Functionality Source of Digital Channels**

### INFORMATION SOURCE VS. FUNCTIONALITY SOURCE OF DIGITAL CHANNELS

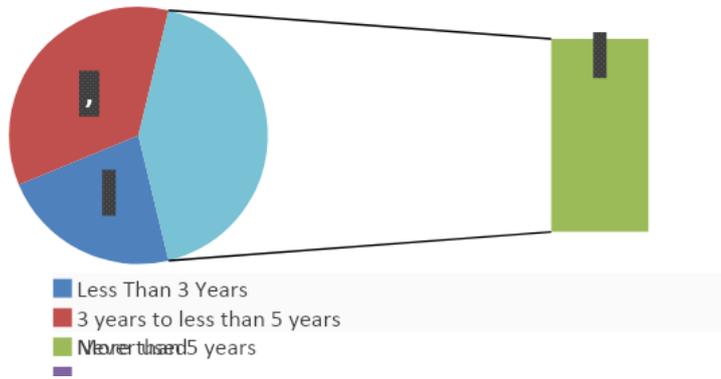


Findings summary for Figures 56 to 60:

- 46% of respondents stated bank representatives as the largest source of information of digital channels, while 26% stated friends as their source of information of digital channels.
- The above trend of bank representatives (48%) and friends (28%) being the main sources of functionality information on digital channels reigns true.
- 53% and 28% of the respondents stated online availability of the digital channels at 51-80% and above 80%, respectively.
- 51% of the respondents use the digital channels daily, while 23% use the same three times a week.

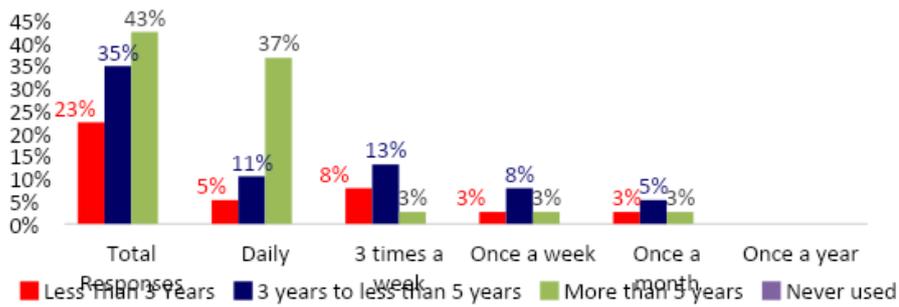
**Figure 61. Length in Years of Using Digital Channels**

**LENGTH IN YEARS OF USING DIGITAL CHANNELS**



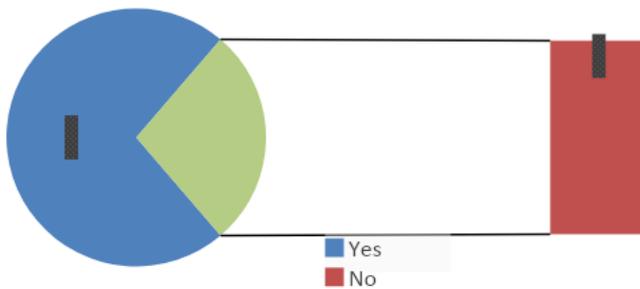
**Figure 62. Length in Years of Use vs Frequency of Use**

**LENGTH IN YEARS OF USE VS. FREQUENCY OF USE**

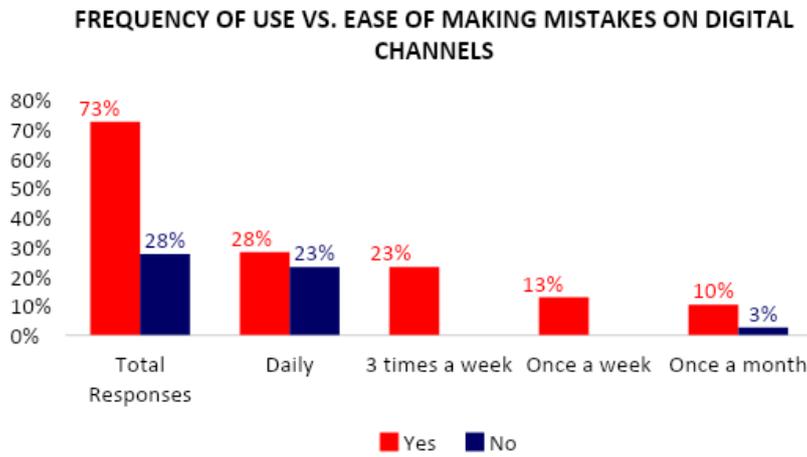


**Figure 63. Ease of Making Mistakes when using Digital Channels**

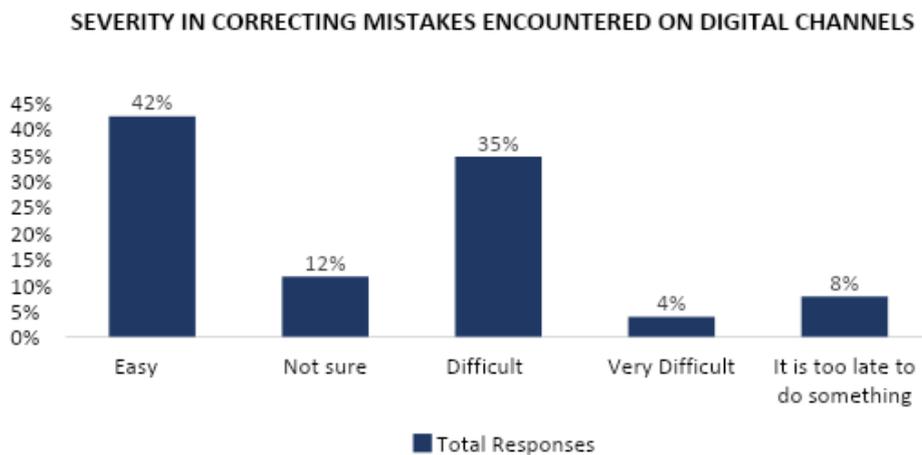
**EASE IN MAKING MISTAKES WHEN USING DIGITAL CHANNELS**



**Figure 64. Frequency of Use vs Ease of Making Mistakes on Digital Channels**



**Figure 65. Severity in Correcting Mistakes Encountered on Digital Channels**

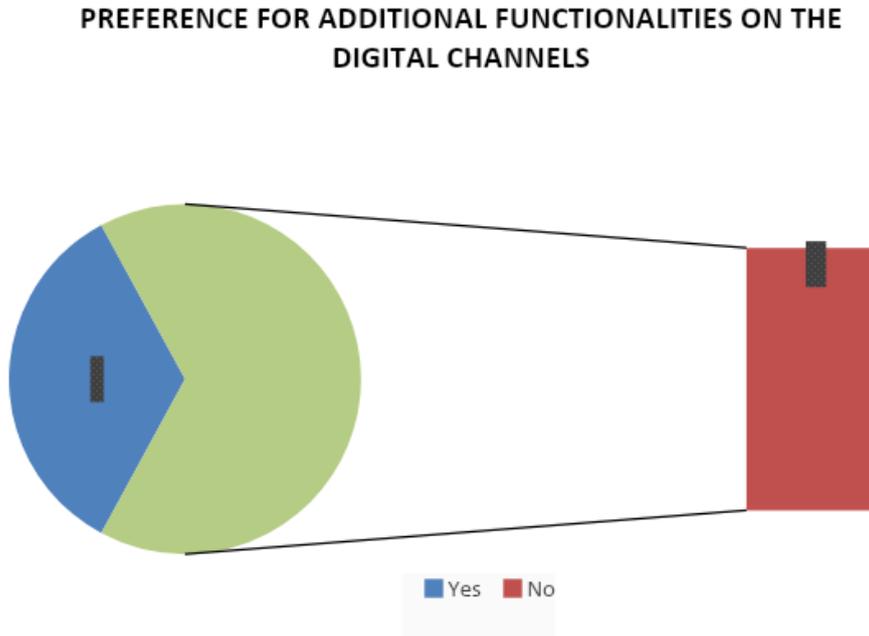


Findings summary for Figures 61 to 65:

- 43% and 22% of the respondents have been using the digital channels for 5 years and less than 3 years, respectively.
- There is a large 35% of the respondents who have never used digital channels, which is a big opportunity for the banks and MNOs.
- Justifiably, 73% of respondents stated there was ease in making mistakes when using the digital channels and 51% used the digital channels three times a week and more.

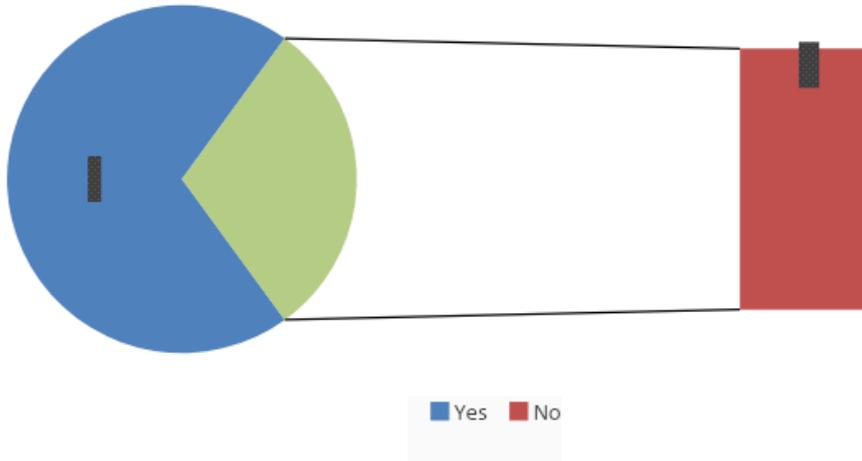
- 42% of the above respondents stated that although it is easy to make mistakes whilst using digital channels, it is also easy to correct the same mistakes.

**Figure 66. Preference for Additional Functionalities on Digital Channels**



**Figure 67. Customers Feel Money is Safe when Using Digital Channels**

## FEEL MONEY IS SAFE WHEN USING DIGITAL CHANNELS



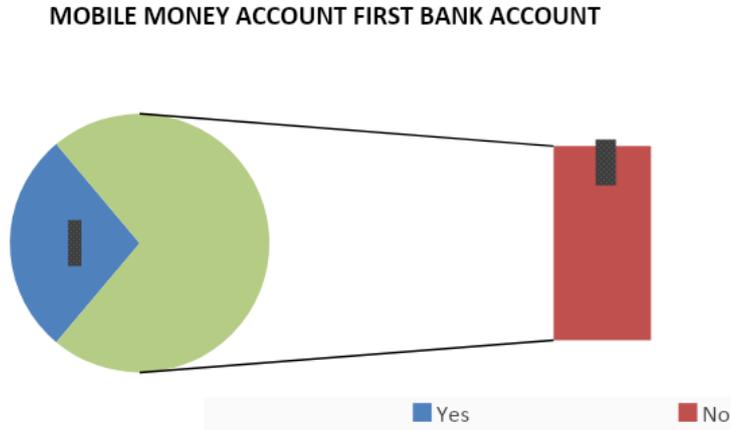
Findings summary for Figures 66 to 67:

- 66% of the respondents felt that additional functionalities on the digital channels were not required.
- The 34% who preferred additional functionalities on the digital channels listed these below:
  - NFC POS payments and WhatsApp digital payments integration,
  - Ease of use anywhere in the world to include online service additions for purchasing, international payments and transactions,
  - Ability to transfer money from bank to wallet and also process loan applications through mobile wallet,
  - Adding more utilities for payments and adding more online services,
  - Interoperable MOMO transactions — e.g., MTN MOMO and Airtel Money,
  - Transaction reversals and account history should be made available.

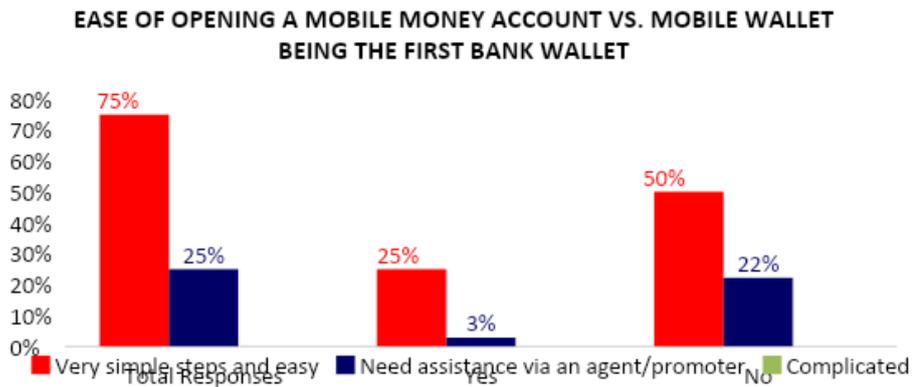
- 70% of the respondents felt their money was safe when using digital channels.

**Mobile money services.**

**Figure 68. MOMO as First Bank Account**

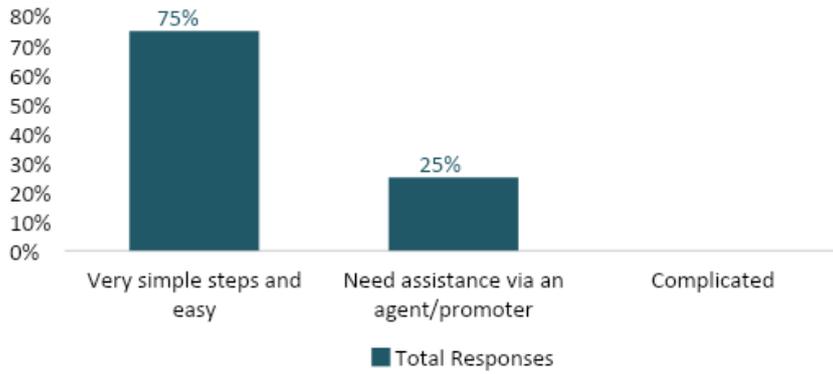


**Figure 69. Ease of Opening a Mobile Banking Account**



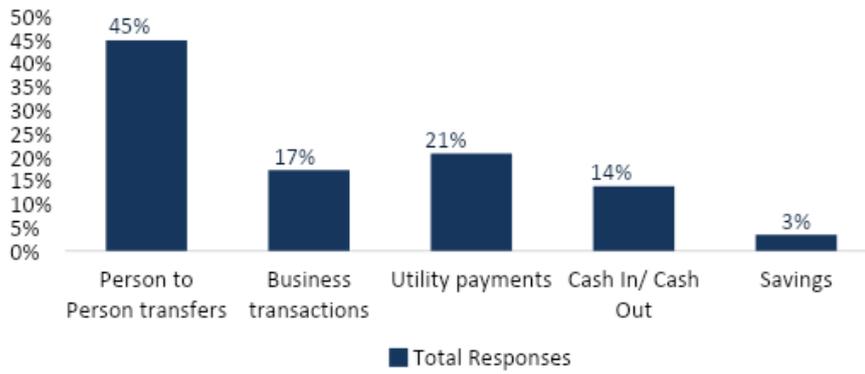
**Figure 70. Ease of Opening a MOMO Account**

**EASE OF OPENING A MOBILE MONEY ACCOUNT VS. BANK ACCOUNT**



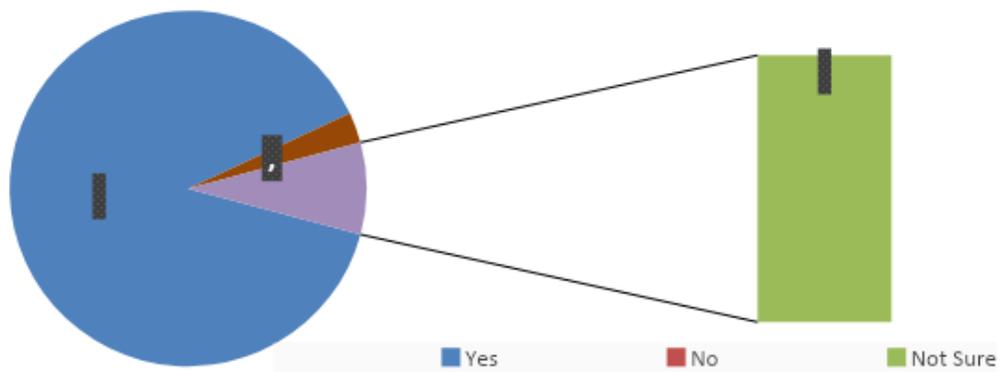
**Figure 71. Major Uses of MOMO Account**

**MAJOR USES OF MOBILE MONEY WALLET**



**Figure 72. Likelihood to Recommend MOMO to Community and Friends**

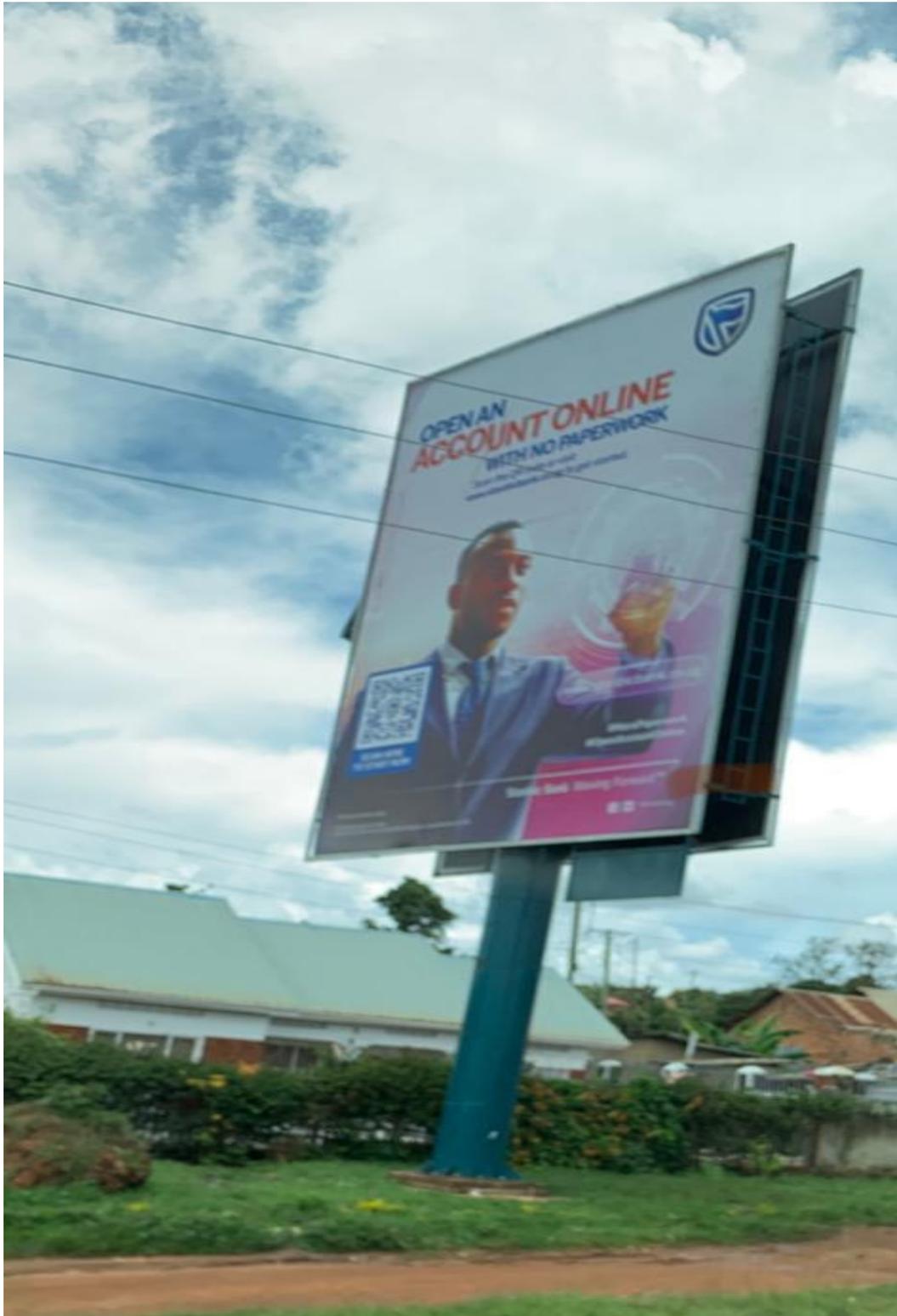
**LIKELIHOOD TO RECOMMEND MOBILE MONEY TO COMMUNITY/FRIENDS**



Findings summary for Figures 68 to 72:

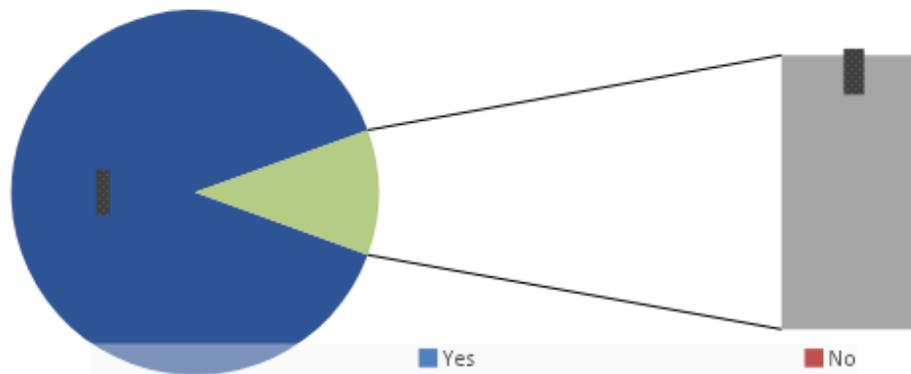
- Though 75% of the respondents stated opening a MOMO account as having very simple steps and being easy to open, 72% of the respondents stated a MOMO account was NOT their first bank account.
- 45% and 21% of the respondents use the MOMO wallet for person-to-person transfers and utility payments, respectively.
- The likelihood to recommend MOMO was at 89%.
- The above suggests that MOMO is convenient and banks missed an opportunity that has been embraced by MNOs as most of the customers are mobile telephony customers.
- However, other banks have risen to the occasion as they have simplified the access to financial services, as depicted by Figure 73, through digital channels and making the point that there is no paperwork required.

*Figure 73. Bank Promotion Message for Opening Account Online with No Paperwork*



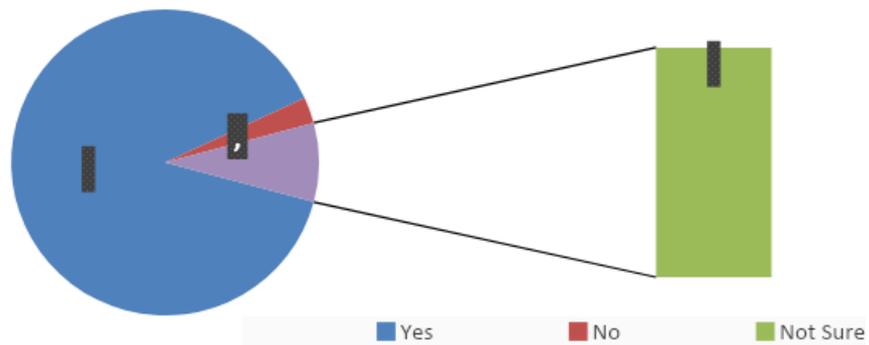
**Figure 74. Probability to Open a Bank Account in the absence of MOMO**

**PROBABILITY TO OPEN A BANK ACCOUNT IN THE ABSENCE OF MOBILE MONEY**



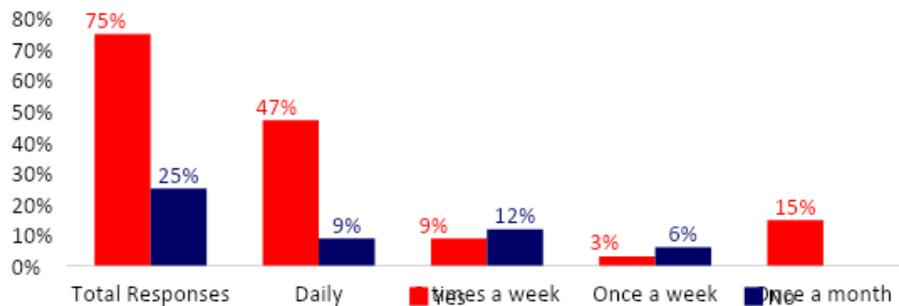
**Figure 75. Preference for MOMO vs Bank Digital Channels**

**PREFERENCE FOR MOBILE MONEY VS. BANK DIGITAL SERVICES**

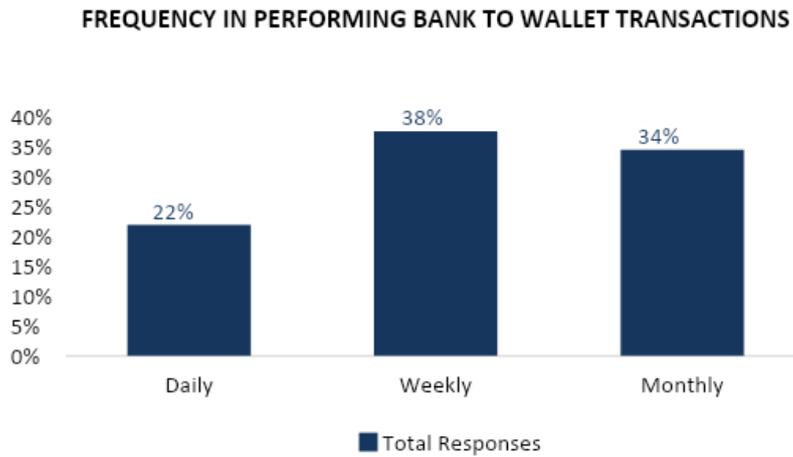


**Figure 76. Preference for MOMO vs Bank Digital Services and Frequency of Use**

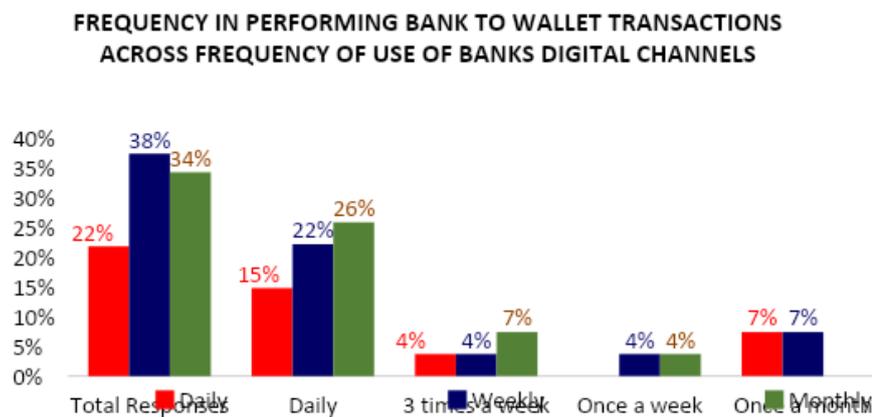
**PREFERENCE FOR MOBILE MONEY VS. BANK DIGITAL SERVICES -  
ACROSS FREQUENCY OF USE OF BANKS DIGITAL CHANNELS**



**Figure 77. Frequency in Performing Bank to Wallet Transactions**



**Figure 78. Frequency in Performing Bank to Wallet Transactions vs Frequency of Use of Banks’ Digital Channels**

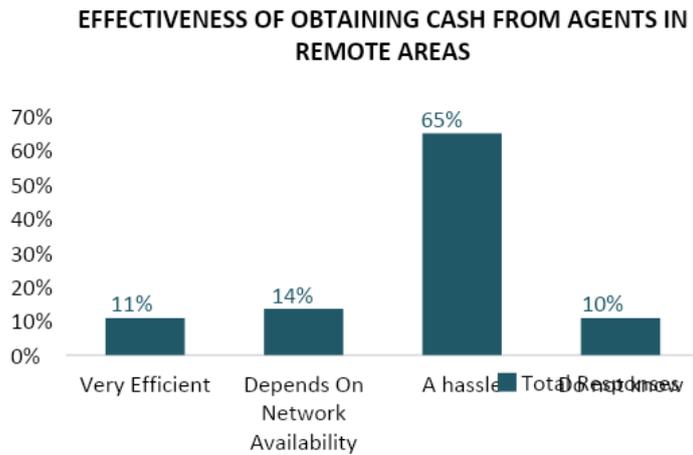


Findings summary for Figures 73 to 78:

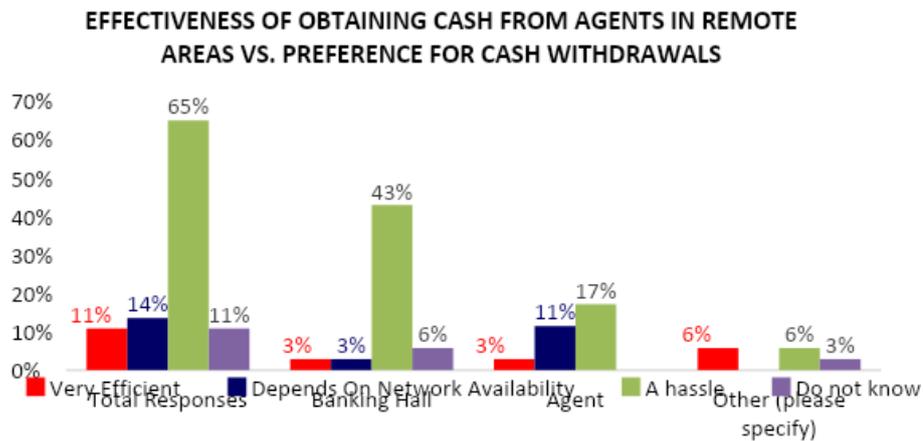
- The probability to open a bank account in the absence of MOMO was high at 89%.
- 89% of the respondents still preferred a MOMO service compared to the banks’ digital services.
- The above reigns true across 47% of the respondents who use banks’ digital services on a daily basis, and 15% of those who only use digital services once a month.

- 72% of the respondents performed bank to mobile wallet transactions at least once a month, with 36% carrying out weekly bank to wallet transactions.
- The prevalence of bank to wallet transactions suggests that banks and MNOs need to integrate and build a financial services ecosystem that focuses on collaboration and innovation of new products and services.

**Figure 79. Effectiveness of Obtaining Cash from Agents in Remote Areas**

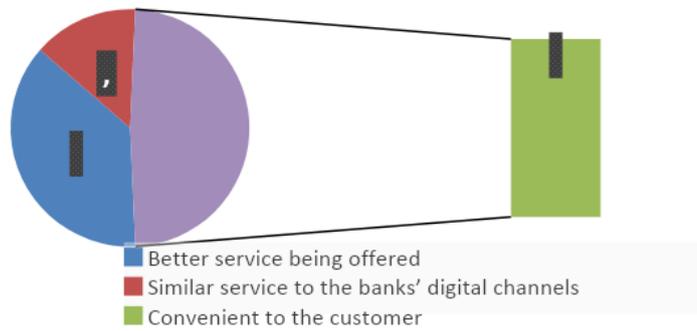


**Figure 80. Effectiveness of Obtaining Cash from Agents vs Preference for Cash Withdrawals**



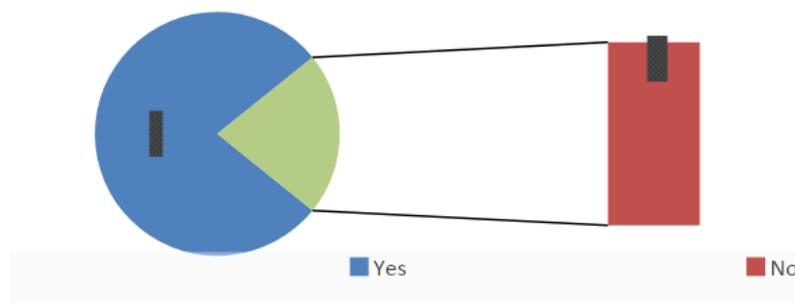
**Figure 81. MOMO Quality of Service in the Market**

**MOBILE MONEY QUALITY OF SERVICE IN THE MARKET**



**Figure 82. MOMO as a Perceived Threat to Retail Banking Services**

**MOBILE MONEY AS A PERCEIVED THREAT TO RETAIL BANKING SERVICE**



Findings summary for Figures 79 to 82:

- 65% of the respondents stated collection of cash from agents in remote areas as being a hassle, while 14% stated the effectiveness of the above also being dependent on network availability.
- 66% of the respondents who preferred using the banking hall for cash withdrawals largely highlighted obtaining cash from agents in remote areas as being a hassle; this suggests lack of agent capitalisation and float management.
- 49% of the respondents felt that MOMO QoS in terms of awareness and utilisation in the market was convenient to the customer, while 37% felt a better service was being offered.

- 78% of the respondents perceived MOMO as a threat to retail banking services.

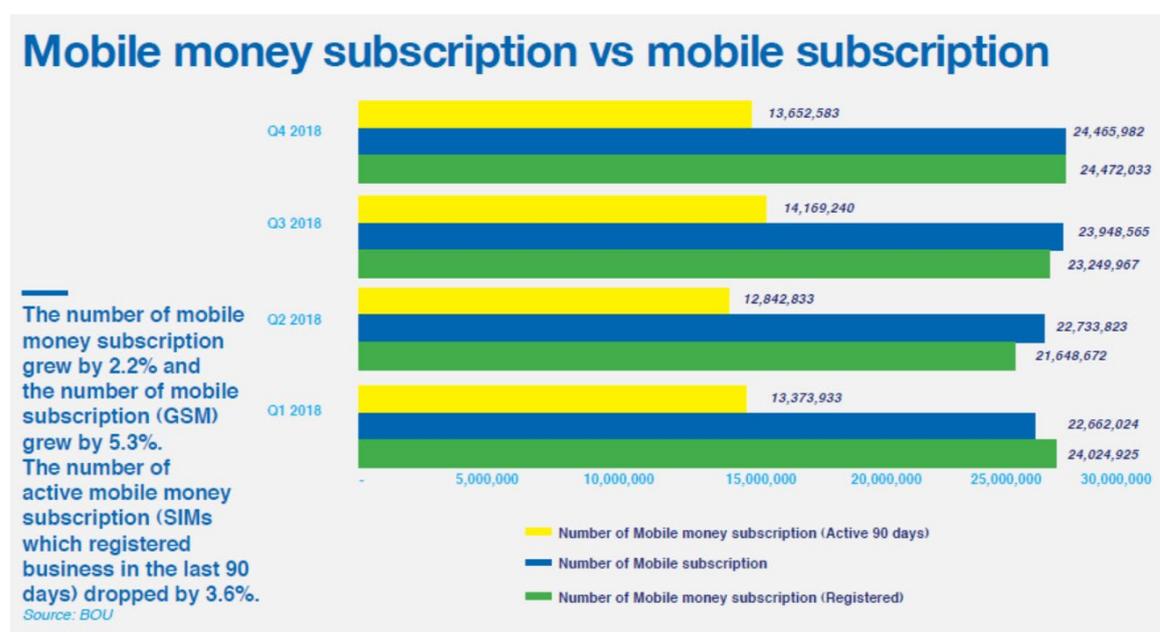
The research shows that digital delivery channels such as MOMO and mobile applications have become popular with consumers but that the diffusion process has to be improved, as indicated by the majority of respondents. Excellent technology does not guarantee that everything becomes better, and customer education on the use of digital channels can be a hindrance to frequent usage. However, it is quite evident that there is an opportunity for financial services penetration for both banks and MNOs that can offer access to potential revenue streams. Overall, respondents show a satisfactory service being offered by MOMO and agency banking but there is still room for improvement, and banks should involve their customers in educating them on the digital financial services to ensure when new technology offerings come up the adoption rate increases for tangible benefits to be realised.

### **Secondary Data Insights – Regulatory Bodies**

Secondary data was sought to augment the findings of this research and interviews were also carried out with the regulatory bodies, namely UCC and BOU.

There was a marked increase by end-2018 of MOMO subscriptions (accounts) to 24.5 million, which reflects that all mobile subscriptions have a respective MOMO account, as depicted by Figure 82. The MOMO penetration in terms of population above 15 years of age thus reflects greater than 75%, of which 56% of accounts are actively transacting accounts.

**Figure 83. MOMO Subscription vs Mobile Subscription**

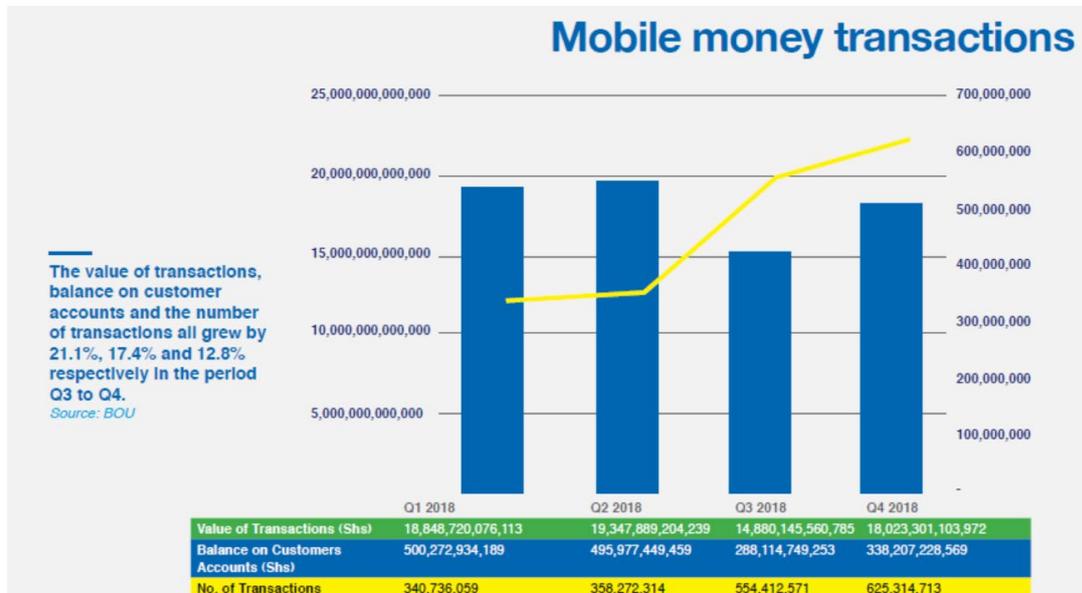


Source: UCC report (2018)

However, there was a notable drop in active accounts after the government introduced tax on MOMO transactions “of receiving, payments and withdrawals” valued at 1% of the value of these transactions (Excise Duty (Amendment) No. 1, 2018). This is further highlighted in Figure 83, which showcases that MOMO accounts balance dropped sharply from UGX495 billion (\$134 million) to UGX288 billion (\$78 million). The government reduced the tax rate to 0.5% (Excise Duty (Amendment) No. 2, 2018) after a lot of lobbying from the industry players and customers at large, which would only apply to cash withdrawals and the last quarter of 2018 (Q4), which translated to value of transactions, balance on customer accounts, and the numbers of transactions growing by 21.1%, 17.4% and 12.8%, respectively, for the period Q3–Q4 2018. It is quite evident that the level of balance on customer accounts and value of transactions have still not reached the same levels prior to the introduction of MOMO tax in Q1 and Q2 of 2018. It can be argued that regulations can influence a MOMO platform player’s ability to grow and maintain a customer base, build and sustain an agent network, develop critical capabilities and infrastructure, and offer products beyond basic payments.

The number of transactions increased dramatically during Q3 and Q4 due to the introduction of electronic airtime recharges via MOMO platforms and eliminated the physical voucher (paper-based airtime recharges) that are low value in nature.

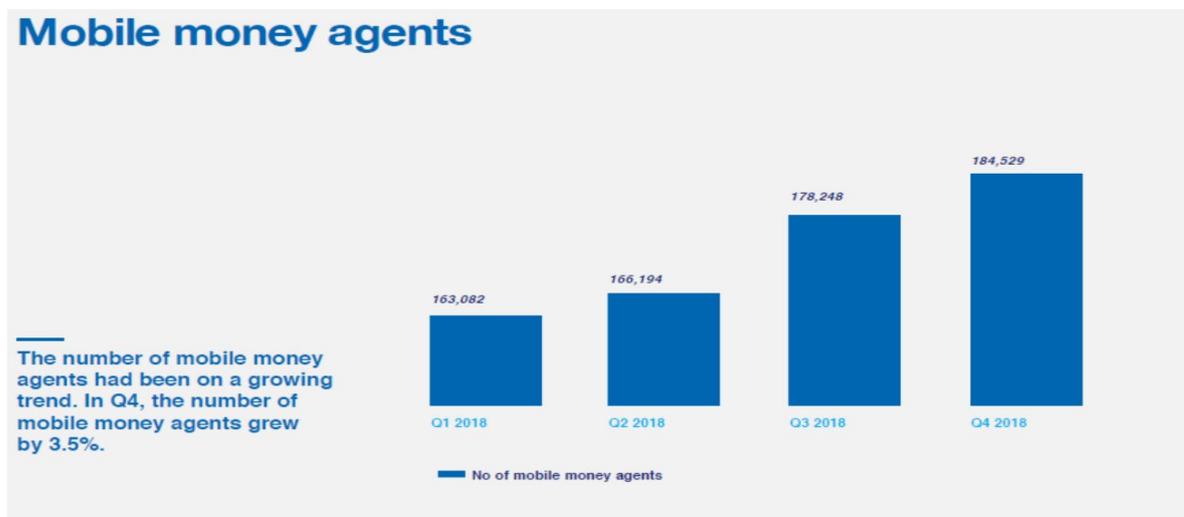
**Figure 84. MOMO Transactions**



Source: UCC report (2018)

The penetration of MOMO services and growth can also be viewed from an agent network growth perspective; Figure 84 portrays the growth picture of the MOMO ecosystem.

**Figure 85. Uganda MOMO Agents**



Source: UCC report (2018)

The MOMO agents as at end-2018 stood at 184,529, which is a double-digit growth of 13.2% from 163,082 at the beginning of the year. This is key since the agents are the primary point of contact for customers, and will be visited by customers much more than might be expected of a mobile service in order to perform functions such as cash-in / cash-out, and so represent the lynchpin of the service.

In comparison to Kenya, which is a global benchmark, the Central Bank of Kenya (2018) cited an increase of 10.3% in MOMO volumes and an increase of agents to 222,497 up from 202,627 (9.8%), and accounts have increased from 43.6 million to 54.8 million with number of transaction rising from 149.5 million to 151.8 million.

It can be argued that Uganda has been growing at a relatively faster pace in MOMO adoption and usage and the introduction of tax on transactions slowed down the growth.

The central bank (BOU) has been at the forefront of the financial inclusion drive, as evidenced by the National Financial Inclusion Strategy 2017-2022, which promulgates access and usage of appropriate financial services to ensure the realisation of inclusive and sustainable growth. The overall objective of the Strategy is to reduce financial exclusion to 5% by 2022.

The strategy is summarised into five objectives/pillars, namely: Reduce Financial Exclusion and Access Barriers to financial services; develop the credit infrastructure for growth; build out the digital infrastructure for efficiency; deepen and broaden formal savings, investment and insurance usage; and empower and protect individuals with enhanced financial capability (BOU, 2017). It is within this framework that the FINANCIAL INSTITUTIONS (AGENT BANKING) REGULATIONS, 2017 were established and the banking industry has gone further and cooperated to form the Agency Banking Company that is rolling out a shared distribution network throughout the country under the theme “Banking in your neighbourhood”. Agency banking has become a digital offering for several banks and a shared agent banking platform run by a special purpose vehicle between the Uganda Bankers Association (UBA) and Ecclectics

platform went live in Q2 2018. The Agent Banking project has established a countrywide interoperable agent network and agent banking platform that connects all UBA member banks across the country as a counter measure to MOMO operators. This project aims to increase access to financial service points countrywide and ensure that banking access is within a 5 km radius, and it's designed to help banks roll out affordable services to clients via a trained agent network, thus reducing the 'banking inequality' that exists in the country. The project aims at expanding the customer choice basket and increases competition between banks and fintech – MOMO operators, which not only increases competition in the market but also deepens the per capital financial service penetration.

However, the UBA acknowledges the substantial increase in fintech collaborations with banks; in any case, most of the agency banking connectivity is provided for by the MNOs and there is a growing symbiotic relationship.

The choice of an agent can be a petrol station, a supermarket, a permanent MOMO agent, a pharmacy, a retail shop or a hardware store that is fully licensed and has been in existence for one year, and the agent can perform the below services:

- Cash withdrawal
- Funds transfer
- Cash deposit
- Collection of documents.
- Bill payment.
- Balance inquiry
- Mini statement
- Loan application approval
- Account opening initiation

*Figure 86. Agency Banking in Uganda*













*Figure 87. MOMO Branch and Kiosk*





## Hypotheses Testing

To test the hypotheses stated at the beginning of this chapter, a set of respondents' answers were grouped from each questionnaire. The hypotheses set out at the beginning of this study are recapped below:

H<sub>1</sub>: Mobile payments platforms have taken a significant market share of banking transactions.

H<sub>2</sub>: Fintech companies are threatening the dominance of traditional players in retail banking.

H<sub>3</sub>: Mobile payment platforms have a potential to change banking practices in Uganda.

H<sub>4</sub>: Mobile payment platforms have increased financial inclusion in Uganda.

1. H<sub>1</sub>: Mobile payments platforms have taken a significant market share of banking transactions.
  - a. Increasing dissatisfaction with branch/service unavailability and poor service delivery in traditional/digital retail banks, i.e.:
    - 63% branch unavailability in suburbs,

- 75% long queue wait time of over 5 minutes,
  - 49% perceive the retail banks' overall service delivery as moderate to low.
- b. Increased awareness and frequency of use of MOMO/fintech banking services vs. traditional/digital retail banking services:
- 74% of the customers were aware of other methods of service transactions besides banking halls,
  - 75% of the customers found opening a MOMO bank account much simpler and easier to open as compared to a retail bank account.
- c. Overall service transaction use of MOMO/fintech banking services mirroring traditional/digital retail banking services:
- Major transactions in traditional retail banking services include: 63% person-to-person transfers, 30% utility payments, and 7% withdrawals,
  - Major MOMO service transactions include: 45% person-to-person transfers, 21% utility payments, and 17% business transactions,
  - 68% preferred MOMO for grocery purchases, of which 41% and 16% of the grocery transactions' frequency were daily and three times a week per user, respectively,
  - 61% of the customers who bought groceries using MOMO found the transaction to be hassle free.
- d. Preference for and likelihood to recommend MOMO/fintech banking services vs. traditional/digital retail banking services:
- 89% of all customers preferred MOMO services vs. their banks' digital services,

- 75% of the customers who have used retail banks' digital services - — 47% daily, 15% once a month, and 9% three times a week — prefer MOMO to retail banking digital services,
- Of the 75% of customers who preferred MOMO to digital banking services, 38% and 22% use the service weekly and daily, respectively,
- 88% of all customers were likely to recommend MOMO services to friends and community.

The results seem to suggest that there is growing dissatisfaction with customer service and service unavailability in retail banking sector, while there is increasing awareness and registration of MOMO wallet services. The increased use of MOMO wallet services largely mirrors the transactions of the retail banking services, whose simpler and easy use is resulting in increased frequency of use of MOMO wallet services for everyday transactions such as grocery, utility payments and other business transactions.

A higher percentage of customers find the use of MOMO for these everyday transactions to be simpler and hassle free, fuelling increased use and preference for the MOMO wallet services. There is a higher preference for MOMO wallet services across customers who are frequent users of retail digital banking services, who would still prefer to use and recommend the MOMO wallet services as compared to the traditional and digital retail banking services, resulting in MOMO wallets taking a significant share of the retail banking service transactions.

From the above, it seems that MOMO platforms have transformed the Ugandan market and accelerated financial innovation and reach of the financial services countrywide. Ugandan banks have had to review their portfolios and ensured a segmented approach; branches still serve a certain segment of the market that includes corporates, technology-led mobile applications, Internet banking services, millennials (technically savvy segment) and agency banking in the rest of the population.

2. H2: Fintech companies are threatening the dominance of traditional players in retail banking.

a. Ready availability/distribution, varied services and ease of use of general services on MOMO/fintech vs. traditional retail & agency banking:

- Ease of use of major services — 90% of grocery transactions were deemed hassle free, of which 61% were done through MOMO.

b. Overall effectiveness of MOMO banking services vis-à-vis retail banking services:

- 65% of the customers expressed cash collection from bank agencies as a hassle, with 14% stating networks dependability in remote areas as a challenge,
- 49% of the customers stated MOMO banking QoS as being convenient to the customer, while 37% stated better services are being offered,
- 78% of the customers perceived MOMO banking services as a threat to retail banking services.

The increased availability of MOMO wallet services and ease of use of service transactions is evidently fuelling customers' preference for MOMO wallet. A larger percentage of customers found MOMO more effectively convenient, of better-quality service, and more readily accessible than retail/digital/agency banking services. The MOMO wallet service is perceived by customers to offer better overall service delivery.

The UBA (2018) aptly pointed out that MOMO operators had provided a challenge to the banking industry but had welcomed the collaborative nature of the new entrants into the payment space. From the shared results of the study one can conclude that the MOMO platforms are facilitating closure of the industry's inefficient gaps that can only improve customer experience.

3. H3: Mobile payment platforms have a potential to change banking practices in Uganda.

a. Traditional retail banking services access/portfolio/digital change:

- 83% of the institutions sampled stated they would introduce agency banking services,
- 44% of the institutions sampled reported downsizing their distribution channels, especially across retail and commercial banks,
- Rationale for downsizing the distribution channels across the various institutions was 50% introduction of digital distribution services and 50% cost reduction — 63% of those institutions actually downsizing stated cost reduction as the biggest reason,
- 55% of the institutions sampled stated having an existing strategy to switch customers to digital channels.

A fair number of the traditional retail banking institutions reported downsizing their distribution channels, with the largest drivers being cost reduction and introduction of and replacement with digital banking services. A very high percentage of retail banks looked to the introduction of agency banking services as a distribution channel, with a fairly good sample size stating their strategy is to switch customers to digital channels for cost reduction and downsizing.

Given the above and the fundamental need to reduce the cost structure and improve efficiencies within the banking industry, it seems the advent of MOMO services in Uganda has prompted banks to regroup and formulate a special purpose vehicle, namely Agency Banking Company of Uganda, to ensure a new business model of agency banking that has been borne out of necessity to ensure banks were not outcompeted by the MNOs' distribution network.

#### 4. H4: Mobile payment platforms have increased financial inclusion in Uganda.

##### a. Ease of registration and broad transaction use:

- 75% of the customers found opening a MOMO bank account much simpler and easier to open as compared to a retail bank account,

- Major MOMO service transactions include: 45% person-to-person transfers, 21% utility payments, and 17% business transactions,
- 88% of the customers stated MOMO as having a positive impact on their livelihood,
- 89% of all customers preferred MOMO services vs. their banks' digital services,
- 75% of the customers who have used retail banks' digital services — 47% daily, 15% once a month, and 9% three times a week — preferred MOMO to retail banking digital services,
- Of the 75% of customers who preferred MOMO to digital banking services, 38% and 22% use the service weekly and daily, respectively,
- 88% of all customers were likely to recommend MOMO services to friends and community.

The availability and simplicity of opening a MOMO wallet vis-à-vis a traditional bank account has increased the accessibility of financial services to the population in Uganda. Major MOMO service transactions mirror those of the traditional and digital banking services, with customers having a higher preference for MOMO wallet services largely due to simplicity of the service, ease of access and ready availability. A large set of customers are frequently using, preferring and recommending the MOMO wallet service, which has resultantly increased financial inclusion in Uganda.

The results above seem to suggest that MOMO platforms have provided a platform for inclusiveness as the service is readily available throughout the country wherein the network operators serve. The fintech ecosystem has transformed the provision of financial services by being able to serve the once-financially-excluded populations, especially in the rural areas. Fintechs have used technology to simplify the financial services provision processes, especially the KYC process

that on many occasions has been a hindrance for the majority of the population to access financial services. Ugandan banks have reacted and risen to the challenge by adopting the agency banking model and digitilisation to reach the previous neglected segments, thereby accelerating financial inclusion. This is corroborated by the 2018 FinScope study that revealed that 8 out of 10 Ugandans are now financially included.

Given the above assessment, it is quite evident that compared to five years ago, the traditional banks or financial services providers are more open to partnerships and collaboration (within the banking fraternity and with fintech) and recognise the value the fintechs bring and the limitations they face internally. The positive willingness towards partnerships and collaboration is good for the customers as it offers a choice of financial services products at competitive rates and improved customer experience.

### **Summary**

This chapter presented the key findings of this study. The findings were organised according to the two questionnaires and seemed to suggest the following:

- IT is regarded as a critical success factor by banks, as revealed by the results, and the rationale for IT spending is to improve service delivery efficiencies and gain competitive advantage.
- Banks have identified new digital delivery channels such as mobile applications and mobile banking as the future and are downsizing their branch networks and are likely to switch customers to these channels, thereby lowering costs, and to differentiate their products, and this has been driven by the fintech competitive landscape.
- Banks are likely to strike strategic alliances with technology-based companies to improve turnaround time of delivering new technology-based products.

- Fintech platforms operated by MNOs have reached the mass market and banks have adopted similar distribution models, as evidenced by the agency banking model that has sprouted in all areas to aid financial inclusion.
- MOMO and digital wallets adoption seem to have driven the digitalisation of banks and adoption of a new distribution model of agency banking.

The review clearly showed how IT through digitalisation can be exploited by organisations, especially financial services, to achieve competitiveness as they grapple with the advent of fintech companies in the digital space and compete in a dynamic ecosystem. The next chapter will present conclusions and recommendations of the research study.

## **Chapter 5: Conclusion and Recommendations**

This study has sought to:

- explore and discover the effectiveness of fintech on banking digitalisation efforts in Uganda,
- determine how the banks have adopted digitalisation to combat the challenge of fintech (MNOs)-led MOMO platform offerings,
- explore customer adoption of digital financial services and impact on financial inclusion,
- determine the impact of the regulatory framework in facilitating the digitalisation and financial inclusion strategies.

This implied testing the four hypotheses as stated in Chapter 1, and from the results of this study it seems that fintech-led disruption through MOMO has been the catalyst to banks' digitisation efforts. The study's findings also suggest that banks are adopting new technologies to cater for new distribution models and collaboration amongst themselves through the agency banking model. Fintechs have created innovations like MOMO that have accelerated the uptake of digital financial services. It is quite evident that there is a continuous plan to broaden the product offering with constant focus on innovation. Banking customers have received quite well new digital delivery channels and services offered by fintechs/MNOs such as MOMO and banking delivery channels through agency banking and mobile applications. Conclusions can be drawn from the findings and trends in the IT and digitisation diffusion process can be applied to the banking sector in general.

### **Summary of Findings**

The financial sector is a typical example of an industry that has embraced technology for competitive reasons, as evidenced by the substantial investments. Ugandan banks see IT as a critical factor in creating a successful future and have positively responded to the challenge posed by MNOs' MOMO offerings through the adoption of omnichannel strategies and an agent banking

distribution model to match the MNO distribution network. The situation has largely been driven by intense competition for customers, reaching the underserved population and the drive to reduce costs in an industry with low profit margins. However, in Uganda where competition has been intensified, banks still manage to get away with large profit margins (as at 30 June 2019, deposit rates were between 3% and 8% for current accounts compared to overdraft lending rates of 12–20%).

Digital banking is still in its infancy in Uganda, but it is gaining traction and targeted at reducing bank and customer costs, improving service levels, and attracting and retaining customers. Other revenue streams are being opened up through the recently launched strategic alliances between banks and MOMO operators through bank to wallet or wallet to bank transactions. Almost all banks have embarked on massive upgrade programmes in their IT departments and are now reviewing the channels through which they provide their financial services. This is mainly carried out in pursuit of an improved return on equity, maintaining margins, reducing the cost base and developing a pro-customer approach.

Most commercial banks have partnered with telecoms and MNOs to provide competing MOMO products, which has spawned a diverse ecosystem of complementary products and services, such as digital bill payment and ATM accessibility via unstructured supplementary service data mobile channel and mobile applications.

Ugandan banks are now finding that consumer demand is driving the banking process as consumers decide their own needs. This explains why new entrants are making inroads on the established institutions' market base as they quickly respond to consumer demands, and this process will determine the future success of many banks. To keep up with the changing demands and expectations in the banking industry, financial institutions must constantly develop and reassess their strategies and approaches.

Although many banks offer reasonably comprehensive digital platforms and services, there is still plenty of room for additional offerings and improvement in the Ugandan banking industry. Technology is at the centre of every aspect of the business, but unless it is effectively applied it will remain simply a large-cost item and will not fulfil its potential as a competitive advantage.

### **Recommendations**

The recommendations made in this section of the study are linked to the study objectives. They emphasise those potential areas from the study that require further probing by financial services players in Uganda.

**Strategic alliances and growing ecosystems.** Banks in Uganda have fostered strategic alliances with one another to enhance service delivery to their customers; a case in point is the Agency Banking Company facility that through a shared interoperable technology platform and agent network management framework can harness the benefits that accrue from collaboration. The approach is meant to enable all agents to provide agent banking services to customers of all banks/any bank as the individual banking institutions continue to drive the recruitment of customers and marketing of their own products and services. Through this shared platform, banks will use agent banking services to foster financial inclusion and deepen the financial infrastructure; financing lower levels of the economy helps families of any social and economic status to create wealth. The gap between retail banks and MOMO providers has become thinner as MNOs and banks continue harmonising service provision to offer seamless customer experience. The partnerships between MNOs and the banking industry has been growing as the sectors seek to exploit the synergies to grow revenues.

Other strategic linkages that have to be forged would be with technology companies to cover the remote/rural areas with network coverage and provide a platform for the digital ecosystem to flourish and propel government-to-consumer, consumer-to-government, business-to-government and person-to-person payments. Loans and savings products can be an area of key

strategic alliance between fintech MNOs and financial institutions, especially for a country like Uganda that is mainly an agri-based economy.

**One-stop banking.** The retail banking business has transitioned sharply in the past decade from a brick and mortar business, characterising the physical channels mode of service delivery to multiple digital platform channels of service delivery through Internet banking, banking through social media, chat rooms, call centres, banking by conferencing and mobile applications. This is consistent with the position of BCG (2013) that reported that retail banking practices would materially alter by the next decade, and the envisaged trend is manifesting already in significant changes in multiple channels distribution modes.

Therefore, leading banks of the future, according to Dong and Bliemel (2008), are those that integrate their service delivery platforms and processes to an integrated whole that assures effective service delivery to customers across channels in a non-disruptive manner that enhances customer satisfaction. The Ugandan perspective from this study has illustrated that besides the digital platforms, agency banking has been incorporated as a distribution model to reach the underserved and still enjoy banking services that other segments of the population have become accustomed to. Banks are devising methods to be one-stop shops to cater for day-to-day transactions and other over-the-counter transactions for payment of utility companies and integrations into the MOMO ecosystem.

The argument for less-developed countries is that the scarcity of infrastructure has accelerated the migration of the underserved population to the mobile-based banking ecosystem that is well served by the MNO MOMO platforms. The BCG (2013) reported that distribution cost accounts for over 50% of the retail banking cost profile, thus requiring the bank to fast-track the integration of its service platforms and processes that incorporates technology more into its delivery methodology. This will reduce its distribution cost by the migration to potentially cheaper

distribution channels that integrate its strategic resources and customers' needs, and which are also popular channels for millennials.

**Regulatory environment.** A regulatory framework tailored to the specific characteristics of providing digital financial services is one of the key determinants of success in any given market. Regulation can accelerate or hinder MOMO ecosystem growth, as evidenced by the increase in transactions tax in Uganda; hence, it is prudent for regulators to drive the agenda for financial innovation and support the players of this growing ecosystem. The BOU has set a framework for MOMO to be an engine for financial inclusion and encouraged the government of Uganda to come up with the National Payment Systems Bill to cater for MOMO operators and related ancillary fintech companies to operate within the guiding framework.

**Digital financial services and financial inclusion.** Banks in Uganda have been relatively slow in terms of adoption of digital technologies as they were playing catch-up to the MNO digital financial services products and services. It is quite evident that banks were not too keen to venture into the bottom of the pyramid segment of the population. It seems from the results of this study that banks have revised the strategy and are moving quickly to establish presence in all corners of the country. There are opportunities to offer products and services to the large untouched markets and tap into potential revenue streams. Digital financial services have the ability to reach the once-financially-excluded through such products as mobile payments and transfers, bill payments and loan provisions, among others. Quite a number of banks are massively investing in developing new capabilities in digital and omnichannel interfaces and also building analytical capabilities, to upgrade and use technology to deliver better customer experience.

**Security.** Digital financial services have a key role to drive the economy; however, there are areas of security that should be communicated to all the customers. It is prudent that the players and regulators invest in education programmes as there are inherent risks that have to be managed, especially considering that the services are reaching the low end of the population. Widescale

population awareness programmes have to be initiated and other media such as local radio programmes to educate the customers. There is also the risk of MOMO being associated with money laundering and financing of terrorism if not correctly regulated due to the relaxation of the KYC requirements.

### **Directions for Future Research**

The focus of this study has been to assess the effectiveness of fintech (MOMO-led digital financial services) on banking digitilisation efforts in Uganda. The study also suggested that IT is a critical component of the business strategy process and can be aligned to gain competitive advantage, and that fintech has played a role in accelerating financial inclusion. Based on the research findings, two areas of future studies have been identified.

**The role of fintech in Africa's digital economy.** In pursuing this study, one would be investigating the relationship between fintech-led innovations in socioeconomic development, for example in agri-business value chains, and as an enabler of the other sectors of the economy.

**Cryptocurrency adoption in sub-Saharan Africa.** This study would investigate the future of a digital ecosystem in the African landscape and whether cryptocurrencies are the future of money, as well as investigate the main drivers and adoption with respect to the regulatory framework.

### **Conclusion**

The MOMO service was initially premised as a retention platform for MNOs' customers but has blossomed into a full financial services platform that offers, among other products and services, money transfer services, payment solutions, savings options, credit provision, international money transfers, and virtual credit cards for Internet payments through partnerships with MasterCard and Visa.

Fintech and digitilisation are the factors that sharpen the cutting edge in the increasingly competitive banking and financial services industry. Digital financial services permeate every

aspect of the industry, from the interface between providers and their markets to administration and cross-border remittance transactions.

The trend towards customer experience and efforts to mount highly targeted marketing efforts will determine whether payoffs from digital financial investments can be realised. Intelligence not transaction processing is the business that banks are in today, it is the banks with the greatest intelligence and that have the ability to deliver this knowledge to their customers and employees that will achieve competitive advantage. The fintech ecosystem continues to transform the provision of financial services across the globe, and in Uganda it is evident that MOMO platforms have been able to serve the once-financially-excluded population, especially in the rural communities, and established financial institutions have joined the bandwagon through agency banking.

## References

- ABC. (2018). *What is the shared agent banking system?* Retrieved from <https://agentbanking.co.ug/2018/09/17/what-is-the-shared-agent-banking-system/>
- Accenture. (2016). *Fintech and evolving landscape: Landing points for the industry*. Retrieved from [http://www.fintechinnovationlablondon.co.uk/pdf/Fintech\\_Evolving\\_Landscape\\_2016.pdf](http://www.fintechinnovationlablondon.co.uk/pdf/Fintech_Evolving_Landscape_2016.pdf)
- Airtel. (2015). *The Economic Times*. *Airtel ties up with Kotak Mahindra to apply for Payments Bank license*. Retrieved from <https://economictimes.indiatimes.com/industry/banking/finance/banking/airtel-ties-up-with-kotak-mahindra-to-apply-for-payments-bank-license/articleshow/46055760.cms>
- Alior Bank. (2013). *Conclusion of an Agreement with T-Mobile Polska Spółka Akcyjna with its registered office in Warsaw*. Report number 49/2013, 12 December. Retrieved from <file:///C:/Users/User/Downloads/Current-report-49-2013.pdf>
- Alleman, J. H., & Rappoport, P. (2010). Mobile money: Implications for emerging markets. *Communications & Strategies*, 79, 15-28. Available at: <https://ssrn.com/abstract=1810585>
- American Bankers Association. (2014). *The business of banking – What every policy maker needs to know*. Retrieved from <https://www.aba.com/Tools/Economic/Documents/Businessofbanking.pdf>
- Ammar, S., Moore, D., Wright, R. (2008). Analyzing customer satisfaction surveys using a fuzzy rule-based decision support system: Enhancing customer relationship management. *Journal of Database Marketing & Customer Strategy Management*, 15, 91-105. doi:10.1057/dbm.2008.2
- Anand, D., & Mantrala, M. (2019) Responding to disruptive business model innovations: The case of traditional banks facing fintech entrants. *Journal of Banking and Financial Technology*, 3, 19-31. Retrieved from <https://doi.org/10.1007/s42786-018-00004-4>
- Arner, D. W., Barberis J. N., & Buckley R. P. (2015). *The evolution of fintech: A new post-crisis paradigm?* (Research Paper No. 47). University of Hong Kong. Faculty of Law in Toufaily E & Zalan T (2017). *The Promise of Fintech in Emerging Markets: Not as Disruptive* (Contemporary Economics, 11(4)).
- Ashill, N., Casagrande, L., & Stevens, P. (2019). *Creating competitive advantage using the Internet. Evidence from New Zealand primary sector industries*. Retrieved from [https://www.researchgate.net/publication/228635432\\_Creating\\_Competitive\\_Advantage\\_using\\_the\\_Internet\\_Evidence\\_from\\_New\\_Zealand\\_Primary\\_Sector\\_Industries](https://www.researchgate.net/publication/228635432_Creating_Competitive_Advantage_using_the_Internet_Evidence_from_New_Zealand_Primary_Sector_Industries)
- Babbie, E. R. (2004). *The practice of social research*. Belmont, CA: Thomson/Wadsworth.
- Bank for International Settlements. (1993). *How will information technology reshape market developments*. BIS Quarterly Review, March. Retrieved from [https://www.bis.org/publ/qtrpdf/r\\_qt1403.pdf](https://www.bis.org/publ/qtrpdf/r_qt1403.pdf)
- Bank for International Settlements. (2014). *International banking and financial market developments*. BIS Quarterly Review, March. Retrieved from [https://www.bis.org/publ/qtrpdf/r\\_qt1403.pdf](https://www.bis.org/publ/qtrpdf/r_qt1403.pdf)
- Bank of Uganda Act. (2000). *Chapter 51*. Retrieved from [https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/acts/other\\_acts\\_regulations/BoUAct2000.pdf](https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/acts/other_acts_regulations/BoUAct2000.pdf)
- Bank of Uganda. [BOU]. (2014). *Financial stability report*. Retrieved from [https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/FinancialStability/financial\\_stability/Rpts/All/BOU-Financial-Stability-Report-June-2014.pdf](https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/FinancialStability/financial_stability/Rpts/All/BOU-Financial-Stability-Report-June-2014.pdf)

- Bank of Uganda. (2017). *Annual Report, 30 June 2017*. Retrieved from [https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/publications/Annual\\_Reports/All/Annual-Report-2016-2017.pdf](https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/publications/Annual_Reports/All/Annual-Report-2016-2017.pdf)
- Bell, J., & Waters, S. (2014). *Doing your research project: A guide for first-time researchers* (6th ed.). Berkshire, UK. McGraw Hill. ISBN-13:978-0-335-26446-9
- Benjamin, R. I., & Wigand, R. T. (1995a). Electronic markets and virtual value chains on the information superhighway. *Sloan Management Review*, 36(2), 62-72.
- Benjamin, R. I., & Wigand, R. T. (1995b). Electronic commerce: Effects on electronic markets. *Journal of Computer Mediated Communication*, 1(3). Retrieved from <http://shum.cc.huji.ac.il/jcmc/vol1/issue3/wigand.html>
- Cronin, M. J. (1993). *Doing business on the Internet: How the electronic highway is transforming American companies*. New York, NY: Van Nostrand Reinhold.
- Bhavhani, A., Chiu, R. W., Janakiram, S., & Silarszky, P.(2008). The role of mobile phones in sustainable rural poverty reduction. ICT Policy Division, Global Information and Communication Department (CGICT).
- Blechar, J, Constantiou, I, & Damsgaard, J. (2004). *Seeking answers to the advanced mobile services paradox: Minimal acceptance and use despite accessibility*. Oslo, Norway: University of Oslo; Copenhagen, Denmark: Copenhagen Business School.
- Bloch, M., Pigneur, Y., & Segev, A. (2005). *On the road of electronic commerce -- A business value framework, gaining competitive advantage and some research issues*. Paris, France: Université de Lausanne, Ecole des Hautes Etudes Commerciales/Institut L'Informatique et Organisation.
- Boston Consulting Group [BCG]. (2013). Operational excellence in retail banking 2014 no compromise: Advocating for customers, insisting on efficiency. Retrieved from [https://www.bcgperspectives.com/content/articles/financial\\_institutions\\_information\\_technology\\_performance\\_operational\\_excellence\\_retail\\_banking\\_2014\\_no\\_compromise](https://www.bcgperspectives.com/content/articles/financial_institutions_information_technology_performance_operational_excellence_retail_banking_2014_no_compromise)
- Business Daily. (2016). *Treasury report reveals fears over M-Pesa's critical role in Economy*. Retrieved from <https://www.businessdailyafrica.com/markets/Treasury-report-reveals-fears-on-M-Pesa-critical-role-in-economy/539552-3469802-2v2gjc/index.html>
- CAJ News. (n.d.). *FNB first bank to launch own mobile services*. Retrieved from <http://cajnewsafrica.com/2015/06/04/fnb-first-bank-to-launch-own-mobile-services/>
- CapGemini. (2016). *World retail banking report*. Retrieved from <https://worldretailbankingreport.com/resources/world-retail-banking-report-2016/>
- CapGemini. (2017). *World fintech report*. Retrieved from [https://www.se.capgemini-consulting.com/sites/default/files/world\\_fintech\\_report\\_wftr\\_2017\\_final\\_web.pdf](https://www.se.capgemini-consulting.com/sites/default/files/world_fintech_report_wftr_2017_final_web.pdf)
- CGAP. (2013). The power of social networks to drive mobile money adoption, Chains on the Information Superhighway. *Sloan Management Review*, 36(2), 62-72.
- CGAP. (2015). *The mobile economy*. Retrieved from [https://www.gsma.com/mobileeconomy/archive/GSMA\\_ME\\_2015.pdf](https://www.gsma.com/mobileeconomy/archive/GSMA_ME_2015.pdf)
- CIA World Factbook. (2016). *The world factbook*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/ug.html>
- CIO. (2016). *Half of banking customers now using fintech*. Retrieved from <https://www.cio.com/article/3140600/half-of-banking-customers-now-using-fintech.html>
- CitiResearch. (2016). *The bank of the future*. Retrieved from <https://www.citigroup.com/commercialbank/insights/assets/docs/2018/The-Bank-of-the-Future/46/>
- CitiResearch. (2016). *Digital disruption - How fintech is forcing banking to a tipping point*. Retrieved from <https://www.citivelocity.com/citigps/digital-disruption/>
- Chakraborty, S., & Kamath, R. (2015). *Bharti teams up with Kotak for payment bank*. Business Standard, 30 January. Retrieved from <https://www.business->

- standard.com/article/companies/amsl-a-subsiary-of-bharti-airtel-to-apply-for-payments-bank-license-115012900980\_1.html
- Chibba, M. (2009). Financial inclusion, poverty reduction and the millennium development goals. *European Journal of Development Research*, 21(2), 213-230.
- China Banking News. (2019). *Tencent fintech growth driven by online wealth management*. Retrieved from <http://www.chinabankingnews.com/2019/02/19/tencents-fintech-growth-driven-by-online-wealth-management/>
- China Internet Watch. (2018). *WeChat payment growth*. Retrieved from <https://www.chinainternetwatch.com/28775/wechat-pay->
- ChinaTechScope. (2018). *The history of WeChat*. Retrieved from <https://chinatechscope.com/2018/10/01/the-history-of-wechat/>
- Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). *What is disruptive innovation?* Harvard Business Review, December. Retrieved from <https://hbr.org/2015/12/what-is-disruptive-innovation>
- Collis, J., & Hussey, R. (2009). *Business research: A practical guide for undergraduate and post graduate*. Hampshire, UK: Palgrave Macmillan. ISBN-13:978-1-4039-9247- 5
- Cronin, M. J. (1993). *Doing business on the Internet: How the electronic highway is Department of Finance; National Bureau of Economic Research*. Retrieved from [http://www.bis.org/events/conf160624/philippon\\_paper.pdf](http://www.bis.org/events/conf160624/philippon_paper.pdf)
- Das, S. (2017). *Banking on disruption: Digitisation, fintech and the future of retail Banking*. Christensen Institute.
- Deloitte. (2015). *Online overhaul: Banking in the digital age*. Hao, X., Wu, L., Qian, F (contributors). Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/about-deloitte/dttp/deloitte-cn-dttp-vol5-chapter6-en.pdf>
- Deloitte. (2016). *Banking on the future. Vision 2020*. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/financial-services/in-fs-deloitte-banking-colloquium-thoughtpaper-cii.pdf>
- Dermish, A., Kneiding, C., Leishman, P., & Mas, I. (2012). Branchless and mobile banking solutions for the poor: A survey of the literature. *Innovations: Technology, Governance, Globalization*, 6(4), 81-98.
- Dietz, M., Vinayak, H. V., & Lee, G. (2016). *Bracing for seven critical changes as fintech matures*. McKinsey&Company. Retrieved from <http://school-of-finance.ru/materials/2.5.pdf>
- Distinguin, S. (2018). *WeChat, shape of the connected China – GAFAnomics*. Retrieved from <https://www.fabernovel.com/en/insights/economy/wechat-the-shape-of-the-connected-china>
- Diniz, E., de Albuquerque, J. P., & Cernev, A. K. (2011). *Mobile money and payment: A literature review based on academic and practitioner - oriented publications (2001 – 2011)*. Retrieved from <https://aisel.aisnet.org/globdev2011/7/>
- Dobby. (2013). *The Financial Post. Rogers to take on banks in mobile ‘wallet wars’*. Retrieved from <https://business.financialpost.com/technology/rogers-communications-banks-and-mobile-wallet>
- Dong, J., & Bliemel, M. (2008). Strategies for increased integration of online and in-branch services of banks in Canada. *Journal of Internet Banking and Commerce*, 13(3), December.
- Drnevich, P. L., & Croson, D. C. (2013). Information technology and business level strategy: Toward an integrated theoretical perspective. *MIS Quarterly*, 37(2), 483-510.
- Ernst & Young. (2014). *Winning through customer experience*. EY Global Consumer.

- EY. (2014). *Mobile money — the next wave of growth. Optimizing operator approaches in a fast-changing landscape*. Retrieved from [https://www.ey.com/Publication/vwLUAssets/EY\\_-\\_Mobile\\_money\\_-\\_the\\_next\\_wave\\_of\\_growth\\_in\\_telecoms/\\$FILE/EY-mobile-money-the-next-wave.pdf](https://www.ey.com/Publication/vwLUAssets/EY_-_Mobile_money_-_the_next_wave_of_growth_in_telecoms/$FILE/EY-mobile-money-the-next-wave.pdf)
- EY. (2018). *The future of banking in emerging markets*. Retrieved from [https://www.ey.com/Publication/vwLUAssets/ey-leading-through-innovation-the-future-of-banking-in-emerging-markets/\\$FILE/ey-leading-through-innovation-the-future-of-banking-in-emerging-markets.pdf](https://www.ey.com/Publication/vwLUAssets/ey-leading-through-innovation-the-future-of-banking-in-emerging-markets/$FILE/ey-leading-through-innovation-the-future-of-banking-in-emerging-markets.pdf)
- Evans, P., & Wurster, T. S. (1997). *Strategy and the new economics of information*. Harvard Business Review, September–October. Retrieved from <https://hbr.org/1997/09/strategy-and-the-new-economics-of-information>
- Excise Duty. (Amendment) No. 1, 2018. Retrieved from <https://www.parliament.go.ug/documents/3344/acts-2018>
- Financial Health Meter. (2015). *Payment Bank – A quick snapshot*. Retrieved from <http://www.financialhealthmeter.com/2015/02/15/payment-bank/>
- FinScope. (2018). *Finscope 2018 Survey Report*. Retrieved from <http://fsduganda.or.ug/finscope-2018-survey-report/>
- Forbes. (2018). *Laughing all the way to the bank: Cybercriminals targeting U.S. financial institutions*. Forbes. Retrieved from <https://www.forbes.com/sites/bhaktimirchandani/2018/08/28/laughing-all-the-way-to-the-bank-cybercriminals-targeting-us-financial-institutions/>
- Forrester Research. (2019). *US B2B commerce will hit \$1.8 trillion by 2023*. By Bonde, A., Bruno, J with Wu, S., Ruhl, C., Birrell, R. (Contributors). Retrieved from <https://www.forrester.com/report/US+B2B+eCommerce+Will+Hit+18+Trillion+By+2023/-/E-RES136173>
- Fripp, C. (2015a). *FNB becomes a mobile voice operator*. Retrieved from <https://www.htxt.co.za/2015/06/04/fnb-becomes-a-mobile-voice-operator/>
- Fripp, C. (2015b). *FNB's Connect mobile network goes live today*. Hypertext, 15 June. Retrieved from <https://www.htxt.co.za/2015/06/15/fnbs-connect-mobile-network-goes-live-today/>
- Financial Institutions (Amendment) Act 2016. Retrieved from [https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/acts/supervision\\_acts\\_regulations/FI\\_Act/Fin-Amendment-Act-2016.pdf](https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/acts/supervision_acts_regulations/FI_Act/Fin-Amendment-Act-2016.pdf)
- The Financial Institutions (Agent Banking) Regulations 2017 [No. 39 of 2017]. Retrieved from <https://ulii.org/ug/legislation/statutory-instrument/2017/39>
- Gandel, S. (2016). *Here's how Citigroup is embracing the 'fintech' revolution*. Retrieved from <https://fortune.com/longform/citigroup-fintech/>
- Glaser, P. F. (1988). Using technology for competitive advantage. The ATM experience at Citicorp. In B. Guile, & Quinn, J. B. (Eds.), *Managing innovation: Cases from the service industries*. Washington, D.C.: National Academy Press.
- Global Findex. (2017). *The global Findex database 2017*. Retrieved from <https://globalfindex.worldbank.org/>
- GSMA. (2012). *Annual report 2012*. Retrieved from [https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/10/2012\\_MMU\\_Annual-Report.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/10/2012_MMU_Annual-Report.pdf)
- GSMA. (2018). *2018 State of the industry report on mobile money*. Retrieved from <https://www.gsma.com/mobilefordevelopment/resources/2018-state-of-the-industry-report-on-mobile-money/>
- Gurdgiev, C. (2016). *Is the rise of financial digital disruptors knocking traditional banks off the track?* International Banker, 13 June. Retrieved from

- <https://internationalbanker.com/banking/rise-financial-digital-disruptors-knocking-traditional-banks-off-track/>
- Gunasekaran, A., Marri, H. B., McGaughey, R. E., & Nebhwani, M. D. (2002). E-commerce and its impact on operations management. *International Journal of Production Economics*, 75(1-2), 185-197. doi:10.1016/S0925-5273(01)00191-8
- Helgi Library. (2015). *Loans ratio*. Retrieved from <http://www.helgilibrary.com/charts/sob-interest-rates-margin-2002-2015/>
- Indrawati, S. (2015). *Financial inclusion: Stepping-stone to prosperity*. Retrieved from <http://blogs.worldbank.org/voices/financial-inclusion-stepping-stone-prosperity>
- Investopedia. (2017). *Balance sheet*. Retrieved from <https://www.investopedia.com/>
- Jankowicz A.D. (1995). *Business research projects* (2nd ed.). London: International Thomson Business Press.
- Jankowicz, A.D. (2005). *Business research projects* (4th ed.) London: International Thomson Business Press. ISBN: 1-84 480-082-2
- Jenkins, B. (2008). *Developing mobile money ecosystems*. Washington, D.C.: IFC and the Harvard Kennedy School.
- Johns, R. (2010). *Likert items and scales*. Retrieved from [https://www.sheffield.ac.uk/polopoly\\_fs/1.597637!/file/likertfactsheet.pdf](https://www.sheffield.ac.uk/polopoly_fs/1.597637!/file/likertfactsheet.pdf)
- Johnson, G., & Scholes, K. (1997). *Exploring corporate strategy* (4th ed.). London: Prentice Hall Europe.
- Kalakota, R., & Whinston, A. (1996). *Frontiers of electronic commerce*. Redwood City, CA: Addison-Wesley.
- Kearney, A. T. (2009). *The five forces shaping the banking industry: Preparing for the Economic recovery*. Retrieved from [https://www.atkearney.com/documents/10192/296636/Five\\_Forces\\_Shaping\\_Banking.pdf/9a0bcd47-8572-4dba-9aa1-8ec204ffbeac](https://www.atkearney.com/documents/10192/296636/Five_Forces_Shaping_Banking.pdf/9a0bcd47-8572-4dba-9aa1-8ec204ffbeac)
- Kendall, J., & Maurer, B. (2012). *Understanding payment behavior of African households: A vast and untapped market*. Retrieved from <http://pymnts.com/commentary/Tips-for-2012-Understanding-PaymentBehavior-of-African-Households-A-Vast-and-Untapped-Market>
- King, N., Horrocks, C., & Brooks, J. (2015). *Interviews in qualitative research* (2nd ed.). London: SAGE Publications. ISBN 978-1-4462-7496-5
- Kohli, R., & Devaraj, S. (2003). Performance impacts of information technology: Is actual usage the missing link? *Management Science*, 49(3), 273-289.
- Kotak Bank. (2015). *Kotak Mahindra Bank: A digital pioneer*. Raval, B. Express Computer (Online). Retrieved from: <https://www.expresscomputer.in/news/kotak-mahindra-bank-a-digital-pioneer/20249/>
- Kshetri, N., & Acharya, S. (2012). *Mobile payments in emerging markets*. Retrieved from <https://www.researchgate.net/publication/256039838>.
- Lee, I., & Shin, Y. J. (2017). *Fintech: Ecosystem, business model, investment decisions, and challenges*. Bloomington, IN: Elsevier. doi:10.1016/j.bushor.2017.09.003
- Lee, Y.-P. (2009). Banking service quality in Vietnam: A comparison of customers' and bank staff's perceptions. *The Journal of International Management Studies*, 4(2), 147-157.
- Leedy, P. D., & Omrod, L. E. (2013). *Practical research: Planning and design* (10th ed.). Hoboken, NJ: Pearson. ISBN:13-978-0-13-269324-0
- Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitisation and Big Data analytics. *The Journal of Strategic Information Systems*, 24(3), 149-157.
- Mas, I., & Staley, J. (2014). *Why Equity Bank felt it had to become a telco – reluctantly*. Retrieved from <https://www.cgap.org/blog/why-equity-bank-felt-it-had-become-telco-reluctantly>

- McKinsey & Company. (2015). *Global payments 2015: A healthy industry confronts disruption*. Retrieved from [https://www.mckinsey.com/~media/McKinsey/dotcom/client\\_service/Financial%20Services/Latest%20thinking/Payments/Global\\_payments\\_2015\\_A\\_healthy\\_industry\\_confronts\\_disruption.ashx](https://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Financial%20Services/Latest%20thinking/Payments/Global_payments_2015_A_healthy_industry_confronts_disruption.ashx)
- McKinsey. (2016a). *A digital crack in banking business model*. Retrieved from <https://www.mckinsey.com/industries/financial-services/our-insights/a-digital-crack-in-bankings-business-model>.
- McKinsey. (2016b). *Bracing for seven critical changes as fintech matures*. Retrieved from <https://www.fintechnews.org/xbox-one-to-launch-in-china-this-month-after-all/>
- MEDICI. (2019). *The fintech story of WeChat*. Retrieved from <https://gomedici.com/fintech-story-of-wechat/>
- Meridian. (2016). *Digital financial services. Leaders and up & comers*. Retrieved from [http://www.meridian.org/wp-content/uploads/2016/12/3.-Case-Studies-of-Countries-and-Digital-Financial-Services\\_\\_by-Bill-and-Melinda-Gates-Foundation.pdf](http://www.meridian.org/wp-content/uploads/2016/12/3.-Case-Studies-of-Countries-and-Digital-Financial-Services__by-Bill-and-Melinda-Gates-Foundation.pdf)
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly*, 28(2), 283-322.
- Morawczynski, O., & Pickens, M. (2009). *Poor people using mobile financial services: Observation on customer usage and impact from M-Pesa*. World Bank Other Operational Studies 9492, The World Bank. Available at: <https://ideas.repec.org/p/wbk/wboper/9492.html>
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches* (2nd ed.). Nairobi: Acts.
- Mugisa, M. (2013). *Legal issues in mobile money transactions in Uganda: Challenges and next steps*. Retrieved from <https://mustaphamugisa.com/legal-issues-in-mobile-money-transactions-in-uganda-challenges-and-next-steps/>
- Mynewsroom. (n.d.). *FNB first bank to launch its own mobile services*. Retrieved from <http://www.mynewsroom.co.za/fnb-first-bank-to-launch-its-own-mobile-services/>
- Ndiwalana, A., Morawczynski, O., & Popov, O. (2010). *Mobile money use in Uganda: A preliminary study*. Kampala, Uganda: Kampala-Makerere University. Retrieved from <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/m4dmobilemoney.pdf>
- Noto, G. (2017). *AliPay, WeChat Processed \$3 trillion in 2016*. Retrieved from <https://bankinnovation.net/allposts/biz-lines/payments/alipay-wechat-processed-3-trillion-in-2016>
- Nyagilo, V. O., Sakwa, M. M., & Namusonge, G. S. (2017). Efficiency of mobile led financial services and its effect on financial inclusion in Kenya. *International Journal of Business Management & Finance*, 1(32), 554-576.
- OECD. (2015). *The role of financial markets and financial intermediation*. Retrieved from <https://www.oecd-ilibrary.org/sites/9789264281288-5-en/index.html?itemId=/content/component/9789264281288-5-en>
- Omarini, A. (2017). *The digital transformation in banking and the role of fintechs in the new financial intermediation scenario*. MPRA Paper 85228. Retrieved from <https://mpra.ub.uni-muenchen.de/85228/>
- Parsons, G. (1983). *Fitting information systems technology to the corporate needs: Payment: A literature review based on academic and practitioner-oriented publications*. Brazil: FGV-EAESP – Brazil-Fundação Getulio Vargas; Department of Computer 43 Systems (ICMC)-USP - Universidade de São Paulo, Brazil & FGV-EAESP – Brazil-Fundação Getulio Vargas.

- Peer, N. (2015). *Kotak Mahindra to buy 19.9% stake in Bharti Airtel's proposed payments bank*. VCCircle, 29 January. Retrieved from <https://www.vccircle.com/kotak-mahindra-buy-199-stake-bharti-airtels-proposed-payments-bank/>
- Philippon, T. (2016). *The fintech opportunity*. NBER Working Paper No. 22476. Retrieved from <https://www.nber.org/papers/w22476>
- Piccoli, G., & Ives, B. (2005). Review: IT-dependent strategic initiatives and sustained competitive advantage: A review and synthesis of the literature. *MIS Quarterly*, 29(4), 747-776.
- Ponemon Institute. (2015). *2015 Cost of data breach study: Global*. Retrieved from <http://ibm.co/1FStqBu> Published May 2015
- Porter, M. E., & Millar, V. E. (1985). *How information gives you competitive advantage*. Harvard Business Review, July. Retrieved from <https://hbr.org/1985/07/how-information-gives-you-competitive-advantage>
- Porter, M. E. (1985). *Competitive advantage*. New York, NY: The Free Press.
- PwC. (2016). *Blurred lines: How fintech is shaping financial services*. Retrieved from <https://www.pwc.de/de/newsletter/finanzdienstleistung/assets/insurance-inside-ausgabe-4-maerz-2016.pdf>
- Rogers Communication. (2014). *Our history*. Retrieved from <https://about.rogers.com/who-we-are/our-history/>
- Sadana, M., Mugweru, G., Cracknell, D., & Wright, G. (2011). *Analysis of financial institutions riding the M-PESA rails*. Nairobi, Kenya: Micro Save. Retrieved from <https://www.microsave.net/2011/03/01/analysis-of-financial-institutions-Ashill-riding-the-m-pesa-rails/>
- Saunders, M., Lewis, P., & Thornhill, A. (1997). *Research methods for business students*. London: Pitman Publishing.
- Schultheis, R., & Sumner, M. (1998). *Management information systems: The manager's view*. Boston, MA: Irwin Professional Publishing.
- Serafeimidis, V. (1999). In search of strategy (letters). *Sloan Management Review*, 41.
- Shank, J. K., Spiegel, E. A., & Escher, A. (1998). *Strategic value analysis for competitive advantage. An illustration from the petroleum industry*. Strategy & Business, Booz Allen & Hamilton, n. 10.
- Shubhashish. (2016). *Budget 2016: Full text of finance minister Arun Jaitley's speech*. The Economic Times, 29 February. Retrieved from <https://economictimes.indiatimes.com/news/economy/policy/budget-2014-full-text-of-finance-minister-arun-jaitleys-speech/articleshow/51194097.cms?from=mdr>
- Sorrentino, F. (2015). *Millennials & fintech are top of mind for traditional banks*. Retrieved from <https://www.forbes.com/sites/franksorrentino/2015/11/20/heard-at-the-2015-aba-national-convention/#66f505cb65cb>
- Staschen, S. (2015). *Mobile money moves forward in Uganda despite legal hurdles*. Washington, D.C.: Consultative Group to Assist the Poor (CGAP). Retrieved from <https://www.cgap.org/blog/mobile-money-moves-forward-uganda-despite-legal-hurdles>
- The Centre for Financial Inclusion. (2015). *Financial inclusion*. [http://www.centerforfinancialinclusion.org/index2.php?option=com\\_content&view=article&id=579&Itemid=161](http://www.centerforfinancialinclusion.org/index2.php?option=com_content&view=article&id=579&Itemid=161)
- The FinTech revolution. (2015). A wave of startups is changing finance – for the better. *The Economist*, 415(8937), 13. Retrieved from <https://www.economist.com/leaders/2015/05/09/the-fintech-revolution>
- Thompson, A. A Jr, & Strickland, A. J. (1998). Strategic management, concept and cases, transformation arising from digitisation and Big Data analytics. *The Journal of Strategic Information Systems*, 24(3), 149-157.

- Uganda Communications Commission [UCC]. (2018). *Communication sector performance report, quarter ending December 2018*. Uganda Communications Commission.
- USAID. (2012). *Uganda mobile money assessment and case study: Examining cash payment streams and their electronic alternatives amongst USAID implementing partners*. Retrieved from [https://solutionscenter.nethope.org/assets/collaterals/Uganda\\_Market\\_Assessment\\_and\\_Case\\_Studies\\_Final.pdf](https://solutionscenter.nethope.org/assets/collaterals/Uganda_Market_Assessment_and_Case_Studies_Final.pdf)
- Uskovic. (2017). *The fintech evolution. Fintech innovation*. Retrieved from <https://www.techrevolution.asia/archives/4474>
- Wallace, C. (2017). *Three steps to digital transformation for retail banks*. Retrieved from <https://insights.samsung.com/2017/01/31/three-steps-to-digital-transformation-for-retail-banks/>
- Walchek, S. (2015). *The unbundling of finance*. Retrieved from <https://techcrunch.com/2015/05/29/the-unbundling-of-finance/>
- Wan, W. W. N., Luk, C., Fam, F., Wu, P., & Chow, C.W.C. (2012). Interpersonal relationship, service quality, seller expertise: How important are they to adolescent consumers? *Psychology and Marketing, 29*(5), 365-377. doi:10.1002/mar.20527
- Waupsh, J. (2016). *Bankruption: How community banking can survive fintech*. Hoboken, NJ: John Wiley & Sons.
- Weill, P., & Woerner, S. (2015). Thriving in an increasingly digital ecosystem. *MIT Sloan Management Review, 56*(4), 27-34.
- World Bank. (2013). *Universal financial access is vital to reducing poverty, innovation key to overcoming the enormous challenge, says President Jim Yong Kim*. World Bank Press Release No. 2014/132/FPD. Retrieved from <https://www.worldbank.org/en/news/press-release/2013/10/11/universal-financial-access-vital-reducing-poverty-innovation-jim-yong-kim>
- World Bank. (2015). *Ending extreme poverty and sharing prosperity: Progress and policies*. Retrieved from <http://pubdocs.worldbank.org/en/109701443800596288/PRN03Oct2015TwinGoals.pdf>
- World Bank. (2016). *The World Bank in Uganda – Uganda overview*. Retrieved from <https://www.worldbank.org/en/country/uganda/overview>
- World Bank. (2017). *Digital access: The future of financial inclusion in Africa*. Retrieved from [https://www.ifc.org/wps/wcm/connect/96a4f610-62b1-4830-8516-f11642cfeafd/201805\\_Digital-Access\\_The-Future-of-Financial-Inclusion-in-Africa\\_v1.pdf?MOD=AJPERES&CVID=mdz-QF0](https://www.ifc.org/wps/wcm/connect/96a4f610-62b1-4830-8516-f11642cfeafd/201805_Digital-Access_The-Future-of-Financial-Inclusion-in-Africa_v1.pdf?MOD=AJPERES&CVID=mdz-QF0)
- Worthington-Smith, R. (2000). *The e-commerce handbook 2000. Your guide to the internet revolution and the future of business*. Cape Town, RSA: Trialogue.
- Yin, R. K. (2017). *Case study research: Design and methods* (6th ed.). Thousand Oaks, CA: Sage Publications.
- Zahra, S., Sisodia, R., & Matherne, B. (1999). Exploiting the dynamic links between competitive and technology strategies. *European Management Journal, 17*(2), 188-203.
- Zalan, T., & Toufaily, E. (2017). The promise of fintech in emerging markets: Not as disruptive. *Contemporary Economics, 11*(4), 415-430.

## Appendix 1: Financial Institution Questionnaire

Structured interview/questionnaire addressed to senior management of banks in Uganda.

### Introduction

My name is James Museba; I am a DBA candidate at the International School of Management, Paris. I am currently conducting a research on the “*Assessment of the effectiveness of fintech on banking digitalization efforts in Uganda*”. This questionnaire shall be used for academic purposes only and all responses will be treated with confidentiality. Completion of this questionnaire is completely voluntary and anonymity will be maintained. You may withdraw from this study without attracting any form of penalty. I therefore kindly ask you to honestly answer all questions and feel free to ask for assistance in answering. Your co-operation will be greatly appreciated.

### 1. Background Information

1.1. Name of Organisation \_\_\_\_\_

1.2. Which of the following best describes the nature of your business?

- Commercial/Retail bank
- Finance House
- Other (please specify) \_\_\_\_\_

1.3. How long has your institution been operating?

- Less than 5 years
- 5 to less than 10 years
- 10 to less than 15 years
- Over 15 years

1.4. Please indicate the number of employees in your institution.

- Less than 250
- 250 to less than 500
- 500 to less than 750
- 750 to less than 1000
- Over 1000

1.5. Please indicate the number of customers in your institution.

- Less than 250K
- 250 to less than 500K
- 500 to less than 750K
- 750 to less than 1000K
- Over 1000K

1.6. Please indicate the rural/urban ration of the customer base

\_\_\_\_\_

1.7. Which forms of competition are you currently most concerned about?

- New entrants

- Existing players
- Substitute products/services
- Other (specify) \_\_\_\_\_

1.8. What title closely matches your job title?

- CEO/MD
- Chief Operations Officer
- Chief Information Officer/IT Manager
- Chief Digital Officer
- Director – Retail Banking
- Other (please specify) \_\_\_\_\_

**2. Information Technology and competitive strategies**

2.1. Does your organisation have an Information Technology strategy?

- Yes
- No
- Do not know

2.2. How do you rate the level of intensity of competition in the banking sector?

- Intense
- Moderate
- Light

2.3. How do you rate your institution in terms of adoption of new technologies?

- First Mover
- Follower

2.4. In your opinion, what are the factors influencing competition in the banking sector?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

2.6. What are the three major drivers of change in the banking industry?

- New domestic entrants
- Technology companies (Fintech)
- Foreign entrants
- Globalisation
- Mergers and Acquisitions
- Other (specify) \_\_\_\_\_

2.7. What are the most important issues that impact on the adoption and implementation of Information Technology?

- Increasing competition/ competitive rivalry
- Service Quality
- Customer Acquisition/ Retention
- Cost Reduction
- Other (specify) \_\_\_\_\_

2.8. Are you likely to introduce agency banking?

- Yes
- No

2.9. Which of the following factors impede your Information Technology implementation efforts?

- Inadequate communication infrastructure
- Power outages
- Inadequate Capital
- Unstable currency
- Government Regulations
- Other (specify) \_\_\_\_\_

2.10. Have you downsized your distribution channels (e.g. branch network) in the past 2 years?

- Yes
- No

2.11. What was the rationale behind the downsizing?

- Cost reduction
- Introduction of digital distribution channels
- Other (Specify) \_\_\_\_\_

2.12. Do you currently have a strategy to switch customers to digital channels?

- No comment
- Yes
- No

2.13. Is there a likelihood of strategic alliances with Information Technology companies in the adoption of new technology?

- Yes
- No

2.14. In your own opinion, to what extent has Information Technology improved your business performance (competitive advantage) relative to competitors?

- Very High contribution
- Moderate contribution
- Low contribution

2.15. Based on your own experience and judgement, how do you rank the rate of Information Technological change in the entire banking sector?

- High
- Moderate
- Low

2.16. How do you rate the differences in information technological capabilities among banks in Uganda? (*Answer may be based on the level of technological developments across banks*)

- High
- Moderate
- Low

2.17. How do you rate your bank's ability to implement new Information systems/solutions?

- High
- Moderate
- Low

2.19. In your opinion, to what extent has Information Technology improved the provision of quality service to your customers?

- High
- Moderate
- Low

2.20. To what extent do Information Technology solutions address the following activities within your organisation?

	Fully	Partially	None
Customer Service quality	•	•	•
Customer service delivery turnaround time	•	•	•
Delivering value to customer	•	•	•
Building and sustaining customer loyalty	•	•	•
Product Innovation	•	•	•
Wide product range	•	•	•
Accuracy, minimising errors	•	•	•
Improve corporate image	•	•	•
Improve operating efficiency	•	•	•

2.21. What are the three main measures used to judge success in your institution?

- Image and Reputation
- Return on Capital
- Asset quality
- Client Retention
- Revenue Growth (% over previous year)
- Cost to income ratio
- Other (specify) \_\_\_\_\_

### 3. Information Technology utilisation

3.1. What are the main functions of the installed information systems?

- Transaction Processing
- Operational Control
- Digitalisation
- Strategic tool
- Other (please specify) \_\_\_\_\_

3.4. Does your institution operate digital channels?

- Yes
- No

If YES, For how long has your bank been using digital channels?

- Less than 1 year
- 1 to less than 3 years
- Over 3 years

3.4.1. What has been the rate of adoption of the digital channels?

- High
- Medium
- Low

#### **4. Information Technology Expenditure/ Investment**

4.1. Please indicate your bank's Information Technology spending in the last 3 years (in million USD)

- Less than 10m
- 10m to less than 20m
- 20m to less than 30m
- Over 30m
- Do not know

4.2. Please indicate your bank's Information Technology budget for the next 3 years

- Less than 10m
- 10m to less than 20m
- 20m to less than 30m
- Over 30m
- Do not know

4.3. Would you consider merging with or acquiring another financial institution?

- Yes
- No

4.4. If yes, what type of an institution?

- Another Bank
- Insurance Company
- Technology company (Fintech)
- Other (Please specify) \_\_\_\_\_

#### **5. Additional comments**

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Thank you for taking part in this research.

## Appendix 2: Customer Questionnaire

Structured questionnaire addressed to customers of banks and mobile operators to evaluate mobile money services.

### Introduction

My name is James Museba; I am a DBA candidate at the International School of Management, Paris. I am currently conducting a research on the “Assessment of the effectiveness of fintech on banking digitalization efforts in Uganda”. This questionnaire shall be used for academic purposes only and all responses will be treated with confidentiality. Completion of this questionnaire is completely voluntary and anonymity will be maintained. You may withdraw from this study without attracting any form of penalty. I therefore kindly ask you to honestly answer all questions and feel free to ask for assistance in answering. Your co-operation will be greatly appreciated.

Instructions: Unless a specific question instructs otherwise, please follow the answer guide below the question

1. Which commercial/retail bank (mobile operator platform) do you transact with?  

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2. Based on your knowledge, how do you rank the rate at which the entire banking sector in Uganda is changing in respect of embracing digital channels?
  - High
  - Moderate
  - Low
3. How do you rate your bank’s ability to implement new digital channels that benefit customers?
  - High
  - Moderate
  - Low
4. In your opinion, how do you rate the differences in digital capabilities among banks in Uganda?
  - High
  - Moderate
  - Low
  - Do not know
5. How do you rate your bank’s overall service delivery?
  - High
  - Moderate
  - Low
6. How many years have you used digital channels?
  - Less than 3 years
  - 3 to less than 5 years

- More than 5 years
  - Never used
7. Who told you first about digital channels?
- Friend
  - Someone else
  - Bank-personnel/promoter
  - Leaflet
  - Nobody
8. Who explained how they function?
- Friend
  - Someone else
  - Bank-personnel/promoter
  - Leaflet
  - Nobody
9. How user-friendly do you find digital channels?
- Very friendly
  - Reasonably friendly
  - Not sure
  - Not at all friendly
10. On average, how often do you use digital channels?
- Daily
  - Three times a week
  - Once a week
  - Once a month
  - Once a year
11. How long do you have to queue before it is your turn to use banking services in a branch?
- No waiting at all
  - Less than 5 minutes
  - Over 5 minutes
  - Do not remember
12. How do you rate the online availability of digital channels?
- Above 80%
  - 51 - 80%
  - 21 – 50%
  - 0 – 20%
13. Where would you like to see more agencies for mobile money operators?
- Shopping-centres
  - Service stations
  - Railway-stations
  - Bus-stations
  - Theatres
  - Other (please specify) \_\_\_\_\_

14. What functions do you use often?
- Withdrawal
  - Transfer (person to Person)
  - Utility payments
  - Statement request
  - Balance check
15. Are there additional functions that you would like added on digital channels?
- Yes
  - No
- If YES, please specify \_\_\_\_\_
16. Is it easy to make mistakes when you use digital channels?
- Yes
  - No
- If YES, How easy / difficult is it to correct these mistakes?
- Very easy
  - Easy
  - Not sure
  - Difficult
  - It is too late to do something
17. In your opinion, are there enough branches/agents in your city/suburb?
- Yes
  - No
18. Do you feel your money is safe when you use digital channels?
- Yes
  - No
19. What do you prefer to use when you need to make cash withdrawals?
- Banking Hall
  - Agent
  - Other (please specify) \_\_\_\_\_
20. How many kilometres (about) is it to your nearest branch/agent?
- \_\_\_\_\_
21. What makes you use digital channels?
- Avoid long queues in banking halls
  - Only source for cash after hours
  - Availability of services everywhere
  - Other (specify) \_\_\_\_\_
22. What payment method do you use when buying groceries?
- Mobile Money
  - VISA
  - Cash

- Other (please specify)

If answer above is Mobile Money then go to 23 otherwise go to 24.

23. Is the transaction hassle free?

- Yes
- No

IF NO, what causes the delays?

- Link breakdown
- Assistant not sure
- Other (please specify) \_\_\_\_\_

24. How do you rate the bank's digital channels?

- Excellent
- Very Good
- Good
- Never used the facility

### **Mobile Money**

25. How easy is to open a mobile money account/wallet compared to a bank account?

- Very simple steps and easy
- Need assistance via an agent/promoter
- Complicated
- Other (specify) \_\_\_\_\_

26. Is the mobile money account (wallet) your first bank account?

- Yes
- No

IF Yes,

26.1. What are the major uses of the wallet?

- Person to Person transfers
- Business transactions
- Utility payments
- Cash in/Cash out
- Savings
- Other (please specify) \_\_\_\_\_

26.2. If there was no mobile money banking, do you believe you were likely to open a bank account?

- Yes
- No

26.3. What is impact of the mobile money account in your livelihood?

- Very High
- High
- Moderate

- Low

26.4. Are you likely to recommend this service to your community/friends?

- Yes
- No
- Not sure

27. Do you prefer mobile money banking services compared to your own bank's digital services?

- Yes
- No

IF Yes, How often do you perform bank to wallet transactions?

- Every Day
- Every week
- Once a month
- Other (please specify) \_\_\_\_\_

28. Are you aware of any other method of carrying out banking transactions without going to the banking hall?

- Yes
- No

If YES, please specify \_\_\_\_\_

29. How effective is the option of obtaining cash from agents in remote areas?

- Very efficient
- Depends on network availability
- A hassle
- Do not know

30. How does the mobile money banking service fare in terms of utilisation and awareness in the market?

- Better service being offered
- Similar service to the banks' digital channels
- Convenient to the customer
- Other (Specify) \_\_\_\_\_

31. Do you think the mobile money banking service is a potential threat to retail banking service?

- Yes
- No

32. Sex?

- Female
- Male

33. Marital Status?

- Single
- Married

- Divorced
- Widowed

34. Occupation

- Employed
- Unemployed
- Self Employed

35. Age?

- Less than 25
- 25 to less than 40
- 40 to less than -60
- Over 60 years

Thank you for taking part in this research.