

# Significant Effect of Fintech on the Growth of SMES in Rivers State Nigeria

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## Abstract

Small And Medium Enterprises (SMEs) are the backbone of Nigeria's economy, accounting for most of over 50% of total employment and over 80% of employment growth over the decade former. The survey indicated that, despite their involvement, historical statistics show that out of five SMEs, three of them do not see their first year of activity while 80% of those that continue fail before the fifth year. The overall objective of the study is to determine the significant effect of FinTech on the growth of small and medium enterprises (SMEs) in Rivers State. The general objectives that guided this study were to determine how mobile money influenced the growth of SMEs in Rivers State, to establish how digital lending impacted the growth of SMEs in Rivers State and to measure how online banking has affected the growth of SMEs in Rivers State. Some of the theories used in the study included; Theory of acceptance of technology, Unified theory of acceptance and use of technology, Theory and technology of diffusion innovation, Theory of organization and the environment. The study used a descriptive illustrative design to achieve the goals. Rivers State according to the 2018 Business Register. Stratified random sampling was applied and the formula of Krejcie and Morgan (1997) was used to arrive at the sample size of 105 SMEs. The study used primary data obtained through a self-administered questionnaire. Using forty questionnaires to ensure the validity and reliability of the data, a pilot test was carried out. The data collected was analyzed using version 25 of the Social Science Statistical Package (SPSS) software. Quantitative information was analyzed using inferential and descriptive statistics. The normality test was performed to check for abnormal values. The study also performed the test model specification to determine if the linear regression analysis best fits the data. The coefficient was used to analyze the relationship between the variables. Pearson's correlation was performed to establish a linear relationship between the study variables. Regression analysis was conducted to establish the nature of the relationship to which the study refers, as there was a positive significance of the effect of FinTech on SME growth. The study attributed 16% of SME growth to mobile money, digital loans and online banking. The study recommends that financial institutions take advantage of the increased use of mobile money services to form partnerships with mobile phone service providers and provide flexible financial services to operators. The study also suggests that a comparative study be carried out to examine other variables and their effect on the growth of SMEs that are not covered by this study.

**Key Words:** FinTech and Small and Medium Enterprises (SMEs)

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## I. INTRODUCTION

### BACKGROUND OF THE STUDY

Kagan, J. (2019) defines financial technology (Fintech) as the description of new tech that seeks to improve and automate the delivery and use of financial services. At its core, Fintech is used to help companies, business owners and consumers better manage their financial operations, processes, and lives by utilizing specialized software and algorithms that are used on computers and, increasingly, smartphones. Fintech, the word, is a combination of "financial technology".

When Fintech emerged in the 21st Century, they initially applied the term to the technology employed at the back-end systems of established financial institutions. Since then, however, there has been a shift to more consumer-oriented services and therefore a more consumer-oriented definition. Fintech now includes different sectors and industries such as education, retail banking, fundraising and non-profit, and investment management to name a few.

Fintech also includes the development and use of cryptocurrencies such as bitcoin. While that segment of Fintech may see the most headlines, the big money still lies in the traditional global banking industry and its multi-trillion-dollar market capitalization.






According to McKinsey & Company (2020), Banking in Nigeria remains an attractive sector, with over \$9 billion in value pools, despite high levels of competition, the vast majority of consumers are underserved. Lack of access to services, especially in rural areas, issues of affordability, and poor user

experience all contribute to the frustration consumers experience right across the customer spectrum.

This has created an opening that Fintech has been quick to take advantage of, with many stepping up to develop enhanced propositions across the value chain to address pain points in affordable payments, quick loans, and flexible savings and investments, among others (Figure 1.1).

Figure 1.1 Fintech Value Proposition

**Fintechs are developing innovative value propositions across the financial services value chain to address customer needs.**

Fintech value propositions		
Products	Sub-category	Core value proposition
	Wallets	Easy to sign up, easy to use stored value wallets using mobile phones and incorporating key use cases for customers across transportation, food and digital services
	Processors	Simplified channels to allow SMEs and corporates to receive online payments from customers
	Remittances	Easy, instant cross-border transfers at a fraction of the cost and time of conventional players—often leveraging cryptocurrency
	Merchant service providers	Merchant terminal providers allowing merchants to receive offline payments
	Savings	Automated, disciplined and high-return savings for middle class customers and millennials
	Wealth management	Offer customers investment options in diverse industries on online platforms at attractive rates (significantly higher than banks' savings accounts)
	Retail lending	Instant, unsecured, short-term loans to retail customers leveraging alternative credit scoring algorithms and data
	MSME lending	Quick, unsecure working capital loans to MSMEs with minimal documentation
	Lending infrastructure	Lending platform for banks and other lending players to simplify lending process and provide risk assessment
	Personal finance	Automated expense tracking, budgeting, and investments leveraging machine learning
	Merchant solutions	Value added services for MSMEs and merchants, such as inventory management, loyalty and accounting
	Financial institution	Platforms and services for financial services providers to leverage the provision of digital services to their customers e.g., software, automation
	Savings	Fully digital banking services leveraging smartphones
	Wealth management	Insurance marketplaces

Not exhaustive



Source: McKinsey & Company 2020

A youthful population, increasing smartphone penetration, and a focused regulatory drive to increase financial inclusion and cashless payments, are combining to create the perfect recipe for a thriving Fintech sector. Nigeria is now home to over 200 Fintech standalone companies, plus several Fintech solutions offered by banks and mobile network operators as part of their product portfolio. Between 2014 and 2019, Nigeria's bustling Fintech scene raised more than

\$600 million in funding, attracting 25 percent (\$122 million) of the \$491.6 million raised by African tech startups in 2019 alone—second only to Nigeria, which attracted \$149 million According to Africa Tech Startups Funding Report, Disrupt Africa (2019).

However, the sector is still relatively young. As Africa's largest economy with a population of

200 million—40 percent of which is financially excluded—Nigeria offers significant opportunities for Fintech across the consumer spectrum, notably within the small and medium-sized enterprise (SME) and affluent segments and, increasingly, in the mass-market segment.

Digitally savvy, middle-aged, and young affluent individuals face poor user experience on products and find the value-add from using financial products underwhelming.

They expect speed and simplicity in their dealings with their financial service provider: "I want my online shopping to be seamless. I don't want to stare at my screen waiting for a one-time password (OTP)," one respondent complained to us. The product value proposition for this segment is similarly limited. Returns on savings are low and there is limited access to investment opportunities, both domestic and international. With savings interest rates ranging between 4 and 5 percent per annum and inflation at 11 to 12 percent pre-COVID-19, traditional savings accounts have proven to be ineffective in achieving financial goals.

Senior affluent individuals also face poor user experience on products and limited availability of value-added services such as advisory and estate planning services. For this segment, easy-to-use digital applications are important, and quality advisory service and support. A survey respondent told us he did not want to have to go into an office to get his issue resolved because it could not be resolved over the phone. Some key pain points include slow responses to complaints, complicated or non-functional banking applications, limited financial tracking solutions, and lack of advisory support for investment management.

The latest and speedy emergence of financial technology in Nigeria's financial system and small and medium-sized businesses has sparked a persevering hobby amongst stakeholders to impeach the appropriateness of the technology adopted. Some stakeholders are obsessed with the adoption given the innumerable blessings got, which includes the convenience and pace of provider transport operations, even as others are not, fear approximately the dangers involved. Related and expected. This chance is connected to the susceptible infrastructure and technical understanding of those techniques. Also, Nigerians lack financial education, which might inspire users/clients to just accept revolutionary services and products derived from technology. By specializing in SME operations, researchers are concerned approximately they have an effect of financial technology on SMEs. BNY Mellon (2015), in his file at the Orientation of Payment Innovations, targets to have a look at the developing talents of financial technology, each within the consumer / retail marketplace and within the wholesale/commercial enterprise; discover how in which and whilst bills are made and who makes them easier; apprehend the enormous position of FinTech and the answers it offers within the organization. After carrying out a sequence of surveys and excerpts from the latest courses which include Accenture (2015), their findings display that the bills sector is developing, pushed via way of means of a pointy boom in innovation, modifications in consumption, and lots of industries, projects and converting marketplace conditions; Technology innovation-focused at the SME marketplace has been especially active (inspired via way of means of the effect of the financial crisis), which has brought about the emergence and developing recognition of non-conventional varieties of financing. In his conclusions, Louis (2014) discovered that countrywide firms (SMEs) provided extra than 80% of employment possibilities in South Africa. Also, he careworn that inclusive boom of small companies might handiest be workable if the home commercial enterprise sector, which incorporates small companies which includes agriculture and non-farm companies, may want to boom and boom productivity. Oladejo and Adereti (2010) discovered that the Internet and Internet technology elevated and expanded within the 1990s, growing a worldwide and cost-powerful commercial enterprise and verbal exchange platform for companies. Despite the big Information Technology investments of recent years, it's been extraordinarily tough to illustrate the results on organizational performance Mahmood and Mann, (2000). Nigeria is a cash economic system, with extra than 90% of finances living outdoor in the banking sector as compared to the developed world, in which the foreign money in circulate is 4% within the United States. UU and 9% within the United States UU as provided via way of means of Ovia (2002) and Ojo (2004). While the economic system is characterized via way of means of psychology, it targets to hold and bodily contact a lifestyle primarily based totally on ignorance, illiteracy, loss of safety consciousness, and appreciation of the benefit of virtual payment. Public guidelines have to supply manner to new improvements within the financial sector.

## **FINTECH**

According to Kelvin Leong and Anna Sung (2018), FinTech (i.e., Financial Technology) is an emerging topic in the business world. According to global investment in FinTech companies hit US\$24.7 billion across 1076 deals in 2016, while Garrick and Rauchs showed that the total cryptocurrency market capitalization has increased over 3 times since early 2016, reaching nearly US\$25 billion in March 2017.

Kelvin Leong and Anna Sung (2018) discovers Nigeria presents a vast opportunity for FinTech as 37% of the population is unbanked but the population is young (it's estimated that 62% of the population is under the age of 25), and well-connected (internet penetration is 50.2% and mobile penetration is 84%). The regulator, the Central Bank of Nigeria, has established a regulatory sandbox for FinTech and is continuously exploring how to keep up with innovation in the space.

According to PwC 2017 FinTech Survey Report, over 62% of customers will use mobile applications to access financial services within the next 5 years.

Digital payments, mobile lending, and personal finance are currently the most popular areas where FinTech is operating.

Kelvin Leong and Anna Sung (2018) also realize Some Nigerian Fintech is gaining the worldwide attention of investors. Lagos-based payment company Paystack in August 2018 raised \$80 million from Visa, Tencent, Stripe, and Y Combinator. As of August 2018, Paystack had over 17,000 live merchants (which includes Dominos, MTN, Taxify, and Lagos Internal Revenue Service). In July 2018, CowryWise, which helps Nigerians save and invest in government bonds, was selected to take part in the Silicon Valley-based Y Combinator accelerator.

Banks in Nigeria are also leveraging FinTech to improve customer experience. One of Nigeria's biggest banks, First Bank, launched the First Bank Digital Lab in July 2018, at the "Yabacon Valley," Yaba, Lagos mainland. The lab serves as a platform for First Bank to collaborate and advance with the rapidly developing FinTech.

The world economy has undergone a thorough process of modernisation and digitalisation in mostly each sector during the last few decades, at the point where entirely new industries have emerged, demonstrating how the concentration of several innovative companies in a single area facilitates the flow and contamination of ideas within different industries, leading to a flourishing economic sector and revolutionary innovations.

This disruptive wave of innovation is now converging towards an historically bound to tradition and renovation-adverse industry: banking. This upcoming flow of innovation goes under the name of "fintech", that is, financial technology, and has the goal to disrupt the currently dated and inefficient financial sector through the implementation of new technologies and processes.

The Nigerian banking sector remains highly attractive, with over \$9 billion in value pools, but despite high levels of competition, majority of her consumers are underserved. Issues such as inaccessibility to services, especially in rural areas, affordability, and poor user experience all contribute to the frustration consumers experience right across the customer spectrum.

This has created an opening that fintechs have been quick to take advantage of, with many stepping up to develop enhanced systems across the value chain to address pain points in affordable payments, quick loans, flexible savings and investments, among others (Kola- Oyeneyin et al., 2020).

The rapid emergence of financial technology in Nigeria's financial system and in the running of small and medium-sized enterprises has sparked a continuing interest among stakeholders to question the appropriateness of the technologies adopted. It encompasses a rapidly growing industry that serves the interests of both consumers and businesses in many ways to better manage their financial operations, processes, and lives through the aid of specialized software and algorithms that are used on computers and, increasingly, smartphones. From mobile banking and insurance to cryptocurrency and investment apps, fintech has a seemingly endless array of applications (Julia, 2020).

Some stakeholders are enthusiastic about the adoption owing to the enormous benefits obtained, for example, the ease and speed of service delivery operations (Gabriella, 2015). Other stakeholders are worried about the risks involved, associated and anticipated. Their fears are linked to the weak infrastructure and technical knowledge of these technologies. In addition, Nigerians lack financial education, and as such it is difficult to encourage customers to accept innovative products and services derived from this technology.

Kayanula and Quartey (2000) defined small and mid-size enterprises (SMEs) as businesses that maintain revenues, assets, or several employees below a certain threshold. Each country has its definition of what constitutes a small and medium-sized enterprise (SME). Certain size criteria must be met and occasionally the industry in which the company operates is taken into account as well.

Though small in size, small and mid-size enterprises (SMEs) play an important role in the economy. They outnumber large firms considerably, employ vast numbers of people, and are generally entrepreneurial, helping to shape innovation (Kayanula and Quartey, 2000).

According to Subhan *et al.*, (2013), SMEs have continued to play a vital role in employment creation, poverty

reduction, thus, being considered as contributing factors of economic development in both developed and developing nations. Umeabali (2009) emphasized that SMEs have remained the key employment sector in developing nations as well as being the keystones in the productive structure of emerging economies. OECD (2000) stated that SMEs have continued to play an important role in job creation considering 60% to 70% which was contributed by 95% of the firms. 50% of the GDP on average in the developed countries is contributed by SMEs (Subhan *et al.*, 2013)

Ukiwe and Ogbulafor (2007) says SMEs in developing countries typically suffer from limited access to long-term and affordable finance, insufficient institutions for developing skilled class of entrepreneurs and workers and poor policies to support the economic and social upgrading of SMEs.

Technology growth in the current era of globalization is very fast in innovating. Progress in technology has made it easier for humans to do all their activities. One of the technological advances is in the field of information. The fastest and dominant development of information technology is the internet. The rise of the smartphone has massively changed the behavior of consumers (Farida and Subroto, 2018). Whether it's checking to pay for goods online or making bank transfers via a mobile app, Nigerians are now getting used to handling financial affairs as easily and conveniently as they do their email or Facebook page.

Reports have shown the growing evidence that Mobile Money (MM) as well as other fast emerging firms can positively contribute to productivity and poverty eradication and more importantly provide SMEs with a viable alternative to traditional banking (Tengeh and Gahapa 2020).

### **REGULATORS**

The Central Bank of Nigeria has primary responsibility for regulating financial services in Nigeria. Other relevant bodies include the Nigerian Deposit Insurance Corporation (NDIC) (which protect deposits); and the Financial Services Regulations Co-ordinating Committee (which promotes safe, sound and efficient practices by financial intermediaries). The Nigerian Communications Commission (NCC) also regulates FinTech businesses where the services offered involves mobile phones under the License Framework for Value Added Service issued by NCC.

In February 2018 the CBN issued a press release in which it reiterated that crypto currencies such as Bitcoin, Ripples, Monero, Litecoin, Dogecoin, Onecoin, and Exchanges such as NairaEx are not licensed or regulated by the CBN. In April 2018, Members of the House of Representatives called on CBN and NDIC to put in place a legal framework for regulating the blockchain technology. In March 2018, The CBN along with Nigeria Interbank Settlement System introduced a regulatory sandbox with the aim to facilitate digital innovation by the FinTech companies. As of March 2018, CBN in partnership with Bill and Melinda Gates (BMG) Foundation was developing a set of regulations for FinTechs as a new group in the financial services sector.

### **INVESTORS**

Kelvin Leong and Anna Sung (2018) noted international investors are taking notice of the potential of Nigerian FinTech. For example, in August 2018, a UK government delegation, led by the UK prime minister, visited Nigeria to meet with entrepreneurs and forge connections with the African FinTech community.

The group included representatives from the Financial Conduct Authority, the London Stock Exchange Group, and the Prime Minister's Ambassador for FinTech as well as representatives from big financial service players.

SMEs in Nigeria can receive funding from dedicated funds or take out loans at friendlier rates. The Bank of Industry (BOI) provides funding to small businesses by offering customer-friendly rates through the youth entrepreneurship support fund and the national youth service fund, with a focus on technology companies.

There are funds such as Aliko Dangote Fund, the Tony Elumelu Entrepreneurial Foundation, the National Information Technology Development Agency Fund that are also dedicated to supporting SMEs.

The Enhancing Financial Innovation and Access (EFInA), a financial development organization funded by DfID and BMG Foundation, launched an Innovation fund in 2009.

The fund provides grant subsidies through the Technical Assistance Grant and the Innovation grant worth US\$250k and US\$2m respectively.

### **TALENT**

Nigeria ranks relatively high in Africa on entrepreneurship, and the majority of activity takes place in the capital city of Lagos. However, the STEM (science, technology, engineering, and mathematics) talent demand has outpaced supply.

The private sector has launched its initiatives to nurture local talent. For example, digital payments firm Interswitch has launched Interswitch SPAK, a program to support young Nigerians who are interested in acquiring the problem-solving skills that come with solid STEM education.

Official initiatives are being set in place to support and encourage innovation to create jobs.

- The Federal Ministry of Finance introduced the YouWIN Connect program to promote entrepreneurship, job creation, and wealth through enterprise education for young Nigerians in target sectors that align with the government's objective of diversifying the economy and promoting competition and transparency.
- The Lagos State Government set up a Lagos State Entrepreneurs Trust Fund (LSETF) in 2016, worth US\$69.5m (₦25b), to provide financial support to residents of the state, for jobs, wealth creation, and to tackle unemployment. LSETF acts as an instrument to inspire the creative and innovative energies of all Lagos residents and reduce unemployment across the State.

### **GROWTH OF SMALL AND MEDIUM ENTERPRISES (SME'S)**

Liberto, D. (2019) defines Small and mid-size enterprises (SMEs) as businesses that maintain revenues, assets, or several employees below a certain threshold. Each country has its definition of what constitutes a small and medium-sized enterprise (SME). Certain size criteria must be met and occasionally the industry in which the company operates is taken into account as well.

Though small in size, small and mid-size enterprises (SMEs) play an important role in the economy. They outnumber large firms considerably, employ vast numbers of people, and are generally entrepreneurial, helping to shape innovation.

According to Subhan et al., (2013), SMEs have continued to play a vital role in job creation, employment creation, poverty reduction, spurring innovations, creating new products thus being considered as contributing factors of economic development in both developed and developing nations. Avendano (2013) emphasized that SMEs have remained the key employment sector in the developing countries as well as being the keystones in the productive structure of emerging economies. OECD (2000) stated that SMEs have continued to play an important role in job creation considering 60% to 70% which was contributed by 95% of the firms. Ayyagari et al. (2007) emphasized that 50% of the GDP on average in the developed countries is contributed by SMEs.

According to Hansjörg Herr and Zeynep m. Nettekoven (2017), Small and medium-sized enterprises (SMEs) play an important role in development. Of importance is Schumpeterian SMEs, which include start-ups that trigger innovation, boost productivity and bring about structural change. Normal SMEs, which only adjust to market pressure, is also important for development and employment.

Hansjörg Herr and Zeynep m. Nettekoven (2017) says SMEs in developing countries typically suffer from limited access to long-term and affordable finance, insufficient institutions for developing a skilled class of entrepreneurs and workers, a low income, and poor policies to support the economic and social upgrading of SMEs.

Hansjörg Herr and Zeynep m. Nettekoven (2017) emphasized that Economic upgrading in developing countries is necessary, but it will not be successful without social upgrading.

According to PwC (2010), the SME sector is the backbone of major developed economies, as well as important contributors to employment, economic, and export growth. In South Africa, SMEs account for 91% of businesses, 60% of employment, and contribute 52% of total GDP. In Nigeria, SMEs contribute 48% of the national GDP, account for 96% of businesses, and 84% of employment.

In the Nigerian economy, despite the significant contribution of SMEs, challenges persist that hinder the growth and development of the sector.

According to the Nigeria Bureau of Statistics, small and medium scale enterprises (SMEs) in Nigeria have contributed about 48% of the national GDP in the last five years. With a total number of about 17.4 million, they account for about 50% of industrial jobs and nearly 90% of the manufacturing sector, in terms of the number of enterprises.

PwC (2010), emphasized that though significant growth has been achieved in the MSME sector, there is still much to be done. According to an article on "developing Africa through effective, socially responsible investing", "there still exists a 'missing middle', which finds it hard to access funds due to the category of funding they belong to." Other challenges encountered by the sector include lack of skilled manpower, the multiplicity of taxes, high cost of doing business, among others

Based on the above, there is a need to evaluate SMEs in Nigeria to unlock the growth and development of the sector in Nigeria. The evaluation will assist in attaining a status report on the level of effect or impact of the existing funding and other support strategies on the target recipients; as well as aid in driving policy assessment, redirection, and formulation going forward, especially in this present economic climate.

According to the 2010 Survey report on SMEs in Nigeria conducted by the National Bureau of Statistics (NBS) in collaboration with SMEDAN, the SME sector in Nigeria is strategically positioned to absorb up to 80 percent of jobs, improve per capita income, increase value addition to raw materials supply, improve export earnings, enhance capacity utilization in key industries and unlock economic expansion and GDP growth.

## **FINTECH AND GROWTH OF SMES**

According to Kamparia, (2018), the rise of the smartphone has massively changed the behavior of consumers. Whether it's checking to pay for goods online or making bank transfers via a mobile app, Nigerians are now getting used to handling financial affairs as easily and conveniently as they do their email or Facebook page.

This is considered a good opportunity for news startup businesses and it's the major reason for the disruption we are witnessing today.

To measure the growth of SMEs about FinTech we consider various Fintech and their effect. According to Tengeh, R.K. and Gahapa Talom, F.S. (2020), the growing evidence that MobileMoney (MM) can positively contribute to productivity and poverty eradication and more importantly provide SMEs with a viable alternative to traditional banking, the stakeholders that matter most have been slow in taking advantage of this opportunity.

## **BANKING**

FinTech is the major cause of all the recent disruptions we are experiencing in the Nigerian banking sector today (With the likes of ALAT by Wema Bank & GTBanks 737). Now you can access top-notch financial services without stepping into a bank.

Fintech uses technology in a better way to make people feel convenient living in the modern age. FinTech helps people who are 'unbanked' but a desire to buy or sell online have access to quick and affordable banking operations just by using a mobile phone.

## **PAYMENTS**

The Nigerian payments landscape has significantly evolved over the past decade. The cost of integrating online payments to a website 5 years ago was over 150k now thanks to FinTech, the cost of accepting online payments is Zero.

With the rapid adaptation of card payments in Nigeria, platforms like Flutterwave and Paystack are playing the lead role in making it easy for businesses to start accepting online payments with the click of a button.

## **LENDING**

FinTech has fuelled the growth of alternative lenders which offer both higher yields to investors and faster, cheaper, more convenient loans for borrowers compared to traditional banks.

Private lenders like PayLater, QuickCheck, and Lidya are continuing to plow hundreds of millions of naira into alternative-lending space in Nigeria making it easy for anyone to access quick loans (business or personal) when needed.

## **FINANCIAL MANAGEMENT**

FinTech is changing the way we manage our money for the better. FinTech startups are introducing simple ways to manage and track your finances.

Instead of relying on a pen and paper or spreadsheet, you can now use digital financial solutions to manage your finances in real-time. Good examples of Nigerian startups playing in this space are PiggyBank for saving, Invoice NG for invoicing, and Kliqr for expense management.

## **OVERVIEW OF RIVERS STATE**

Rivers State, also known simply as Rivers, is one of the 36 states of Nigeria. According to census data released in 2006, the state has a population of 5,185,400, making it the sixth-most populous state in the country. Its capital, Port Harcourt is the largest city and is economically significant as the centre of Nigeria's oil industry. Rivers State is bounded on the South by the Atlantic Ocean, to the North by Imo, Abia and Anambra States, to the East by Akwa Ibom State and to the West by Bayelsa and Delta states. It is home to many indigenous ethnic groups: Ikwerre, Ibani, Opobo, Eleme, Okrika, and Kalabari, Etche, Ogba, Ogoni, Engenni and others. The people from Rivers State are known as "Riverians".

The inland part of the state consists of tropical rainforest; towards the coast the typical Niger Delta environment features many mangrove swamps.

Rivers state, named after the many rivers that border its territory, was part of the Oil Rivers Protectorate from 1885 till 1893, when it became part of the Niger Coast Protectorate. In 1900 the region was merged with the chartered territories of the Royal Niger Company to form the colony of Southern Nigeria. The state was formed in 1967 with the split of the Eastern Region of Nigeria. Until 1996 the state contained the area now known as Bayelsa State.

## **HISTORY**

In the early days of the colonial period, several protection treaties were signed between various indigenous communities and the British colonial government. Between 1941 and 1952, agitation for the creation of Rivers

province began with the formation of the Ijo Rivers People's League. By 1953, the Council of Rivers Chiefs was birthed as a replacement body for the League, the same year, another organisation, the Calabar Ogoja Rivers (COR) State Movement became existent.

The Council of Rivers Chiefs was later renamed in 1954 to Rivers Chiefs and Peoples' Congress and in 1956, the organisation became known as the Rivers Chiefs Peoples Conference. Until 1958, hopes of an independent state resonated with the region, and lingered consistently in the minds of its natives. During the constitutional conference that year, the country's nationhood was affirmed while an agreement was reached on some measures to mitigate the fears of the ethnic minorities in the area. Around this time, the COR State Movement had broken away to press their own case. Thereafter, the British launched a commission led by Sir Henry Willink to look into the misgivings of these autochthons. The Willink Commission initiated the conception of the Niger Delta Development Board (NDDDB). The purpose was to tackle the problems of underdevelopment, however, this failed to rise to the expectations of the masses. After much discontent, some of the people attempted to take the extralegal route to achieve their goals.

In February 1966, Isaac Boro, Sam Owonaro and Nottingham Dick alongside their supporters proclaimed a "Delta Peoples Republic". The rebellion was immediately crushed by the Federal and the old Eastern Nigeria government. On 27 May 1967, under the administration of General Yakubu Gowon, decree No. 14 was issued, allowing the creation of Rivers State. From then on, complaints about political marginalisation, environmental degradation and economic pauperization remained among the Ijaw groups, such that a separate Bayelsa State was carved out of Rivers State by the military government during 1996.

## **DEMOGRAPHICS**

Over the period from 1991 to 2006, the total population of Rivers State increased by close to 3 million people. The last official census showed that 5,198,716 people were living in the state, of whom 2,673,026 were male and 2,525,690 were female. Adults and adolescents aged 15 to 64 years accounted for 61% of the population in the state. Children below the age of 15 accounted for 36% of the population, and those aged 65 years and above, another 3%. Port Harcourt and Obio-Akpor had the highest number of inhabitants of any local government area, while Ogu-Bolo and Omuma had the lowest. The total area of the state was 11,077 km<sup>2</sup> (4,277 sq mi) and the density was 635.89 inhabitants per square kilometre (1,646.9/sq mi).

Rivers State has higher literacy rate compared to most states in the South South geopolitical zone. Its male literacy as of 2006 was 52.3% while female literacy rate was 47.7%. In the same survey, it ranked as 26th most extensive and the 6th most populous of all the states of Nigeria. A 2015 estimate put the number of residents of Rivers State at over 7 million, nearly triple the number recorded in 1991.

According to the National Bureau of Statistics projection, the population in the state was 4% of the total population of the country. Data of 2010–2015 showed life expectancies for male, 54 years and female, 57 years were very low. General mortality rate was 60 per 1000, under-5 mortality rate was 90 and maternal mortality rate was 889 per 100,000 live births, one of the highest nationwide.

## **AGRICULTURE**

Prior to the discovery of oil in commercial quantity in 1951, Agriculture was the primary occupation of the people of Rivers State. Around 19th century when the industrial revolution reached its peak in England, the area was then referred to as Oil Rivers Protectorate, this was due to its abundant palm oil and kernel which basically constituted the main revenue source of the country. In a sample survey carried out by the Federal Ministry of Agriculture and Natural Resources, about 40% of the rural inhabitants were committed to farming in 1983. Rivers State is one of the leading states in the production of yam, cassava, cocoyam, maize, rice and beans. About 39% (760,000 hectares) of the state's total land mass, particularly in the upland area, is suitable for cultivation. Major cash crops produced are oil palm products, rubber, coconut, raffia palm and jute. Other crops grown for food include, vegetables, melon, pineapples, mango, pepper, banana and plantain. The fishing industry is an important sector in Rivers State. Besides being lucrative, fishing is also a favorite past time activity. There are approximately 270 species of fish existing; with many artisanal fishermen in the riverine areas. The state provides valuable seafoods such as crabs, oysters, shrimps and sea snails among others. Vertebrates like birds, mammals and reptiles are also found in the region.

## **EDUCATION**

In 1999 the state had 2,805 government primary schools and 243 secondary schools. The secondary schools are concentrated mainly in LGA headquarter towns and in Port Harcourt. Tertiary institutions include the University of Port Harcourt, Choba, Port Harcourt established by the federal government in 1975, the Rivers State University of Science and Technology, founded in 1980 by the state government, the School of Health Technology, Port Harcourt, established by the state government, the Federal College of Education (Technical), Omoku and the state-owned Rivers State Polytechnic at Bori, the Rivers State University of Education (Ignatius



Ajuru University) at Rumuolumeni, Nkpolu Oroworukwo and Ndele and the School of Nursing and Midwifery at Rumueme, Port Harcourt. The Rivers State College of Arts and Science in Port Harcourt gained polytechnic status in 2006.

### **NATURAL RESOURCES**

The state is famous for its vast reserves of crude oil and natural gas. It was perhaps the richest and most important section of the African zone of the British Empire. Rivers State has two major oil refineries, two major seaports, airports, and various industrial estates spread across the land. More than 60% of the country's output of crude oil is produced in the state. Other natural resources found within its boundaries are silica sand, glass sand and clay.

### **OVERVIEW OF NIGERIA**

According to World Bank (2020), a key regional player in West Africa, Nigeria accounts for about half of West Africa's population with approximately 202 million people and one of the largest populations of youth in the world. With an abundance of natural resources, it is Africa's biggest oil exporter and has the largest natural gas reserves on the continent.

### **CONTEXT**

World Bank Emphasized that Nigeria is a multi-ethnic and culturally diverse federation that consists of 36 autonomous states and the Federal Capital Territory. The political landscape is partly dominated by the ruling All Progressives Congress party (APC) which holds 217 out of 360 seats at the National Assembly; 64 out of 109 seats in the Senate, and 19 out of 36 State Governors.

Muhammadu Buhari secured a second term at the 2019 presidential elections, while the results were contested by the main opposition party the People's Democratic Party (PDP). Since 2011, the Nigerian security landscape has been consistently shaped by the war against Boko Haram terrorist groups in the northern states. This adds to a lasting crisis in the oil-rich Niger Delta, where several non-state armed groups attack oil companies and state-owned pipelines.

### **DEMOGRAPHICS**

According to CIA's World Factbook the population of Nigeria is 219,463,862 (July 2021 est.).

Note: estimates for this country explicitly take into account the effects of excess mortality due to AIDS; this can result in lower life expectancy, higher infant mortality, higher death rates, lower population growth rates, and changes in the distribution of population by age and sex than would otherwise be expected.

Nigeria has the largest population in Africa. The United Nations project that the overall population of Nigeria will reach about 401.31 million by the end of the year 2050. By 2100, if current figures continue, the population of Nigeria will be over 728 million.

According to the Census Bureau of the United States, the population of Nigeria will surpass that of the United States in 2047, when the population of Nigeria will reach 379.25 million. With those numbers, Nigeria will become the third most populated country in the world.

The major contributors to Nigeria's population growth are early marriages, high birth rates, and a lack of family planning access. The birth rate in Nigeria is about 37 births per 1,000 people.

### **AGE STRUCTURE**

0-14 years: 41.7% (male 45,571,738/female 43,674,769)

15-24 years: 20.27% (male 22,022,660/female 21,358,753)

25-54 years: 30.6% (male 32,808,913/female 32,686,474)

55-64 years: 4.13% (male 4,327,847/female 4,514,264)

65 years and over: 3.3% (male 3,329,083/female 3,733,801) (2020 est.)

Figure 1.2 Population Pyramid of Nigeria

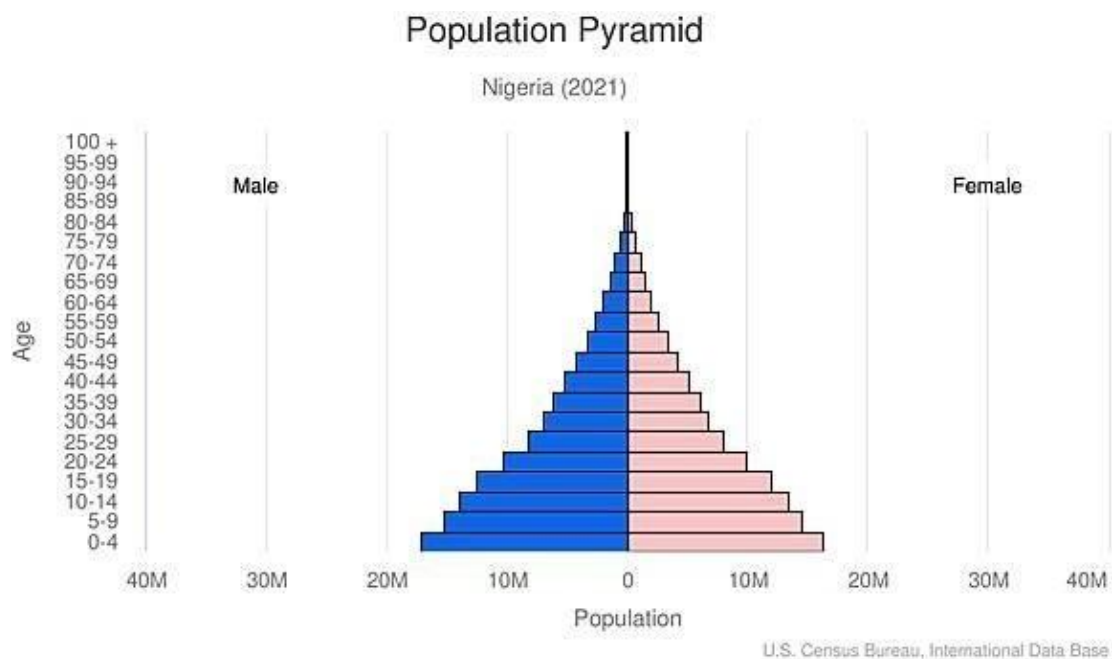


Figure 1.2 shows the population pyramid for Nigeria. A population pyramid illustrates the age and sex structure of a country's population and may provide insights about political and social stability, as well as economic development. The population is distributed along the horizontal axis, with males shown on the left and females on the right. The male and female populations are broken down into 5-year age groups represented as horizontal bars along the vertical axis, with the youngest age groups at the bottom and the oldest at the top. The shape of the population pyramid gradually evolves over time based on fertility, mortality, and international migration trends.

**DEPENDENCY RATIOS**

Total dependency ratio: 86 Youth dependency ratio: 80.9 Elderly dependency ratio: 5.1

Potential support ratio: 19.6 (2020 est.)

**MEDIAN AGE**

Total: 18.6 years

Male: 18.4 years

Female: 18.9 years (2020 est.)

**BIRTH RATE**

34.38 births/1,000 population (2021 est.)

**DEATH RATE**

8.89 deaths/1,000 population (2021 est.)

**NET MIGRATION RATE**

-0.21 migrant(s)/1,000 population (2021 est.)

**POPULATION DISTRIBUTION**

Largest population of any African nation; significant population clusters are scattered throughout the country,

with the highest density areas being in the south and southwest as shown in this population distribution map

#### **URBANIZATION**

Urban population: 52.7% of total population (2021)

Rate of urbanization: 3.92% annual rate of change (2020-25 est.)

Total population growth rate v. urban population growth rate, 2000-2030

Major urban areas – population 14.862 million Lagos, 4.103 million Kano, 3.649 million Ibadan, 3.464 million ABUJA (capital), 3.171 million Port Harcourt, 1.782 million Benin City(2021)

#### **SEX RATIO**

At birth: 1.06 male(s)/female

0-14 years: 1.04 male(s)/female

15-24 years: 1.03 male(s)/female

25-54 years: 1 male(s)/female

55-64 years: 0.96 male(s)/female

65 years and over: 0.89 male(s)/female

Total population: 1.02 male(s)/female (2020 est.)

#### **MOTHER'S MEAN AGE AT FIRST BIRTH**

20.4 years (2018 est.)

Note: median age at first birth among women 25-49

#### **MATERNAL MORTALITY RATIO**

917 deaths/100,000 live births (2017 est.)

#### **INFANT MORTALITY RATE**

Total: 58.23 deaths/1,000 live birthsmale: 63.67 deaths/1,000 live births  
female: 52.46 deaths/1,000 live births (2021 est.)

#### **LIFE EXPECTANCY AT BIRTH**

Total population: 60.87 yearsmale: 59.07 years  
female: 62.78 years (2021 est.)

#### **TOTAL FERTILITY RATE**

4.67 children born/woman (2021 est.)

#### **CONTRACEPTIVE PREVALENCE RATE**

16.6% (2018)

#### **DRINKING WATER SOURCE**

Improved: urban: 92.6% of population Rural: 63.6% of population  
Total: 77.9% of population Unimproved: urban: 7.4% of population Rural: 36.4% of population  
Total: 22.1% of population (2017 Est.)

#### **CURRENT HEALTH EXPENDITURE**

3.9% (2018)

#### **PHYSICIANS' DENSITY**

0.38 physicians/1,000 population (2018)

#### **SANITATION FACILITY ACCESS**

Improved: urban: 80.2% of population Rural: 39.5% of population  
Total: 59.7% of population

Unimproved: urban: 19.8% of population Rural: 60.5% of population

Total: 40.3% of population (2017 est.)

#### **LITERACY**

Definition: age 15 and over can read and write Total population: 62%  
Male: 71.3%

Female: 52.7% (2018)

#### **SCHOOL LIFE EXPECTANCY (PRIMARY TO TERTIARY EDUCATION)**

Total: 9 years

Male: 9 years

Female: 8 years (2011)

#### **UNEMPLOYMENT, YOUTH AGES 15-24**

Total: 18.3%

Male: 18.4% na

Female: 18.2% na (2019 est.)

#### **NIGERIA POPULATION GROWTH**

The Nigerian government has been doing its best to help curb a rapid growth in population. They have offered free contraception over the past 10 years or so and they have even started taking steps to discourage people who are looking to have large families. The government is banking on smaller families as a way to secure financial salvation in the future. They are looking toward territories like Thailand – another area with large population growth issues – as a model for their current strategy.

Until the point where some success is found in these efforts, the current projections for 2050 are over 390 million total residents.

#### **NIGERIA POPULATION PROJECTIONS**

Nigeria continues to grow faster than many other countries of similar size, but the rate is predicted to slow somewhat in the coming years with the current rate of 2.62% dwindling down to 2.04% by 2050. Nigeria's

population is predicted to hit 206 million by 2020, and 264 million by 2030 - crossing the 300 million thresholds around 2036.

## **ECONOMIC OVERVIEW**

Nigeria is highly vulnerable to the global economic disruption caused by COVID-19, particularly due to the pronounced decline in oil prices and spikes in risk aversion in global capital markets. Nationally, 40 percent of Nigerians (83 million people) live below the povertyline, while another 25 percent (53 million) are vulnerable. With COVID-19, many of these 53 million vulnerable people could fall into poverty. The magnitude of the health impact depends on the duration and the domestic spread of the outbreak, while the economic impact hinges on oil prices. Oil accounts for over 80 percent of exports, a third of banking sector credit, and half of the government revenues. Oil prices also affect growth in non-oil industries and services, with additional pressures arising from foreign portfolio investors' reassessment of risks and domestic liquidity management. World Bank (2020).

The macroeconomic situation is more challenging now than in 2015-2016 when oil prices fell sharply and Nigeria experienced its first recession in 25 years. In the current situation, Nigeria has fewer buffers and policy instruments to cushion adverse effects. The Excess Crude Account is depleted, external reserves are highly reliant on short-term flows, and policy uncertainty affects investor confidence. Before the 2016 recession, Nigeria's economy was growing fast at 6.3%. By contrast, before COVID-19 struck, the economy was growing at 2.2%. Inflation was in the single digits in 2014, compared to about 12% in 2019. The general government fiscal deficit was 4.4% of GDP in 2019, compared to 1.8% in 2014, According to World Bank (2020).

Unemployment and underemployment are expected to increase, affecting poor households and increasing the share of the population vulnerable to falling into poverty. Only agriculture is expected to positively contribute to growth in 2020.

## **DEVELOPMENT CHALLENGES**

While Nigeria has made some progress in socio-economic terms in recent years, its human capital development remains weak due to under-investment. It ranked 152 of 157 countries in the World Bank's 2018 Human Capital Index. The country continues to face massive developmental challenges, including the need to reduce the dependency on oil and diversify the economy, address insufficient infrastructure, build strong and effective institutions, as well as address governance issues and public financial management systems. These pre-existing structural challenges have left the Nigerian economy especially vulnerable to the COVID-19 outbreak and its consequences.

Inequality, in terms of income and opportunities, remains high and has adversely affected poverty reduction. The lack of job opportunities is at the core of the high poverty levels, regional inequality, and social and political unrest. Without the COVID-19 shock (the counterfactual scenario), about 2 million Nigerians were expected to fall into poverty in 2020 as population growth outpaces economic growth. With COVID-19, the recession is likely to push an additional 5 million Nigerians into poverty in 2020, bringing the total newly poor to 7 million this year World Bank (2020).

## **PROBLEM STATEMENT**

By delving deeper into the meaning of each of the dimensions identified, the term "technology," the definitions coincide in the technologies that form the foundation of financial services, such as mobile payments, data analysis, participatory forms, or cryptocurrencies. Sources define "organizations" as "new companies" and "companies that focus on providing financial services or platforms with IT support." The "money flow" is equal to the investments made to support the growth of such businesses. The mechanism dimension includes the creation, modification, or improvement of the service/product/process or the existing business model to improve customer quality (transparency, accessibility, reduction of costs or costs, etc.). These activities were aided by technological advances, as evidenced by the "computer application to financing and service delivery" aspect. The disruptive function of financial technology can be explained by financial institutions creating alternatives to existing services, such as replacing the bank as an intermediary.

Despite the critical role played by SMEs, they face a myriad of problems. Statistics indicate that the rate of small business failure is high with only 3 out of 5 business surviving 5 months to one year after formation and those that survive 80% of them collapse before the fifth year world bank (2015). Majority of the SMEs working in Africa face numerous difficulties that hinder their performance and development (Mihajlovic and Kume 2015). Adoption of technology provides an avenue for SMEs to improve their performance which would reduce the failure rate, McEvily et al. (2014) argued out that innovation was key in driving competitiveness, more

profits and greater productivity to unlock the potential of many SMEs. Hence SMEs have to adapt innovative ways as well as new financial systems in carrying out their business to maintain their sustainability and continued existence

Research exists on role of traditional banking services on performance of SMEs in Nigeria but little has been done on FinTech and its effects on growth of SMEs. A variety of these studies are; mobile phone banking experiences by Njenga (2009), effect of E- money transfer on liquidity of SMEs by Moenga (2013) on, Wanyonyi and Bwisa (2013) on effect of virtual money transfer services on performance of SMEs in Kitale municipality, Jack and Suri, (2014) on transaction costs and risk sharing as evidenced from Nigeria's E- money revolution. None of these studies has been carried out on the role of FinTech on micro and small businesses growth.

Small business development in Nigeria is largely based on social, monetary systems, economic and administrative skills, which prevents SMEs from increasing. The proposed inquiry, however, concentrated on the key sources of formal and informal SME funding. Research on effect of FinTech on growth of SMEs has not been fully done. The proposed field of research,

i.e., Rivers State is one of the most prolific business towns in the world, with very little documentation on the impact of FinTech on SME development. Consequently, this forms the basis of the proposed research study.

### **RESEARCH OBJECTIVES:**

The research objective of this study is:

#### **GENERAL OBJECTIVE**

To examine the significant effect of fintech on the growth of SMEs in Nigeria

#### **SPECIFIC OBJECTIVES**

- i. To determine effect of mobile money on growth of SMEs in Nigeria.
- ii. To establish the influence of digital lending on growth of SMEs in Nigeria.
- iii. To measure the effect of online/mobile banking on growth of SMEs in Nigeria

### **RELEVANCE OF RESEARCH:**

This Research should be relevant to the following:

#### **OWNERS OF SMES**

The research study would be of help to the many SME owners on the various types of financial technology innovations that they can adapt to enable them to have better market access and also give them a competitive advantage by coming up with new products as well as access to new markets. Further, the study would assist the SME operators to fully understand the entrepreneurial impact of this technology on their business to cope with the increasing developments in the financial technology on one hand, and the challenges of the micro-business operating in such an environment.

#### **SCHOLARS**

To the researchers and academicians, these study findings led to the contribution of the professional extension of existing knowledge on the effects of FinTech on the growth of SMEs. Future researchers and scholars would benefit from this study as it would act as a reference material besides suggesting areas for further research that they can further knowledge on the growth of SMEs concerning FinTech.

#### **COUNTRY GOVERNMENT**

The Nigeria Government can make use of the findings from the study to help in the advancement of structure in development and market the SMEs ventures in the Country. Also, it would be of help to the Country government since it would contain recommendations of FinTech on the growth of SMEs, and in so doing the Country can strategize on the policy that would improve the SMEs in terms of technology.

The government and policymakers would gain valuable information on the effects of FinTech on the growth of SMEs. The study would be used in policymaking regarding disruptive technologies. Policymakers would as well learn challenges and loopholes in their current framework and how it's affecting the operations of SMEs.

## **RESEARCH QUESTIONS**

Based on the problems indicated above, the following research questions were raised; What is the significant effect of mobile money on growth of SMEs in Nigeria?

What is the significant effect of digital lending on growth of SMEs in Nigeria? What is the significant effect of online banking on growth of SMEs in Nigeria?

## **STUDY HYPOTHESIS**

The stated hypotheses tested in this study:

H01: Mobile money has no significance on growth of SMEs in Nigeria  
H02: Digital lending has no significance on growth of SMEs in Nigeria  
H03: Online banking has no significance on growth of SMEs in Nigeria

## **SCOPE OF THE STUDY**

In pursuance of the objective of the study, attention shall be focused on Financial Technology (Fintech). To conduct an empirical investigation into the significant effect of Fintech on the Growth of SMEs In Nigeria.

The study attempted to explore cross industrial similarities or disparities between small and medium-sized companies in relation to factors influencing the choice of financial technologies used. The independent variables included size of the firm, information availability and type of FinTech used; whereas dependent variable was the SMEs FinTech usability.

## **RESEARCH METHODOLOGY**

To design the rewards and recognition questionnaires and interview questions, and to learn more about the effect of Fintech on the Growth of SMEs In Nigeria, a qualitative research phase is conducted. Individuals in their natural work settings are observed and their normal day-to-day functions such as interaction with customers, coworkers, and managers are observed as well.

Qualitative research methodology is a scientific method used by researchers whenever there is a phenomenon about which little is known or one wishes to obtain more or new in-depth insight into the problems in question. Field research is especially appropriate for the study of those behaviors and attitudes that need to be explored in a social context, within their natural setting, "as opposed to the somewhat artificial settings of experiments and surveys" Babbie, (2001). There is a multiplicity of qualitative methods that allow the researcher to go to the field and collect all the data as possible for later scrutiny and conclusions. The qualitative methodology chosen in this particular research is a case study in that it can be exploratory, explanatory, or descriptive and it also considers the complexity and dynamic qualities of the social world.

A case study involves systematically gathering enough information about a particular person, social setting, event, or group to permit the researcher to effectively understand how it operates or functions Gerring (2007). This methodology is the most suitable approach to accomplish the research objectives of the qualitative phase. It permits the use of different techniques to get the correct data to explore these complex issues and contributes to the understanding of human behavior in organizational settings Berg, (2008). This first stage of the research provided the necessary background and information and develop a survey to quantitatively test out the proposed hypotheses.

Qualitative interviews differ from the survey questions in that there is not a particular set of questions that must follow a set of predetermined words to be asked in a definite order. The interviews allow the researchers to dig out the information as the interview prospers Babbie, (2001). During the interviewing process, it is necessary to create an appropriate climate for informational exchanges and individuals' predisposition to reach the highest possible level of disclosure Berg, (2008).

The quantitative method was used to gather data from both the survey and interview. This is because this method is usually and efficiently dealing with numbers and measurable data. Therefore, data collected were usually able to be presented in a table, graph, or statistical form.

For this research thesis, table form is utilized as it is better at presenting the data for analysis and extracting useful information from the data.

**LIMITATION OF THE STUDY**

The study is limited to investigating the significant effect of Fintech on the growth of SMEs in Nigeria. Limitation faced by the research was limited time and financial constraint.

**DEFINITION OF BASIC TERMINOLOGIES**

- Fintech: A portmanteau of the terms "finance" and "technology" and refers to software and other modern technologies used by businesses that provide automated and improved financial services. The term is a broad and rapidly growing industry serving both consumers and businesses.
- Internet banking: Investopedia describes Internet banking as the same as online banking or web banking which allows a user to conduct financial transactions via the Internet. Internet banking offers customers almost every service traditionally available through a local branch including deposits, transfers, and online bill payments. a method of banking in which transactions are conducted electronically via the Internet.

**PHD THESIS STRUCTURE**

The PhD thesis consists of five chapters that contribute to the study’s logic as shown in the Table 1.1

Table 1.1 The study’s logic

Research phase	Contribution to the study’s logic
Introduction(Chapter 1)	Introduction is only a heading under which the following six narrative sections appear: General Statement of the Problem, Significance of the Thesis, Research Question(s), Limitations and Delimitations, Assumptions, and Definitions of Terms. These Sections will help the reader understand what will be presented in the thesis, and why” (College of Education Masters Committee).
Literature review(Chapter 2)	Considered the two fundamental areas –Fintech, and SMEs. The concepts revealed in the literature determined the author's understanding and allowed for formation of a conceptual apparatus that included the key analytical categories used as the basis for the analysis performed in Chapters 2 and 3
Research methodology (Chapter 3)	Based on the study’s design and the collected qualitative data, chosen research methods for this thesis study will be explained
Data analysis, Interpretation (Chapter 4)	This section helps readers to determine the validity of the research through Data Analysis, Interpretation and Discussion of the results.
Summary of findings and Recommendations (Chapter 5)	This section is limited to a discussion of summarized data that were presented earlier in the thesis. The section shows the summary, conclusion and recommendations of the findings.

Source: Developed by the Author

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## LITERATURE REVIEW

### INTRODUCTION

The financial services industry is made up of economic services provided by the finance institutions which include, credit unions, banks, accounting firms, real estate, etc. The financial services industry is basically a financial service provided to consumers or businesses which effectively manages money (Gibson, 2015).

Although financial systems can be traced as far back as the 1860's, it was the nineties when the industry really came to fruition. The financial services industry has witnessed significant changes and alterations over the last few decades. Financial Institutions and banks have seen dramatic reform. There has been a mass transformation of current banks and new entrants to the industry.

The financial services became more prevalent in the United States and the world as a result of the Gramm - Leach - Bliley (GLB) Act. It was this act that started to change the landscape of financial services. The Act requires these financial institutions and companies who offer financial products or services such as loans, or financial investment advice to simply explain their information sharing practices to their customers thus safeguarding sensitive data. (Federal Trade Commission, online).

The (GLB) Act “loosens restrictions on banks’ abilities to engage in the previously restricted activity of underwriting securities and permits banks to underwrite insurance policies “ (Cara et al, 2000). The consolidation of commercial banking which is the single largest component of the financial services industry in 1980's saw banking organizations in the U.S drop considerably from 12, 300 to 6,600 in 2001.

The Nigerian financial system includes financial markets (money and capital markets), financial institutions including the regulatory and supervisory authorities, development finance institutions (Urban Development Bank, Nigerian Agricultural and Rural Cooperatives bank) and other finance institutions (insurance companies, pension funds, finance companies, Bureau de change, and Primary Mortgage Institutions), among others. It also offers financial instruments (e.g. treasury bills, treasury certificates, central bank certificates), The structure of the Nigerian Financial System has been through remarkable changes, ranging from their ownership structure, the length and breadth of financial instruments used to the number of institutions established, regulatory and supervisory frameworks as well as the overall macroeconomic environment within which they operate. The Nigerian Financial System also consists of interrelationships among the persons and the bodies that make up the economy. Commercial banks are the most relevant financial institutions in Nigeria to encourage and mobilize savings and also channel savings into productive investment units.

The Nigerian financial system consists of the formal sector (bank and non-bank financial institutions) and the informal sector (savings and loan association, local money lenders, etc.). The institutions are regulated by the

Central Bank of Nigeria (CBN), Federal Ministry of Finance, Nigeria Deposit Insurance Corporation (NDIC), Securities and Exchange Commission (SEC), the National Insurance Commission (NIC), and the Federal Mortgage Bank of Nigeria (FMBN). The informal sector is largely loosely organized without any form of formal regulation. To interpret the financial system and evaluate its performance requires an understanding of its functions in the economy. With reference to the allocation of resources and economic efficiency, the financial system performs three major functions, which are vital to economic growth and development. First, the system provides convenient and efficient payments system without which specialization in production, so vital to productivity improvements would be greatly impeded. Secondly, the financial system pools savings from net surplus units and channels them to productive investment.

The banking system in Nigeria has since independence undergone radical changes. Banking in Nigeria developed from an industry, which at the time of independence in 1960 was essentially dominated by a small number of foreign banks into one in which the public sector ownership of banks predominated in the 1970s and 1980s; and in which the Nigerian private investors have played an increasingly important role since the mid-1980s. The banking industry also went through phases of regulation and deregulation. In the 1960s, extensive government intervention characterized the financial sector. This was intensified in the 1970s. The objective was to influence the efficiency of resource allocation and promote indigenization. Since the adoption of the Structural Adjustment Program (SAP) in 1986, the financial sector has been liberalized and measures have been put in place to enhance prudential guidelines and tackle bank distress. The different licensed banks in Nigeria fall into different generations. These “generations” of banks fall into the five phases of bank licensing.

- i. First generation: These were banks that were licensed before Nigeria's independence in 1960.
- ii. Second generation: These were banks licensed between 1960 and 1980.
- iii. Third generation: Banks licensed between 1980 and 1991 fall into this category
- iv. Fourth generation: These were banks licensed from 1998 to 2005.
- v. Fifth generation: These were banks licensed from 2005 till date (post-consolidation era).

Financial services were classified into six categories meanwhile eleven clusters of innovation were identified as exerting pressure on traditional business models (Mc Waters, R.J., Bruno G., Lee, A., Blake, M. 2015). According to the report the main elements of disruption (innovation clusters) are:

- i. Insurance: Insurance Disaggregation (sharing economy, autonomous vehicles, digital distribution, securitization and hedge funds) and Connected Insurance (internet of things, advanced sensors, wearable computers).
- ii. Deposits & Lending: Shifting customer preferences (virtual technologies, mobile 3.0, third-party API) and alternative lending (P2P lending, alternative adjudication).
- iii. Capital Raising: Crowdfunding (Virtual Exchanges and Smart Contracts, Alternative Due Diligence).
- iv. Investment Management: Process Externalization (Advanced algorithms, cloud computing, capability sharing, open source IT) and Empowered Investors (Automated advice and management, social trading and retail algorithmic trading).
- v. Market Provisioning: Smarter, Faster Machines (artificial intelligence/machine learning, machine readable news, social sentiment, big data) and New Market Platforms (market information platforms, automated data collection and analysis)
- vi. Payments: Cashless World (Integrated billing, mobile payments, streamlined payments) and Emerging Payment Rails (crypto currencies, P2P FX, mobile money)

Technological advancements have directly impacted the way in which financial services are delivered creating unprecedented and innovative changes. The dynamics between the disruptive combination of “Finance” and “Technology” elements is also known as Fintech. The use of technology within finance is far from being a new acquisition, however the explosion of new technologies in the last ten years are not only transforming markets but also our society. It is quite an arduous task giving a unique definition of fintech, as several varieties of the concept coexist in academic papers. It is important to note that all Fintech experts agree that it refers to companies that develop financial products and services by relying on much more intense use of information technology (Varga, 2017).

Gomber et al. (2017) defined Fintech as “a neologism which is derived from the words financial and technology and describes the connection of modern, and mainly Internet-related technologies with established business activities of the financial services industry”.

Arner et al., (2015) stated that Fintech could refer to all incumbent and new financial companies, regardless of their size, product portfolio or business model. Kim, et al. (2015) affirm instead that Fintech refers to firms that

not only use IT but which also focus on providing more efficient services and try to enter traditionally non-banking markets. On the other hand, Ernst & Young's (2016) implies that all firms can take part in the fintech revolution if they manage to build innovative business models and implement an adequate supporting technology.

The Financial Stability Board (BCBS, 2018), defines Fintech as: "technologically enabled financial innovations in financial services that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services". Overall, it's still difficult to pin clearly where the boundaries of this arising sector lie.

Therefore, any company, be it a traditional bank, a start-up firm or a technology giant, can enter the fintech sector by implementing new technologies for improving or disrupting the financial services or products that are currently offered by competitors.

The worldwide impact generated by fintech can be measured by numerous perspectives.

i. From a penetration perspective, the number of active fintech users has drastically increased since 2015 (Ernst and Young, 2017). According to Ernst and Young (2017) Fintech Adoption Index, in two years, the ratio of digital active consumers using fintech has augmented from one out of seven to one out of three. In other words, 33% of digitally active consumers around the world are customers of Fintech propositions. The top five countries with the highest fintech adoption rates are China (69%), India (52%), the UK (42%), Brazil (40%) and Australia (37%). Germany is ranked at the eighth place with a 35% rate in overall fintech adoption (Ernst & Young 2017).

ii. In terms of investment, the 2016 Accenture report on Fintech describes how global fintech financing activity increased from around two billion US Dollars in 2010 to 22 billion US Dollars in 2015 (Skan et al. 2016). During this period, North America took the first place in number of deals and total investment, followed by the Asia-Pacific region in second place, which saw fintech investments more than quadrupled in 2015. The European region observed a significant increase on fintech investments during 2015 and quickly caught up with third place globally (Skan et al. 2016). Results from the Accenture report were based on data from CB Insights. In 2016, funding activity for fintech increased especially in the APAC region, specifically in India, as a result of a demonetization activity from the Central Bank which consisted on a strategy against corruption by taking bank-notes of high-value out of the market. This created a more than fivefold increase in venture capital for Paytm, a fintech company that provided millions of Indians with an alternative to make their payment transactions through mobile payments and other providers of cashless service (Barreto 2018).

The creation of technologies for calculation, like the abacus, represent a comparable attempt to describe developments combining financial and technological tools (Arner et al. 2016). At the end of the Medieval Age and beginning of the Renaissance, Double Entry Accounting was introduced and still constitutes one of the greatest pillars to modern economy (Littleton, 2002). In trade, currencies were originally backed by the value of a commodity like silver or gold until this value was decoupled through the introduction of Fiat currencies (Arner et al. 2016).

To understand the evolution of fintech, Arner et Al. (2016) grouped important historic events into three principal eras:

- i. Fintech 1.0 which encompasses developments within the period from 1866 to 1967,
- ii. Fintech 2.0 from 1967-2008 and finally;
- iii. Fintech 3.0 starting from 2008 and onwards (Arner et al. 2016).

The Fintech 1.0 period witnessed financial solutions being functionated mainly in an analogue way. In this era, the first period of financial globalization took place at the end of the nineteenth century and lasted until World War I with technological developments (canals, railroads, telegraph, etc.) paving the path towards speedier transmission of transactions and financial information (Arner et al. 2016).

There was a period of stagnation for the financial industry when the war was over, but the technological discoveries that resulted from the conflict continued to develop, especially for the communications and information technology sectors. Notably, as early as in 1918, the Fedwire Funds Service was created and implemented by the Reserve Banks in the United States and connected the Treasury Department, the Board and twelve Reserve Banks through a Morsecode system that allowed the transferring of funds between them (Gilbert 1997). This period also saw the development of code-breaking tools into the first computers by the company IBM

(Arner et al. 2016) and the introduction to Credit Cards by Diner's Club, Bank of America and American Express in the 1950's (Markham 2002) which created a transformational phenomenon for the experience of consumers and led to the foundation of Mastercard - a leading multinational financial franchise- in 1966 (previously known as the Interbank Card Association) (Mandell, 1990). By this time, the Telex network was already converting messages into signals and transmitting them by electricity or radio waves for the message to be printed out at a location different than the original (Coopersmith, 2015; Arner et al. 2017) and along came the first commercial version, the fax machine (Coopersmith 2015).

In 1967, two events marked the beginning of the Fintech 2.0 era, regarding Arner's classification: the first ATM was placed in the United Kingdom by Barclay's and the first hand-held financial calculator was produced and distributed by the company Texas Instruments (Arner et al. 2016).

The Fintech 2.0 period was known for the transformation of financial services from an analog to a digital industry through key developments that represented the pillars for the second period of financial globalization. The industry of finance had already reached a high level of globalization and digitalization within this period. The traditional and regulated financial industry had a dominant position in providing products and services to customers through financial technology (fintech) (Arner et al., 2016).

In 1968, the grounds for the current Banker's Automated Clearing Services (BACS) were grounded by the establishment of the Inter-Computer Bureau (Welch 1999) in the United Kingdom. Later on, in 1970, the Clearing House Interbank Payments System (CHIPS) was founded in the United States (Payment Systems: Central Bank Roles Vary, but Goals Are the Same: GAO-02-303) and on that same year, the previously mentioned Fedwire System migrated completely from telegraphic to an electronic system (Gilbert 1997). In the mid-1970's, a global telecom network was put into march with the purpose of making the process of money transfers more efficient and secure (Gomber et al. 2018).

This important development for international banking communication was established by the Society for Worldwide Interbank Financial Telecommunication (SWIFT) and has allowed financial institutions ever since to exchange details about financial transactions in a secure environment. An event in the year 1974 acted as the trigger for emphasizing the risks that arise from international financial networks, especially through the newly developed payments system. As a result of the bankruptcy of the Herstatt Bank in Cologne and the increasing use of new technologies and practices in the financial area, the focus was placed on the need to regulate this sector through international soft law agreements for robust payment systems. This incident led to the creation of the Basel Committee on Banking Supervision.

Currently, the global foreign exchange market – which functions as a combination of finance, technology and regulation- constitutes the most globalized and digitalized element of the economy with US posing \$ 5 trillion a day in transactions (Arner et al., 2017).

The NASDAQ stock exchange was established in 1971. And, with the development of the National Market System in the United States, this timeframe marked the transition from physical to electronic trading of securities (National Association of Securities Dealers, 1987) In the early 1980's, online banking was originally introduced to the consumer sector in both the United States and United Kingdom (Arner et al. 2016; Watson 2018). Another very early example of Fintech innovation is the creation of Innovation Market Solutions (IMS) by Michael Bloomberg in 1981 (renamed Bloomberg L.P in 1986) which provides market data and other financial analytics in real-time. After only three years later, the financial industry was adopting Bloomberg terminals at an increasingly fast-pace. This period saw the steady replacement of paper-based mechanisms by the implementation of numerous IT developments for back-office and external operations (Arner et al. 2016).

In 1987, incumbents became increasingly aware of the importance of regulation within interconnected world markets as an effect of the worldwide stock market crash also known as "Black Monday", which is still recognized as the largest one-day percentage decline in the Dow Jones Index (Nicoletti). This occurrence encouraged the implementation of several control mechanisms in relation to the speed of price changes (e.g. circuit breakers) and mechanisms that encouraged an increased amount of cooperation between bank regulators regarding cross-border issue (Nicoletti). Moreover, numerous financial Regulations and Directives that surged during the late 1980's to the beginning of the 1990's (e.g. the Single European Act -1986, Big Bang Process - 1986, Maastricht Treaty -1992) constituted the pillars for the complete interconnection of EU markets by the early 21<sup>st</sup> century (Arner et al. 2016). Moving on to a decade later, financial services were already part of a digital industry by large in 1998. In this year, the limits and risks of computerized risk management systems were tested during the Asian and Russian financial crises, with the collapse of numerous Long-Term Capital Management systems (Arner et al. 2016; Nicoletti).

Nevertheless, the turning point for the marriage between financial and technological solutions was around this time. Wells Fargo was the pioneer in offering online account checking in the mid-nineties using the World Wide Web (Arner et al. 2016; Nicoletti). This innovation opened the door to a whole new era of financial products and services not only to US-based banks, but banks all over the world. By the beginning of the new millennium,

major global players were already offering similar systems and the customer database for eight major banks in the United States was over one million users per bank (Arner et al. 2016).

In the United Kingdom, the first banks without physical branches appeared in 2005 (e.g., ING Direct, etc.). Banks' internal processes became fully digitalized during the early-2000's and emphasis was placed on the amount of IT expenditure by the financial industry (Arner et al. 2016). A shift regarding the ruling actors has taken place since 2008, marking the beginning of the Fintech 3.0 era as per Arner et al.'s classification. The main characteristic of this timeframe is that the offer of financial products and services through technology to companies and the public in general is no longer restricted to traditional financial providers or in other words, banks. Instead, new established technology firms and start-ups are positioning themselves as top financial services providers in the industry. (Arner et al. 2016). For example, in 2009 the first version of the Bitcoin cryptocurrency was released and in 2013, the Google Wallet was launched allowing users to purchase through their mobile phones using Near-Field- Communication (NFC) technology (Arner et al. 2017; Watson 2018). Whereas determining the origins of this trend is not an easy task, research shows that it might be possible to show that the Global Financial Crisis from 2008 and the alignment of market conditions that resulted from it, characterized a turning point for the expansion of this era (Arner et al. 2016; Nicoletti). Some of the factors that possibly acted as triggers for the Fintech 3.0 era were: the public's perception, economic determinants and increased supervision by regulators. In terms of human capital, approximately 8.7 million workers lost their jobs in the United States (Arner et al. 2016) and in the public's eye, the reputation of banks deteriorated after the obligations towards protecting consumers were found to have several breaches. This led to two outcomes: increased distrust in the traditional banking system and increased unemployment of professionals from the financial area (Arner et al. 2016; Nicoletti and Watson, 2018). These occurrences built the foundations for a new industry denominated "Fintech 3.0" by Arner et al. or also known as "The Fintech Revolution" nowadays. The experienced financial professionals that led the steps towards this phenomenon were also joined by new graduates facing a tough job market, but with the skills and abilities to understand the newly formed industry. Another post-2008 factor that triggered the Fintech phenomenon from recent years was the reshaping of business models and banking structures caused by increased regulatory capital and obligations (e.g. Basel III, etc.) (Arner et al. 2016).

These reforms echoed a call for new players into the field unintentionally. On one hand, banks identified the rise of new players, on the other hand, banks' own ability to compete was reduced as a result of the established regulations. For instance, the main objective of one of the main global regulations (Basel III) aimed to ensure risk-absorbing capacity and market-stability, leading to increased capital requirements. This also meant that capital was not focused on SMEs and individuals who then had to look for alternative solutions to fulfill their need for credit (Konovalova and Trubnikova).

Financial technology has been around for quite some time in the form of automated teller machines and mobile phone transactions, however, in more recent times, it has been transformed by the internet—a new delivery channel that has facilitated banking transactions for both customers and banks (Moddibo, 2018). The scope of offered services offered by financial technology may include facilities to conduct bank transactions, to administer accounts and to access customized information. In the broader sense financial technology enables the execution of financial services in the course of which— within a technological procedure the customer uses communication techniques in conjunction with telecommunication devices.

- i. Automated Teller Machine (ATM) ATM is a machine where cash withdrawal and deposits can be made over the machine without going into the banking hall. It also provides other quick teller services including airtime purchase, funds transfer, balance enquiry and bills payment, among others. These machines usually operate 24 hours/7 days and may be accessed with or without a card Al-Sukkar, (2005)
- ii. Point-of-Sale (POS) POS also referred to as point of purchase (POP) or checkout is the location where payment is made in respect of a transaction an electronic device and card. A POS terminal manages the selling process by a salesperson accessible interface (Chitokwindo, 2014). The same system allows the creation and printing of the receipt.

POS systems record sales for business and tax purposes. Chitokwindo, (2014) however noted that an illegal software dubbed "zappers" is increasingly used on them to falsify these records with a view to evading the payment of taxes. iii. Internet Banking Internet banking allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution, which can be a retail or virtual bank, credit union or society. It also referred to as on-line banking. Banks increasingly operate websites and transaction portals through which customers are able not only to inquire about account balances, interest and exchange rates but also to conduct a range of transactions. Internet banking however is prone to internet fraudsters and hackers if carried out over an unsafe platform Alabar, (2012). Internet banking extends the opportunity to create another

alternative method of banking beyond the bank branch and ATM network through which vast section of the population, including people who live in remote areas, will have easier and faster access to formal financial services Abid & Noreen, (2006). Thus, internet banking, is simply defined as carrying out banking transactions via mobile devices such as cell phones or personal digital assistant(s). The offered services may include transaction facilities such as checking account balances, transferring funds and accessing other banking products and services from anywhere, at any time as well as other related services that cater primarily for financial information and communication needs revolving around bank activities Ensor, Montez & Wannemacher, (2012). According to World Bank (2010), internet banking refers to a system which enables people to conduct financial transactions using a mobile device against a bank account accessible from that device. Since, compared to traditional banking, with the internet banking system, an account holder can conduct banking transactions without visiting a bank branch, thus it increases the efficiency of the individual account holder by saving time as well as eliminating space shortcomings

Sanusi, 2010; Ahmed, Rayhman, Islam & Mahjabin, 2011). According to the central bank of Bangladesh, "Mobile Financial Services (MFS) is an approach to offering financial and banking services via internet wireless networks which enables for user to execute banking transactions. That is, any internet account holder can make deposits, withdraw, and to send or receive funds from their internet account.

SME is an acronym that stands for small and medium scale enterprises. Small and medium-sized enterprises (SMEs) are non-subsidiary, independent firms which employ less than a given number of employees. This is because different countries and different continents have different criteria for classifying an SME.

The acronym 'SME' is often used by the European Union and such international organizations such as the World Bank, the United Nations and the World Trade Organization. Small enterprises outnumber large companies by a wide margin and also employ many more people. SMEs are defined by the European Commission as having less than 250 persons employed. They should also have an annual turnover of up to EUR 50 million, or a balance sheet total of no more than EUR 43 million (Commission Recommendation of 6 May 2003).

Although Small and Medium-sized Enterprises play a vital role in every country economic growth and development, there is no generally accepted definition for SMEs. Different countries, agencies and institutions have defined SMEs differently to suite their own concepts and operations. Authorities and scholars of this subject define SME on the basis of size of business, capital assets, working capital, number of employees and turnover. Among these definitions (World Bank, International Monetary Fund (IMF), African Development Bank (AFDB), Asian Development Bank, European Union (EU) and many others) the most widely used is the European Union definition (Gibson & Vart 2008). The EU defines SMEs in terms of employee size, turnover and/or total balance sheet (European Union 2003).

The contribution to an economy by SMEs is not limited to developing countries, where rare financial resources curb the size of enterprises, but also in developed economies, including leading economies of the world such as the U.S., Japan, and Europe. SMEs play a more important role in developing economies. Studies on SMEs in developing countries show that SMEs have greater economic benefits than large firms in terms of employment generation and growth (Hallberg, 1999). SMEs are flexible in adapting to local needs, technology and available resources. They are more efficient than large enterprises in terms of capital investment per job created. SMEs usually use unskilled workers whose supply is in excess in developing countries. By creating employment opportunities for the unskilled labour, they could increase income and reduce poverty in those countries. Therefore, development of SMEs is believed to be a way to transform the structure of the economy to support growth and reduce poverty in developing countries. Thus promoting the development of SMEs has often become a popular development strategy in developing countries.

For transition economies, where market-based economies are being built upon the legacy of centrally planned economies, SMEs play the key role. In economic development, there are two factors that dominate the development of an economy - labour and capital. With abundant labour resources and lack of capital, it is a straight logic that a developing economy's performance will be better off if an adequate share of its resources is used for technologies of medium capital intensity. They should not invest all of their capital to few workers working in modern capital-intensive industries.

In Nigeria for instance, an SME is defined based on the staff strength and the asset base of the organization. SMEs are vital to achieving decent and productive employment as they globally account for two thirds of all jobs and also create the majority of new jobs. For developing countries SME's account for 90 % of all firms outside the agricultural sector, drive employment as well as serve as machinery for generating both local and foreign revenue.

(OECD report 2004.). SMEs form the basis and foundation for national development and economic growth.

SMEs should receive full backing and legal protection and stimulus from the government in order to sustain economic drive and development which in turn will help to create more jobs and also help to drive investment into the economy as well as help the government to generate funds through tax policies and other levies.

The importance of SMEs in the development of national economies makes public policies supporting their development necessary. Public policies facilitating the development of SMEs are usually more microeconomic in their nature, helping SMEs to build up their competitiveness and efficiency. Exporting promotion through marketing and providing information is one of the policies conducted by governments to promote development by SMEs. Technology upgrading and technology supplying is also aimed at by public policies. Besides, access to credit, vocational training for workers, specially designed training for entrepreneurs and support for inter-firm cooperation involving SMEs or taking advantage of economies of scale are mostly used by policy-makers worldwide.

A macroeconomic policy that is usually concerned by economists in facilitating the development of SMEs is exchange rate management. SMEs are usually sensitive to the external shocks and do not have large reserves. Therefore, guarding against external shocks to affect SMEs is a task of the government.

The importance of SMEs in the development of national economies also makes researchers pay more attention on their performance. The number of studies on productivity, both total factor productivity and partial productivity of labour, on innovation, growth, technology progress and technical efficiency of SMEs, increases rapidly. Studies on the impact of the operating environment and governmental supporting policies on performance of SMEs are also encouraged and received large attention by researchers.

In European Union economy, 99.8% equivalent to 17.9 million businesses constitutes of Small and Medium Enterprises (SME). This sector has continued to be a major contributor towards the economy growth of the country with over 66% contributed through exports. This contributes to over 70% in the workforce and 56.2% of its private segment turnover (Duarte & Martins, 2016). Research has indicated that capital structure is an essential influence in contributing to the development of small firms (Brown, et al., 2008). Towards the end of 2015, United Kingdom (UK) Small and Medium Enterprises (SMEs) had about £50.9 billion worth of stock on their accounting report (ABFA, 2015).

This amount shows that investment in stock is substantial for UK SMEs. In developed countries, most of the economies are driven by strong SMEs. For instance, out of 5.5 million private businesses in UK, SMEs accounted for 99.9% (5,490,470) which employed 60% of the work force (15.7 million people) while 0.1% (7,200) represented large corporations and employed 40% being 10.5 million people. In Germany, two-thirds of workers are employed by SMEs. Asian countries which are newly industrialized, SMEs have become the driving force of rapid economic growth.

In South Korea 99% of all enterprise is comprised of SMEs of which 88% of the work force is employed by the sector. Some of the renowned 10 brand names like Samsung, LG started as SMEs and due to support from the country governments and embrace of technology resulting to innovations, the SMEs grew to world largest companies. The above examples clearly indicate the importance of SMEs to the growth and development process. Hence developing countries should borrow a leaf from the developed countries in promoting growth of SMEs (Otero and Rhyne, 1994).

Though African countries are yet to match the developed countries in number of SMEs, their growth and potential, they have continued to play a substantial role in the macro economy.

South Africa one of the power house in Africa, SMEs contributed approximately 42% of GDP and accounts for 60% employment. They also provide incubator and breeding ground or entrepreneurship and innovation (Stats SA 2015). According to Machirori & Fatoki (2015), large companies and the public sector have not been able to resolve major economic crises, hence the need for SMEs. McCormick & Pedersen (1996) pointed out that the civil war in the Democratic Republic of the Congo led to the bankruptcy and cessation of most SMEs in the region. In Nigeria, SMEs have continued to thrive considering the support received from the government, in terms of enabling business environment, marketing for the products (Buy Naija to Make Naira grow initiative), funding through Micro small and medium enterprises authority (SMEA).

This has enhanced greater integration into global market, where the SMEs are able to participate in the international value chain and supply chain networks. Small and Medium Enterprises that are making use of technology and knowledge to innovate and develop high value added products of good quality, will keep on competing globally as per (Gok, 2007). Most governments in developing countries have continued to emphasize on importance of the SMEs in steering economic growth, since large projects in industrial sector which require high capital intensity of output in the sector, are less likely to generate requisite employment. However, SMEs has continued to face several impediments which threaten their growth especially in developing countries. For instance, Hallberg (1999) established that, strong presence of Asian SMEs in Africa has continued to threaten growth of local SMEs.

Other factors which has led to slow growth of SMEs in Africa may include but not limited to lack of adequate financing (Ngugi and Bwisa, 2013) in terms of long term finance either as a debt or equity (MeyerStamer and Waltring, 2004). Poor managerial and governance systems have been key hindrance for the SMEs to attract financing (Dockel and Ligthelm, 2005). Small and medium enterprises (SMEs) are regularly identified as one of the most significant methodologies for upgrading the livelihoods of people in Rwanda as stated by Kanuma and Mutandwa (2015). Aside from expanding per capita income and yield or output, SMEs create job opportunities, improves regional economic balance through industrial dispersal and by and large advance effective resource or asset utilization considered critical in steering economic development.

In Nigeria, Kithae, Gakure and Munyao (2012) explain that SMEs play a critical role in achieving the broad goals set out in the 2030 vision and are critical drivers for making Nigeria a developed nation with an improved quality of life for its citizens. Mulwa (2014) indicated that the small and medium size businesses present the most unique financial establishment for growth, income and job creation. According to Kithae (2012), Nigeria employs approximately 18 percent of GDP and 80 percent of the working population in the SME market. It is assumed that SMEs obviously supply goods and services to a greater number of individuals at equal prices, jobs and incomes (Kauffmann, 2006). Effect of FinTech on growth of SMEs in Nigeria Country would be measured in terms of usage of mobile money systems, online banking and access to digital lending as key derivatives.

Moreover, in a country like Nigeria with an adverse Balance of payment situation, the growing contribution of the small-scale industries sector in Nigeria's export portfolio goes a long way in generating foreign exchange and smoothening out the adverse balanced of payment situation. This is important to the economy in that large percentage of their production inputs are sourced locally thus, reducing the pressure on the limited foreign exchange earnings and helping to eliminate some of the deficit in the balance of payment. According to Ikherehon (2002), SMEs constitute the very basis of the national economy in terms of development of local technology, stimulation of indigenous entrepreneurship, mobilization and utilization of domestic savings, employment creation, structural balancing of large and small industry sectors in both rural and urban areas, supply of high quality intermediate products thereby strengthening the international competitiveness of manufacturer's goods, stimulate technological development and innovations, provide the capacity to expand export possibility and substitute import effectively. Discovery has also shown that the expected role contribution by the large scale enterprise to the economy in terms of improvement in the GDP, employment generation, increasing local value added, technological development among others are been resolved by SMEs (Nwoye, 2010).

Fintechs provide a new method for SMEs to avoid traditional banking and financial management by creating easy-to-use technologies. Fintech can facilitate SME lending, making it easier for SMEs to receive capital investments.

More than half of SME credit applications are currently abandoned, either because they are rejected or because they are too complicated. By providing simple business lending for SMEs, fintech can help SMEs with the capital investment they need for expansion or to keep their operation afloat.

The problems related to traditional business lending for SMEs have only gotten worse during the coronavirus pandemic, but thankfully fintech has stepped up to fill the void.

In 2017, fintech companies focused on SMEs provided \$6.5 billion worth of loans for small businesses, and that number has only grown since then. According to the International Finance Corporation, there is a \$5.2 trillion gap between funding and funding needs for SMEs. If fintech can provide even a fraction of that SME lending, that is incredibly important. They provide SME lending in two primary ways: facilitating loans and crowdfunding.

Fintech can make it incredibly easy for SMEs to get small business loans from existing lenders. They also create marketplace of crowdfunding resources, which allows consumers to directly invest in startups.

There are also a variety of services fintech can provide for SMEs. In recent years, apps have revolutionized mobile and in-shop payments, allowing SMEs to avoid using traditional financial services.

Fintech has also provided targeted and data-driven marketing at a much lower price than was previously possible. Fintech has made it easier to file the paperwork necessary to start a company and has created accounting software that allows SMEs to save on personnel.

The modern economy moves fast, and the dynamism of SMEs combined with the efficiency of fintech is going to make them the dynamic duo of the future.

Currently, the IMF describes fintech activities as "less developed in Europe than in other regions," although they admit there have been challenges when it comes to data collection. Their primary issue regarding data collection comes from the fragmentation of the data they are collecting, as there is "no comprehensive source for fintech data".

In 2017, only 3% of global fintech lending was taking place in Europe, with more than half of those loans taking place in the UK. However, fintech business lending grew by over 40% in European countries outside the United Kingdom in 2017.



Europe provides a lot of potential for fintech due to high levels of connectivity and internet access. Because so many SME owners have access to the internet, smartphones, and computers, there is a large amount of possibility for people who want to use fintech to help their businesses.

Fintechs can provide serious competition to traditional lenders because of their adaptability and lack of bureaucracy and their ability to reach more SMEs through technology.

Europe accounts for a third of global non-cash payments, meaning fintech focused on processing payments has a large potential market in Europe. Most non-cash payments are still processed through traditional banking institutions, but fintech could grow considerably in that area.

We still do not have very much data from after the beginning of the coronavirus pandemic. However, fintech payments may have seen an uptick in use after SMEs who were previously cash-only may have switched to fintech payment options.

Fintech can greatly improve the efficiency at which SMEs operate. Beyond the services listed above, it can help connect SMEs and potential clients or customers more efficiently. This ability can save companies money on advertisement and promotion and can also help consumers find goods and services they want more easily.

It can also help facilitate e-commerce, allowing companies to operate without the need for traditional brick-and-mortar stores. This change will allow more new small businesses to open up and will drastically decrease their overhead.

Going forward, fintech is going to be a great resource for SMEs. Fintech's flexibility and dynamism match the needs of the modern economy. Small and medium enterprises loan applications are often either rejected or not completed, and fintech can help fill this gap.

Currently, fintech lending is still rare in Europe, especially outside of the UK, but due to Europe's connectivity and internet access, fintech and SME could be the dynamic duo of the future.

The chapter is a review of various literature in order to identify literature gaps that the study attempts to fill. The researcher primarily focuses on literature concerning what various researchers and authors have said about the effects of FinTech on the growth of small and medium enterprises (SMEs), the types of FinTech used by SMEs, and whether it contributed to their growth. The chapter covered the theoretical literature review, the empirical literature review, and the study's conceptual framework.

## **THEORETICAL LITERATURE REVIEW**

Scholars have developed various theories; This study would be guided by four theories that suggest the effect of FinTech on the growth of SMEs. Theories help to understand the study as they provide the framework for the investigation.

## **FINTECH BUSINESS MODELS THEORY**

Wambari and Mwaura (2009) argue that any mobile / branchless banking model that aims to attract low-income people depends on banking agents, that is, outlets that conduct financial transactions on the behavior of financial institutions. They argue that agent banking is an important part of the fintech business model, which tends to be the link between banks and their clients. New fintech business models tend to result in new market structures for the supply of existing financial services products (savings, loans, business transactions). The theory of banking business models divides branchless banking into three models; Bank-Forced model, bank-led model, non-bank-led model.

## **BANK –FOCUSED MODEL**

This model arises when a traditional bank uses low-cost, non-traditional delivery channels to offer banking services to its existing customers (Infogile, 2007). In this model, the technological / physical infrastructure of a mobile operator / retailer is used to provide some basic banking services, such as account balance inquiry, transfer from air conditioning to air conditioning, payments for goods / services in business transactions through a bank account (via ATM / debit card / SMS phone). Most of these services are already provided by banks and are subject to existing regulations. Therefore, this model raises few specific regulatory questions (Infogile, 2007).

## **BANK –LED MODEL**

According to Ratha., Sanket and Vijayalakshmi, (2009), this model offers a clear alternative to traditional banking at the branch, since the client carries out financial transactions through a variety of retail agents (or via mobile phones) instead of through bank branches. or bank employees. This model promises the potential to significantly increase the reach of financial services by using a different delivery channel (retail / cell phone), another experienced business partner (telecom / chain) and target market that is different from traditional banks. , and can be significantly cheaper than banking alternatives.

The model operated by a bank can be implemented through correspondence agreements or by creating a

partnership between the bank and telecommunications / non-bank companies (Infogile, 2007). In this model, there is a customer account relationship with the bank. Therefore, this model is prone to agent-related risks. However, these agent-related risks can be mitigated by holding banks fully accountable for the actions of their agents and by empowering regulators to review agent records of bank-related transactions.

### **NON- BANK LED MODEL**

With this model, customers have nothing to do with a bank, nor do they have a bank account. Instead, customers work with a non-bank company, be it a cellular network operator or a prepaid card issuer, and commercial agents act as customer contacts (Infogile, 2007). This is where the bank does not come into play (except possibly as custodian of surplus funds) and the non-bank entity (eg Telco) takes over all functions. Customers exchange their cash for money that is stored in a virtual money account on the server of the non-bank entity that is not linked to a bank account in the person's name. This model is riskier because the regulatory environment in which these non-banks operate does not place reasonable weight on issues related to customer identification, which can create significant risk. Furthermore, non-banking entities are not highly regulated in areas of transparent documentation and records, which are a prerequisite for a secure financial system.

### **FINTECH BUSINESS MODEL EXAMPLES**

Fintech business models use technology and digital technology to fuel the financial services industry. Thus, Fintech business models apply technology to various financial services use cases. Examples of Fintech business models are Flutterwave, Chime, Coinbase, Klarna, Paypal, Stripe, Robinhood and many others with a mission to digitize the financial services industry.

Some use cases include:

#### **DIGITAL BANKING**

Fintech companies offer private and commercial bank accounts based on a complete digital infrastructure. Although this model is more or less similar to that of a traditional banking institution, fintech companies save money by having to maintain physical branches. Part of this savings is passed on to the customer. Importantly, companies like Flutterwave, Kuda, and Paystack are bringing simple digital banking to the Nigerian market with elegant design and better customer experiences.

#### **ALTERNATIVE CREDIT SCORE**

SMEs tend to find it difficult to obtain financing from traditional lenders. To some extent, this trend has been compounded by the concert economy and the growing popularity of entrepreneurship.

Instead of strict credit checks, fintech companies use social signal data in conjunction with artificial intelligence algorithms to more accurately assess an applicant's credit worthiness.

#### **UNBUNDLING**

Most traditional financial institutions offer a range of combined products and services, including investment banking, insurance, auto loans, home loans, and credit cards.

Fintech companies are questioning the status quo by becoming specialists in only a select few services. This applies in particular to fintech startups, which, due to their limited range of products, can focus more effectively on adding value.

#### **DEMOGRAPHIC PRODUCTS**

Some fintech companies create products based on the specific demographics of their target audience. For example, True Link Financial provides fraud protection for older clients. Camino Financial offers loans to Latino-owned small and medium businesses. Brex is a service for startups, e-commerce companies, and other smaller businesses.

#### **DIFFERENT FEE STRUCTURES**

Robinhood is an investment app that offers free stock trading. Instead, the company makes money by selling retail orders.

Wise (formerly TransferWise) offers the mid-market rate for consumers looking to send money abroad. Its fee structure is based on transparent transaction fees and uses economies of scale.

Building on a low-cost digital infrastructure, many neobanks were able to make a profit with deposit and debit brokerage. These are options that would not be economical for a traditional banking institution.

### INSURTECH

Many insurance companies are switching to the fintech business model “Insurtech”, a suitcase made up of insurance and technology.

This model uses artificial intelligence, data analytics and blockchain to help companies sell insurance through virtual branches and handle claims more efficiently. It also has important uses in sales, sales, underwriting, and lead management.

### TECHNOLOGY ACCEPTANCE MODEL (TAM)

In the case of fintech initiatives, it is interesting to analyze a model developed in the past to evaluate the acceptance of new solutions (Technology Acceptance Model; TAM) (Davis 1989). Several recent studies have adopted this model to examine the adoption of the Internet and mobile-related technologies, such as mobile payments, digital insurance, and M-Commerce (Kim et al. 2016; Chen et al. 2016). The TAM rating is based on the premise that the fundamental determinants of the adoption and use of new technologies are

- Perceived Usefulness (PU), that is, the degree to which people believe that the use of a particular system improves their performance.

The measures of PU include performance increase, productivity increase, effectiveness, overall usefulness, timesaving, and increased job performance.

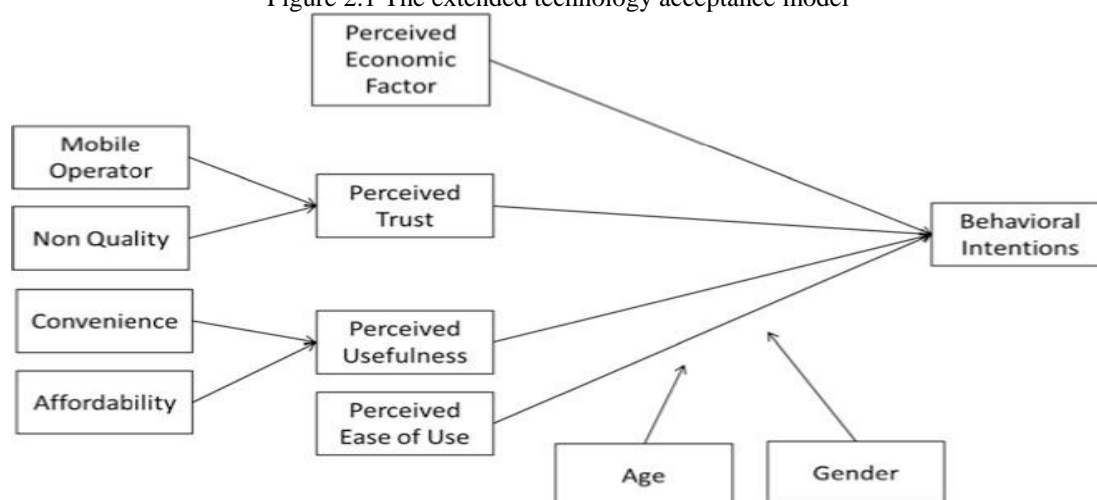
- Perceived Ease of Use (PEOU), d. H. the degree to which a person believes that using a particular system requires little effort. Measures for PEOU include ease of control, ease of use, simplicity, clarity, and flexibility of use. PEOU has a significant and direct impact on the intention of the uninsured to adopt digital insurance services.

These two beliefs create a positive attitude or intention about the use of a technology and consequently influence its use.

In fact, there are other factors to consider when considering digital insurance in relation to the base TAM. Despite the unique advantages of digital insurance, for example, overcoming trust issues is a major challenge for the introduction of digital insurance.

A complete model for TAM should include (Schierz et al. 2010; Nicoletti 2014a) see (Fig 2.1)

Figure 2.1 The extended technology acceptance model



- Behavioral intentions (BI), that is, the tendency to accept a new solution;
- Perceived economic factor (PEF) that has a significant and direct impact on the intention of the uninsured to use digital insurance services;
- PU that has a significant and direct impact on the client's intention to adopt digital insurance services.

It is determined by the level of convenience (CON) and affordability (AFF) that result from digital insurance services;

- Perceived Trust (PT), which has a direct and significant impact on the intention of the uninsured parties to adopt digital insurance services;
- Age and sex of the uninsured, which affects their perception of the usability of digital insurance services;
- Characteristics of the Mobile network operator (MNO); and
- The non-quality (NQ) of the service provided.

As a research model, this study used TAM and considered factors such as accessibility, low cost, and safety. By demonstrating how small business owners have incorporated modern technology into the management of their business, this theory is central to the analysis. This is especially true when small businesses use financial technology in their monetary transactions, which enables faster, more secure and more accessible cash transactions. Moreover, it is not enough for SMEs to develop innovative technologies, but they must be accepted and adopted by owners and customers. The researcher used this theory to determine whether SME entrepreneurs in the country of Nigeria have embraced and embraced the use of Fintech in the conduct of their business operations. The study found that over 90% of SME entrepreneurs accepted the use of FinTech in the form of 94% mobile money, 90% digital loans and 87% mobile banking to conduct their business transactions.

#### **UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)**

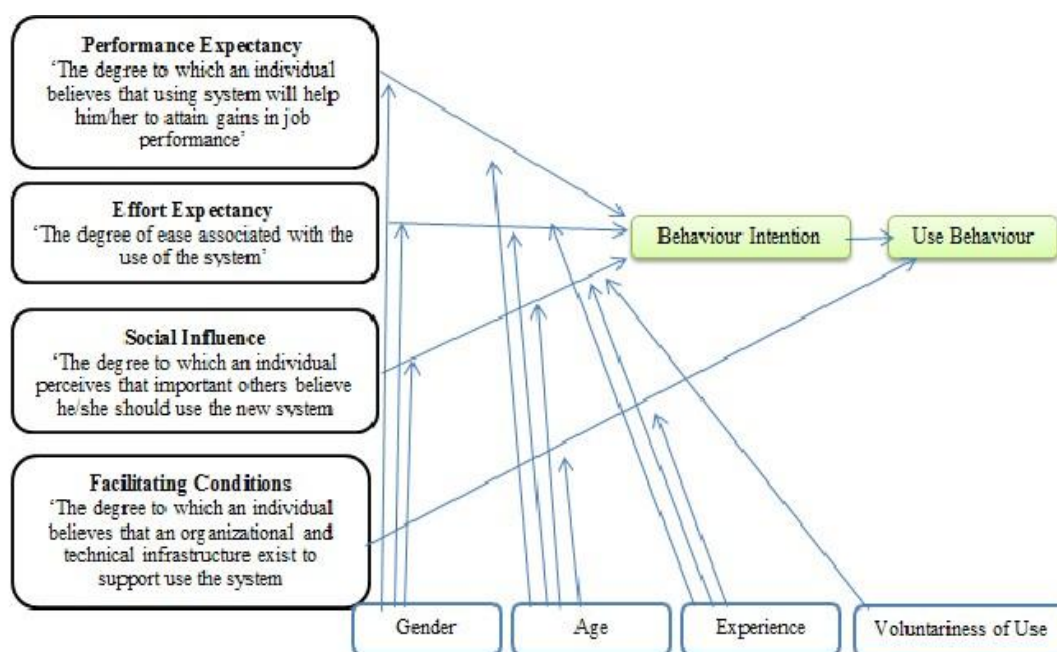
UTAUT model, first developed by Dr. Visvanath Venkatesh, Michael G. Morris, Gordon B. Davies, Fred D. Davis and published in a journal entitled "Information Technology User Acceptance: Towards a Unified Vision" (Unified Theory of Acceptance and Use of Technology) (UTAUT) "2003 is believed to provide a more comprehensive overview when compared to previous models of technology introduction. This is because the UTAUT model has synthesized some key variables from 8 (eight) different introductory models into a technology adoption model. Venkatesh develops and enriches the UTAUT model in the UTAUT 2 model, whereby the UTAUT 2 model is very well suited to investigate the adoption of technologies that are directly related to consumer products. As Venkatesh, Tong and Xu illustrated in MIS Quarterly Magazine with the title "Consumer Acceptance and Use of Technology: Extending the Unified Theory of Acceptance and Use of Technology" in 2012, Venkatesh et al. 2012, in which Venkatesh examined the introduction of the mobile Internet in Hong Kong as a study object using the UTAUT2 model.

UTAUT integrated eight theories including the TAM, IDT, the Reasoned Action Theory (TRA), the motivational model, the planned behavior theory (TPB), a model that combines TAM and TPB, the PC usage model, and the social cognitive theory. (SCT). With an empirical analysis, Venkatesh et al. (2003) found that performance expectation; The expectation of exertion, social influence, and facilitating conditions are the main factors that determine user acceptance; among them, the performance expectancy is similar to the perceived benefit and relative advantage; the expected effort is similar to the perceived ease of use and complexity; social influence is similar to the subjective norm. Since its inception, UTAUT has been used to explain user adoption of a wide variety of information technologies, including location-based services (Xu and Gupta, 2009), mobile technologies (Park et al., 2007), mobile banking (Zhou et al., 2010). ), Internet banking (Im et al., 2011) and health information technologies (Kijisanayotin et al., 2009) The UTAUT simplified the concepts of social influence presented in TAM2 and transferred some of the elements such as experience and voluntary use into background variables (moderating effects). Despite the criticism, Venkatesh et al. (2003) confirmed that UTAUT was conceptually able to map most of the eight separate models on which it was based. The results also agreed with previous research that expected performance (the equivalent of perceived usefulness) was the most important predictor of intent. The importance of social influence introduced in TAM2, with results similar to the previous study by Venkatesh and Davis (2000). Although the UTAUT model was a further improvement over TAM2, there were still clear limitations and even drawbacks that came with the added complexity that reported relate to the links to practice and the way the analysis was done:

According to Venkatesh et al. (2003) only used those research questions whose answers had more weight in the analysis of each of the central constructs (e.g. performance expectation, effort expectation, etc.). In one or more of the eight underlying models, various items were discarded due to their limited informative value, which led to a lower representativeness and validity of the results. In 2007, Bagozzi (2007) recognized the widespread use of the original Davis (1989) model and its subsequent expansions, but pointed out several shortcomings at the same time. One of the points he raised was the fact that the latest UTAUT revision adds so many variables that the whole model became difficult to use. A year later, van Raaij and Schepers (2008) further criticized the fact that by attempting to integrate several models into one, UTAUT actually became a complex system whose

individual constructs (especially social influence and facilitating conditions) were combinations of too many different factors and therefore were representative of none. They also claimed that 70% explanatory power can only be achieved by introducing the moderator elements, so the model was not inherently much better than TAM or TAM2, so van Raaij and Schepers (2008) ended up using a modified version of TAM2's UTAUT model as the basis for your own technology acceptance study. However, not all feedback has been as negative as shown above. Although Verdegem and Marez (2011) criticized the diversity of the overall TAM research, they praised the UTAUT model as robust and relevant in terms of merging the theory, and Riffai et al. (2012) summarized the features and criticisms of the technology acceptance theories. Due to the relatively low adoption rate of ICT, much attention has been paid to the earlier work of Venkatesh (2003, 2012) and Zohu (2011) in identifying the factors influencing the behavior of mobile users as an example of ICT.

Figure 2.2 Unified theory of acceptance and use of technology (Venkatesh et al., 2003)



**DEMAND AND SUPPLY SIDE TWIN THEORY**

The supply and demand side twin theory is a two-pillar model between financial inclusion and financial literacy (Chakrabarty, 2011). While financial inclusion works from the supply side by supplying the financial / services market with what people want, financial literacy stimulates the demand side and both aspects must exist and coexist in a growing inclusive economy. Gol(2007) noted that the development of the rural economy is essential for inclusive and equitable growth and for unlocking the vast potential of the population currently trapped in poverty and associated deprivation. According to Mehrotra et al (2009), there are supply-side and demand-side factors that drive integrative growth in the financial sector. Banks are expected to severely weaken supply-side processes that deny poor and disadvantaged social groups access to the financial system. On the demand side, factors such as low income or wealth ownership hinder financial inclusion. The lack of financial inclusion has left many SMEs dependent on personal savings or internal sources to finance their businesses. On the supply side, they are the key to unlocking this financial exclusivity and giving SMEs access to financial services. Most banks offer non-personalized financial products and services for the informal sector; Prevent technology (Simiyu, 2015). Financial inclusion channels focus on wearable devices. This theory is applicable in this study as financial institutions have developed fintech innovations that have opened up the financial market and created efficiency in financial transactions, where money transactions between SMEs and customers are faster and more efficient. in a profitable way, thereby promoting business growth. s from the extensive sales they make.

Despite the risk, start-up funding is essential for financial inclusion and growth. Supply-side factors, demand-side factors such as lower income and / or property ownership also have a significant impact on financial inclusion. Because of difficulties in accessing formal sources of credit, poor people and small and large businesses often rely on their personal savings or internal sources to invest in health, education, housing and business activities to take advantage of growth opportunities there is no doubt that demand for Products of the

formal financial sector need to be stimulated for excluded consumers. personalized products for the informal sector, rigid processes with complex and intensive documentation that deter the majority of the financially marginalized. Population, availability and acceptance of the technology, disclosure by available funding institutions. The study also notes that with an emphasis on handheld devices, although there are many last mile options for providing financial services, including kiosks, rural ATMs, etc. they have wireless connectivity, biometric readers for authentication of the receiver and micro printer. Account holders usually authenticate the SMEs through biometric validation based on their personal data recorded during registration. Devices usually connect using GPRS / CDMA / GSM radio protocols. Near field communication technology is also becoming increasingly popular.

### **DIFFUSION OF INNOVATION THEORY**

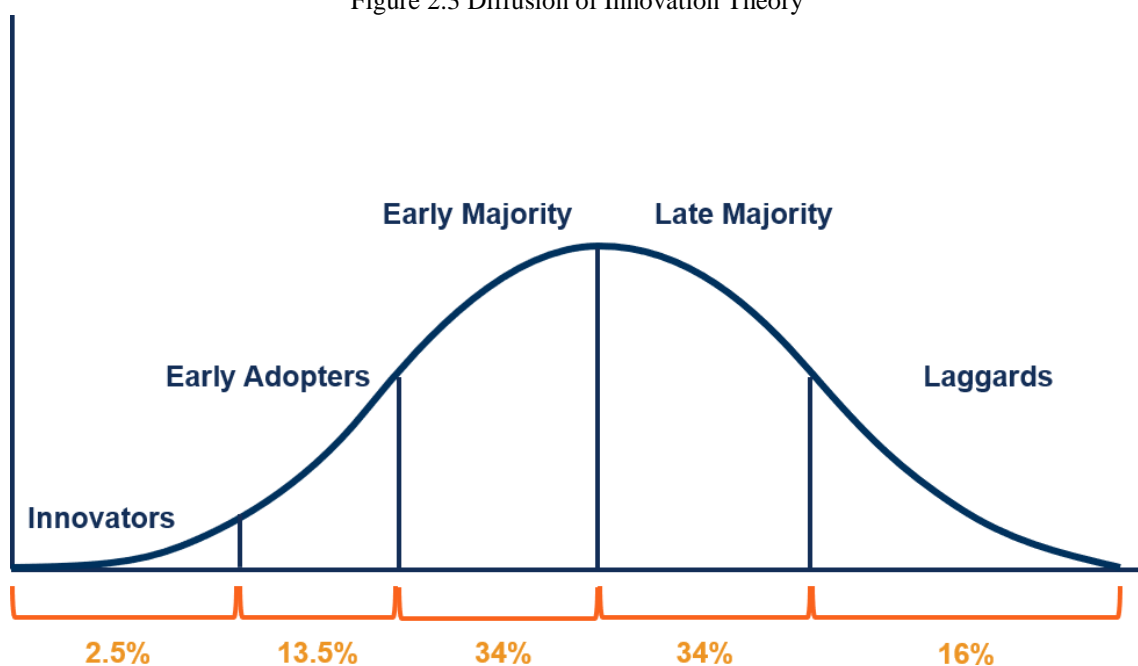
The diffusion theory of innovation (DOI) developed by E. M. Rogers in 1962 is one of the oldest social science theories. It originated in communication to explain how an idea or product gains momentum over time and spreads (or spreads) through a particular population or social system. The end result of this proliferation is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something different from what they previously did (i.e., buy or use a new product, acquire and perform a new behavior, etc. The key to adoption is that the person has the idea, behavior, or product as new or innovative, diffusion is possible. The new idea, the new behavior or the new product (i.e., "innovation") does not occur simultaneously in a social system, but is a process by which some people are more inclined to do so to accept innovations as others. Researchers have found that people who adopt an innovation early on have different characteristics than people who adopt an innovation later.

Innovation Diffusion examines the speed at which new developments spread, how new advances spread, and why they spread, to examine the variables that influence the selection of new data innovation development both through and through and through, 2011) The various elements that to be examined in this line are added to the work of both the company and the individual in adapting to the new innovation; This diffusion theory is relevant to the study as it explains why SMEs assemble technological innovations. it is the relevant advantage that they enjoy over their peers. Therefore, SMEs that introduce financial technologies and their innovations have comparatively greater market access than those that do not. The study concluded that over 78% of SMB retailers agree that using FinTech will give them a greater sales experience and customer base. Market share, income and therefore the growth of your business.

In promoting an innovation to a target audience, it is important to understand the characteristics of the target audience that help or hinder the introduction of the innovation. There are five established categories of adopters, and although the majority of the general population tends to fall into the intermediate categories, there is still a need to understand the characteristics of the target population. the different categories of adopters.

- **Innovators:** These are people who want to be the first to try out innovation. You are enterprising and interested in new ideas. These people are very willing to take risks and are often the first to come up with new ideas. Very little, if any, need. to attract this population.
- **Early Adopters:** These are people who represent opinion leaders. You enjoy leadership roles and take advantage of opportunities for change. You are already aware of the need for change and are therefore happy to take up new ideas. for this population group they contain instructions and leaflets for implementation. You don't need information to make a change.
- **Early Majority:** These people are rarely leaders, but they adopt new ideas earlier than the average. However, they usually need to see evidence that the innovation is working before they're ready to adopt it. Strategies to attract this population include success stories and evidence of the effectiveness of innovation.
- **Late majority:** These people are skeptical of change and will only adopt an innovation after it has been tested by the majority. Strategies for engaging this population include information on how many other people have tried and successfully adopted the innovation.
- **Laggards:** These people are tied to traditions and very conservative. change and they are the most difficult group to integrate. Strategies to attract this population include statistics, appeals for fear, and peer pressure on the other adoptive groups.

Figure 2.3 Diffusion of Innovation Theory



Source: <http://blog.leanmonitor.com/early-adopters-allies-launching-product/>

The stages by that an individual adopts associate innovation, and whereby diffusion is accomplished, embody awareness of the requirement for an innovation, call to adopt (or reject) the innovation, initial use of the innovation to check it, and continuing use of the innovation. There are 5 main factors that influence adoption of an innovation, and every of those factors is at play to a special extent within the five adoptive parent categories.

- Relative Advantage - The degree to which an innovation is seen as higher than the idea, program, or product it replaces.
- Compatibility - How consistent the innovation is with the values, experiences, and desires of the potential adopters.
- Complexity - however troublesome the innovation is to know and/or use.
- Triability - The extent to that the innovation will be tested or experimented with before a commitment to adopt is made.
- Observability - The extent to which the innovation provides tangible results.

#### LIMITATIONS OF DIFFUSION OF INNOVATION THEORY

There are several limitations to the diffusion theory of innovation, including the following:

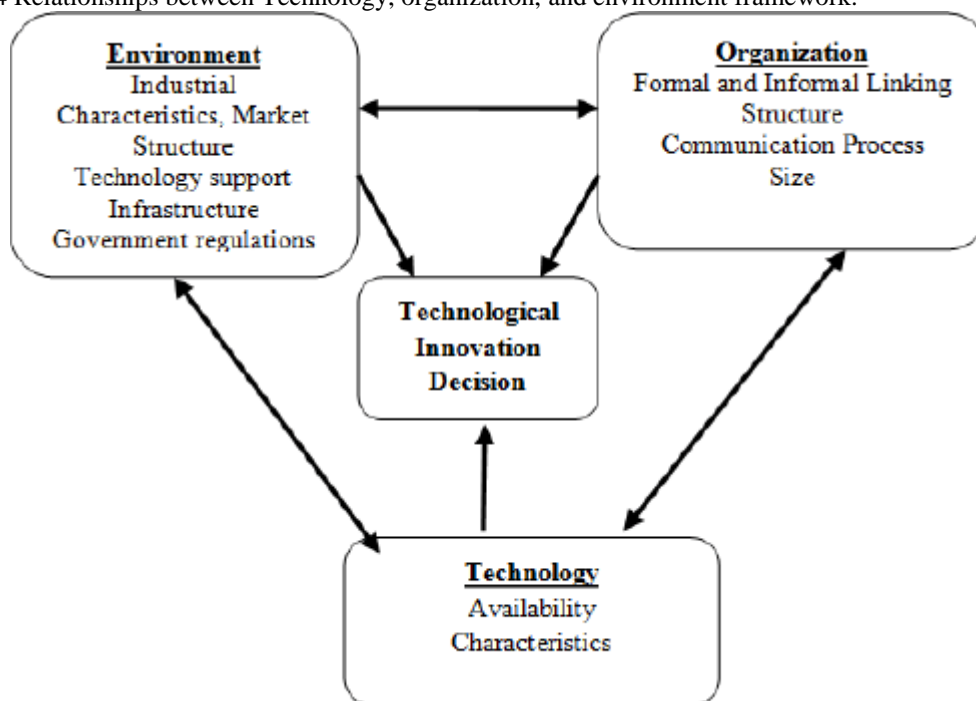
- Much of the evidence in support of this theory, including the categories of adopters, does not come from public health and was not designed to be explicit about the introduction of new behaviors or innovations in health care relate.
- Does not promote a participatory approach to the adoption of a public health program.
- It works best by adopting behaviors rather than stopping or preventing behaviors.
- It doesn't take into account a person's resources or social support to embrace the new behavior (or innovation).

**TECHNOLOGY, ORGANIZATION AND ENVIRONMENT (TOE) THEORY** The Technology Organization Environment (TOE) framework is based on the concept that technology, organization and the environment are contextual factors through which companies decide to innovate (Carnaghan and Klassen, 2007). When considering the reception of data innovations at the company level, technology, organizational and environmental theory (TOE) returns to three central points, which are also separated from the smaller

constructions (Oliveira and Martins, 2011). SMEs, organizational environment within the SME and ecological environment (Figure 2.4). All of this does not take into account the dynamic approach at company level, but rather on technology, organization and the environment.

Internal and external innovations that are important to the business provide the technical context. Both devices and processes can be used in technologies. The organizational context refers to the characteristics and resources of the company, including company size, degree of centralization, degree of formalization. Management structure, human resources, amount of missing resources and connections between employees. The environmental context includes the size and structure of the market, the company's competitors, macroeconomic history, and the regulatory climate (Fleisher and Tornatzky, 1990).

Figure 2.4 Relationships between Technology, organization, and environment framework.



Innovations can originate in several technologies that are also used in several domains. The TOE framework is based on a solid theory and has been empirically tested for validity and relevance (Oliveira and Martins, 2011). The EVG framework (Tornatzky, Fleischer & Chakrabarti, 1990) has also been used in the context of emerging economies. Interestingly, scientists are divided over the application of the other theories of technology adoption, whether they are appropriate at the individual level (such as the Technology Adoption Model (TAM), The Theory of Planned Behavior (TBP), and the Unified Theory of Technology Acceptance (UTAUT)) or at company level (theory of innovation diffusion). A framework is widely used in information technology and commerce (Lin and Lin, 2008) and is largely an enterprise-level theory (Baker, 2012), so the choice of the TOE framework was appropriate for this study. This study aims to fill a significant knowledge gap by identifying the precise reasons why certain companies use fintech and others don't. Again, this was not significantly investigated through the lens of a TOE frame. It goes without saying that in the global knowledge economy, fintech is the way forward to doing business. It is also well known that small businesses are the backbone of an emerging economy (Kuan and Chau, 2001) like India, where business transactions are traditionally carried out in cash. Consequences for the sustainable and balanced economic development of every country. In emerging markets, there are transactions where the end customer may not have any experience navigating applications or may not have a smartphone. It was also found that the perceived direct benefits of fintechs have a significant impact on fintech adoption. E-business (Zhu, Kraemer and Xu, 2003), electronic data interchange (EDI) (Kuan and Chau, 2001) and information system (IS) Application (Thong, 1999).

Therefore, the TOE framework was contextually suitable in the past to examine the introduction of innovative technologies. Perhaps one of the most notable features is the ability to use the TOE framework for each of the three main themes, namely technological, organizational and environmental context, with different factors. This is a great advantage of this theory, as in general each new technology also has its own unique factors which may differ from previous technologies, therefore the TOE framework can be adapted for each new technology and its introduction process. Hence, the TOE framework is preferred over other theories for introducing fintechs to small businesses in India. Small businesses are the backbone of the economy (Kuan and Chau, 2001), and these



small businesses are not a simple scaled-up version. from large companies (Raymond, 1985) Small companies are unique in their own right and are extremely important to the growth of a startup. Economy like India. For these reasons, small businesses require independent and contextual research into the factors influencing their options for adopting fintechs. India is an emerging country according to the geographical definition of emerging countries (Burgess and Steenkamp, 2006). Financial technology is also expected to contain risk, provide speed and delivery when and where the customer wants it. The World Trade Organization (WTO) does not define any industrial or developing countries and elects its members through self-selection. financial and human capital holding small businesses back in the race to adopt new technologies (Welsh, 1981). Previous studies in emerging economies have shown several interesting developments, for example in emerging economies like India, management accountants are using big data (Varma, 2018a), entrepreneurs are using mobile banking (Varma, 2018b), and stakeholders in general are influenced by social networks (Varma, 2018c ) like Twitter. According to Varma and Sahoo (2018), more evidence can be found in emerging markets, where they find that accountants use professional network services for their growth, and through Varma, Bhalotia and Gambhir (2018) than according to Varma (2019), medium collaboration on the relationship between cultural intelligence and knowledge exchange in the context of emerging countries. Emerging countries are quite dynamic and open to new technological developments. Emerging economies are unique and have their own characteristics, some of which may be similar to developed markets and some of the characteristics may be completely different from the phenomenon observed in developed markets. This study is based on the TOE framework used by Kuan and Chau (2001) for the adoption of electronic data interchange (EDI) by small businesses and adds new contemporary perspectives to it. The broader research question consisted of examining which specific factors of the TOE framework led to the introduction of fintech in the context of emerging countries. Perceived direct benefits, such as operational savings from internal efficiency, would encourage the adoption of fintechs (Kuan and Chau, 2001). However, small businesses are not expected to assess the perceived indirect benefit as a long-term benefit, as observed in previous studies such as those by Kuan and Chau (2001). Emerging market pressure and may not be concerned about industrial pressures either. This could be because most small businesses are not pioneers in the use of technology and so there is no general urgency for most companies to adopt it. Cragg and King, 1993) was a major factor hindering the growth of information technology in small businesses. The perceived cost, however, would have a significant bearing on the fintech adoption choices of business (Kwon and Zmud, 1987). Previous studies also concluded that complexity negatively impacts technology adoption (Ahuja, Jain, Sawhney & Arif, 2016).

## **EMPIRICAL REVIEW**

This covers studies carried out on Fintech services Mobile Money, Digital lending, Mobile and Internet Banking, Accessibility, Costs and Security which have contributed to the growth of SMEs.

## **MOBILE MONEY IN NIGERIA**

Mobile money is a technology that allows you to save, receive and spend money easily from a mobile phone. popular today, especially in Africa, and in a country like Nigeria.

Now, mobile money operators in Nigeria are just mobile money facilitators in the country. Most telecommunications companies and some fintech companies are now mobile money operators.

Benefits of using mobile money operators in Nigeria are

- i. They are easy and convenient to use
- ii. Saves you the time and energy that would spend in going to a bank
- iii. Mobile money is secure
- iv. They can be used anywhere as far as there is a mobile phone signal
- v. Relatively low cost.
- vi. Mobile money transactions are quick

Mobile money stores funds in an account or electronic wallet. They may or may not link this account to your home phone number. As a client, you have access to this fund through your mobile phone to carry out business transactions. You can receive, store, and send money for

transactions like buying items online, paying bills, paying tuition, and buying airtime. At the height of it all, mobile money also allows you to withdraw cash from any point of sale or authorized agent. The services offered to mobile money users differ from one operator to another. There is always an assigned code that you can dial to access the available options.

#### **2.4.1.1 MOBILE MONEY AND GROWTH OF SMES IN NIGERIA**

With better access to financial services through the mobile money platform, poverty alleviation and financial completeness have accelerated in developing countries. They were some of the catalytic reasons for Fintech adoption in developing countries (Must and Ludewig, 2010). Frempong (2009) conducted a study to show that cell phone ownership has gradually gained access to markets, which increases business performance. The study confirmed the limited ability to provide other financial services that might be possible through the system and correlated with mobile money transactions and sending and receiving money, even within industrial and metropolitan areas of Ghana. The author learned of the decline in cell phone cash.

SMEs have benefited greatly from using mobile money transfers with agents across the country. Because of its easy access, SME owners rarely visit the bank, which means they spend more time in business. Banks Everywhere (Omwansa, 2009) Most SME owners know how to use mobile payment services that require no training before using and are easy to use.

Schierz, Schilke and Wirtz (2010) showed that the use of mobile technologies has become part of the users. Nevertheless, surprisingly, mobile payment is one of the rarely used mobile services, since mobile payment services are not fully accepted by customers. The study results showed significant effects of compatibility, subjective norm and individual mobility. The study recommended greater efforts in commercializing mobile payment services in order to gain consumer awareness for the technology.

Omwanza (2009) while examining MPesa's progress in Nigeria, found that respondents were aware of the service. Business owners because they spend less time visiting the bank and therefore more time running their business. The study also found that mobile money transfer services are easy to use, require no training, and are very convenient to use.

#### **DIGITAL LENDING IN NIGERIA**

Richard Partington (2019), in his study of UK buyers limiting credit card use amid economic uncertainty, summarized that as households cut spending, customer debt soared Across the country. The Bank of England said annual consumer credit growth slowed to 6.6% in December 2018. The flow of loans was likely one of the main drivers of the slowdown in household spending growth. last year. credit card providers with low-cost deals and a switch that allows consumers to buy cars with finance packages.

Julie Cazzin (2017), in her study Canadians Trace Their Path to 'Wealth' to summarize the only way Canadians find they can keep up with the Joneses with incomes that cannot keep up with 'inflation' is by deal with them like to accumulate debt. And gradually, they affect the bank as well as family networks. This type of behavior is clearly detrimental to his personal finances, but Canadians still indulge in it, and the main reason is that debt, for the ideals of the past, is dirty with money. Unfortunately, they get used to it too much and many of them expect it to end that way. In many cases, borrowing during this low interest rate has worked for many Canadian buyers, if they have saved their expected expenses.

According to the report by Omidyar Network and Boston Consulting Group (2018), Credit disrupted Digital SME's Lending in India summarizes that there are today between 55 and 60million SMEs operating in India, contributing to employment and revenue. gross domestic (GDP). the nation. However, this contribution remains well below its potential. A major obstacle to growth has been the lack of access to formal credit - today around 40% of loans to Indian SMEs are made through the informal sector, where interest rates are at least twice as high. higher than in the formal market. This lending landscape is set to change rapidly, with digital lending on the verge of disrupting the status quo.

India's SME opportunity is driven by three major changes. First, SME especially those with annual incomes between INR 10L and INR 1 Cr (\$ 15,000 \$ 150,000), who are forming and digitizing quickly. Second, India's maturing stack, coupled with the increasing availability of API-based data, has fundamentally transformed every step of the credit value chain. End-to- end digital SME loans have become a reality, with loan approval times as short as a day. Third, the increased receptivity to SME's digital loan indicates the scale of the potential market. This environment has led to a turning point for SME digital lending in India. Digital practices are transforming the entire SME credit value chain, from procurement to service and collection, solving SME borrower issues and demonstrating the potential for 30% and 40% more-unit savings favorable than traditional finance.

According to Kaffenberger, M. and Totolo, E. (2018) in their study of the similarities and differences in digital

credit markets in Nigeria and Kenya. Digital credit has transformed entry into prescribed credit in Nigeria and Nigeria, transforming the region into an enabling environment for technological advancements and lending. Although the two republics were quickly accepted, a new study by FSD Kenya and CGAP with nearly 8,000 people revealed large changes and similarities in the operation and practice of digital credit in the two regions. Similarities offer features that can be shared with digital credit as products, while the changes are mainly due to different arrangements in the banking sectors, local financial frameworks and telecommunications. To be successful in micro and small businesses, finance plays a key role in starting, expanding, diversifying and working capital. Without funding, no business can carry out its resolutions.

Capital is the backbone of SMEs and many other businesses (Mckernan and Chen, 2005). It has been found that less aid to external financing has and more inhibits their functioning and growth in the non-industrialized and industrialized spheres of small firms (Galindo and Schiantarelli, 2003). In Nigeria, the mainstream business sector has both the prospect and the important task of bringing multitudes of people from the troubled level, including the casual economy, to the mainstream economy. According to a survey carried out in 1999, the segments should employ more than 50% of the salaried population of 2.3 million people. Formal SMEs take over 40% of the operational population as much as majority of the SMEs in Nigeria function informally (Kenya Economic Report, 2013).

Just as a sluggish economy where exports underperform forced Nigeria to raise another credit to repay a maturing loan, tough economic times such as poor industry performance, cutbacks or deferred wages have taken their toll. saw digital borrowers struggling to repay their loans. mobile money transfer services and high mobile internet connectivity have attracted wealthy investors into the country's fintech dynamic. The banks also closed their physical divisions and opened a smartphone store where they made a lot of money setting extravagant prices for microloans despite the low overhead costs incurred. There are currently over 49 digital credit providers in Nigeria, and new services are being rolled out on an ongoing basis (Singh, A 2019). All they have required of borrowers is that they allow them access to their call logs, Facebook accounts, and text communications.

The deployment has been very rapid, creating an extraordinarily wonderful capacity for borrowers who were previously frustrated with the tedious loan application process used by banks, microfinance institutions (MFIs) and Sacco. However, there may be a sad conclusion to what was hypothetically an inspiring story of financial inclusion in Nigeria. Rather than leaving borrowers affluent, the many digital credit providers may have pushed them into financial slavery. Many Nigerians are now employed by a number of these companies, sometimes having to borrow from one mobile loan app to pay off another.

## **DIGITAL LENDING AND GROWTH OF SMES IN NIGERIA**

Small and medium enterprises (SMEs) play a significant role in the nation's economic growth. Supporting their financial needs promptly and efficiently should be key for every financial institution. Manual, paper-intensive processes are not enough to address the evolving needs of SMEs. Banks need to adopt technology for automating the end-to-end loan origination process. The current situation, when social distancing is the need of the hour, makes digital even more relevant.

Fintech lending activity is picking up as fintechs are able to leverage payment data to more easily determine loan risk and use smartphones as a distribution channel. For example, fintech startups like Carbon and Renmoney have successfully exploited alternative credit scoring algorithms to provide instant, unsecured, and short-term loans to individuals. Some fintechs, such as Migo, have also stepped up to offer unsecured working capital loans to SMEs with minimal documentation. Banking fintech solutions were quickly followed here, with major banks launching digital lending platforms like GTBank's Quick Credit and Access Bank's Quickbucks.

SMEs in Nigeria have continued to take advantage of digital lending services through mobile finance services such as Kuda, WemaAlat, Ren Money, Carbon (formerly Paylater), among others, which in turn help them pay their insurance premiums. From the analysis of (Govil et al., 2014), a positive correlation has been identified between mobile finance and the economic growth of companies. This was the result of an efficient flow of goods and services, an environment conducive to investment and security. Thanks to mobile finance, SMEs are able to save and obtain credit to increase their business activities and communicate with their customers.

Through better communication with clients, SMEs have been able to reduce the cost of debt servicing because clients can send money where they feel comfortable. SMEs would focus more on sales rather than debt collection, thus increasing the volume of sales.

Beck, DemirgüçKunt and Maksimovic (2011), using a database of 74 countries on small, medium and large enterprises, found that access to finance was one of the main problems for entrepreneurs involved in these activities. They also speculated that the lack of access is facilitated by most foreign banks which practice inefficient credit registry and associated with increased restrictions on banks' liabilities to SMEs. The results of

the study also indicate that SMEs' access to finance depends entirely on the levels of interaction between the financial manager and their capabilities which may include marketing strategies, financial operations and technological capabilities.

Researchers also focused their studies on access to finance for SMEs and Berger and Udell (2012) developed a model that exclusively analyzes the availability of credit for SMEs and concludes within the framework that technology is the best means by which Government policies and financial structural implementations can be implemented. implemented to ensure availability and access to credit. The study concludes that technologies are best placed to simplify the complexities of accessing finance and levels of engagement between financial institutions and SMEs.

Must and Ludewig (2010) in their study on SME access to finance or credit found that credit is supplemented by savings. SMEs are able to accumulate capital and smooth spending during difficult economic times. In addition, SMEs can access loans by using savings as collateral, thus spreading the repayment period to facilitate the fulfillment of their obligations. Finally, they noted that the accumulation of extraordinary savings prompts SMEs to expand their business capabilities and potential.

Access to finance for SMEs remains a critical aspect for their survival, as explained in the study by (Wanjohi, 2010). The growth of any SME is catalyzed by the availability of credits and loans at different levels of product and service development (Birundu, 2015; Berger et al., 2009; and Badulescu, 2011). Access to finance also plays a key role in enabling SMEs to develop different combinations of products and services to meet specific market demands, thus improving the profitability index.

By expanding their access to finance, SMEs can benefit from digital solutions, however, most SMEs continued to face difficulties in accessing finance due to asymmetry of information, financial and accounting records. limited, lack of collateral, limited access to physical branches, limited access to formal loan systems (ROK, 2005). The above limitations have led most SMEs to rely on family and friends for informal lending. Funding is limited by this method, resulting in derailment of growth and expansion of SMEs.

#### **REGULATORY FRAMEWORK FOR DIGITAL LENDING IN NIGERIA**

An individual or business wishing to embark on a digital lending business must obtain a money lending license in one of the 36 states of Nigeria and the Federal Capital Territory. A license obtained under a state's money lending law only authorizes money lending activities in that state. The process for obtaining a license in each state is similar. This usually involves submitting an application in the prescribed form with the applicant's letterhead to the designated authority within the state. The application will be supported by the required documents, such as the company's incorporation documents, which authorize them to operate as a money lender, a tax settlement certificate and proof of payment of the fees required for the application. Once all regulatory requirements have been met, an annually renewable license will be granted to the company. Alternatively, a company wishing to carry on money lending business in Nigeria may be approved by the Central Bank of Nigeria as a holding company under the Revised Guidelines for Financial Companies in Nigeria ("the Guidelines"). This license is however more suitable for companies wishing to offer additional services in addition to lending money. The guidelines allow finance companies to make consumer loans; fund management; asset financing; financing of projects; local and international commercial financing; assignment of debt; debt securitization; Financial advice; loan syndication and issuance of vouchers, coupons, cards and stamps. It should be noted that money lenders and financial companies cannot receive deposits from the public unless they acquire a microfinance banking license.

#### **DATA PROTECTION AND DIGITAL LENDING IN NIGERIA**

The nature of the digital lending business model is such that the data protection regulatory framework cannot be ignored by a digital money lender offering its services to Nigerian residents. This is all true as digital lending platforms use borrower data to verify their identity, assess their creditworthiness or ability to repay the loan and ensure the repayment of the loan by asking friends, family or their parents. place of work to repay the loan or force the borrower to repay. The data collected includes contact information, call logs, SMS logs, Facebook friends, contact list of other social media accounts, mobile money transaction history, geolocation, bank verification numbers, emails, ID photos, videos and data from the use of any third-party application.

Nigeria's Data Protection Regulation, 2019 requires digital providers as data controllers to communicate what data is being processed, the specific purpose of the data processing, and to obtain the consent of data subjects to process the data. Data subject must also be informed of your right and the possibility to withdraw your consent at any time.

These communications should be made in a prominent privacy policy written in plain language and posted on the provider's website. Lenders should be careful not to wait for excessive data, however. Consent is deemed not freely given when the performance of a contract, including the provision of a service, is subject to consent to the processing of personal data which is not necessary (or excessive) for the performance of this contract. This occurs when a borrower is required to consent to the use of excessive data to access funds through the app or to withdraw consent to the excessive data requested by logging out and uninstalling the app. In addition, if the data is to be used for a purpose other than that for which it was collected, the interested party must be informed of this purpose and provide additional consent.

In particular, before the collection of personal data, the controller must communicate the retention period of the data or, if this is not possible, the criteria used to determine this period. This period is generally absent, or at least vague in the Privacy Policy of certain loan applications.

## **MOBILE OR ONLINE BANKING IN NIGERIA**

The advent of mobile technology and its devices has made it possible to improve the efficiency of businesses and businesses (Tiwari and Buse, 2007; UNCTAD, 2007). One of these technologies is mobile telephony. Mobile telephony serves as a platform for launching innovative mobile telephony applications and services (UNCTAD, 2007). The use of mobile technologies for commercial activities initiates the concept of mobile commerce (m-commerce). The number of mobile phone subscribers has experienced a record increase in developed and developing countries (Boadi et al., 2007; UNCTAD, 2007). The mobile phone market is one of the fastest growing markets in the world (Gupta, 2005; UNCTAD, 2007). Financial institutions seized this opportunity to win market advantage by offering a variety of value-added services to customers through the use of mobile banking services (Gupta, 2005).

Mobile banking (m-banking) is a mobile commerce application that enables customers to conduct banking transactions virtually anytime, anywhere (Suoranta, 2003). It is the provision of related banking and financial services such as savings, money transfer and stock market transactions, among others on mobile devices (Tiwari and Buse, 2007). The banking market has experienced unprecedented growth in many countries. For example, in the United States, about 30% of households use cell phones for banking transactions (MMA, 2009). This is also the case in European and Asian countries, where 80% of households use mobile banking services (Gupta, 2005). In Africa, mobile phones are the most widely used form of communication technology (ITU, 2007). This has enabled the mobile market industry in Africa to be the fastest growing in the world compared to other continents (ITU, 2007). Nigeria is a major player in the African banking applications market (UNCTAD, 2007). This is attributed to the following factors:

- vii. Nigeria has been described as the fastest growing telecommunication infrastructure nation in Africa and third in the world (Ayo et al., 2007)
- viii. Nigeria is the most populous country in Africa with a population of over 150 million (Muganda et al., 2008)
- ix. Nigeria is the leading country in m-commerce usage in Africa (Muganda et al., 2008).
- x. Nigeria has the highest mobile subscriber base in Africa with about 70 million mobile subscribers (ITU, 2009; ICT works, 2010).

In addition, the literature has indicated that the adoption of ICT applications such as mobile banking in a country is culturally inclined (Min et al., 2008). Cultural differences existing in countries can influence behavior in the use and adoption of technology (Straub et al. 1997). The adoption of mobile technology does not follow a one-size-fits-all pattern. It can be attributed to differences in mobile telecommunications infrastructure, types of services offered, marketing strategies and consumer culture (Harris et al., 2005).

### **2.4.3.1 MOBILE OR ONLINE BANKING AND GROWTH OF SMES IN NIGERIA**

Using the mobile phone to conduct monetary transactions from an individual or corporate bank account is defined as mobile / online banking (Nasikye, 2009). M-banking refers to the provision of services and the provision of financial and banking services through the use of mobile phones (Owen, 2008). Mobile / online banking services can include confirmation of bank balances, payments from bank account, money transfer from bank to cell phone, loan applications among others. All these services are provided using the mobile phone or the Personal Digital Assistant (PDA).

The use of mobile money has made a significant contribution to SMEs, as discovered by Nyaga (2013) in his study "The impact of mobile money services on the performance of SMEs". It has obviously been shown that most operators are more oriented towards mobile / online banking in their daily transactions than towards the formal banking sector. This is due to its efficiency and effectiveness in settling transactions between customers and the

company. Second, SME merchants have continued to adopt mobile / online banking services due to continued exposure and business growth dynamics in the digital economy where there is no need to physically visit their stores. branches to execute transactions.

The study by Otiso et al. (2013) found that a significant number of SMEs have aligned themselves with using mobile banking services instead of traditional banking services, as they are able to get both information and transactional services in their phone's mobile. their personal and corporate bank accounts. queues have been eliminated through the use of mobile banking. Additionally, SMEs were able to pay supplier and utility bills from the comfort of their desks, reducing transportation costs and financial risks (Wamuyu, et al., 2011).

In Mobile banking, security and a guarantee of trust in payment services are necessary (Mallat,2011: Siau et al., 2004). This can be ensured by the confidentiality of customer information, efficiency in the execution and completion of the transaction and customer identification. More importantly, secure PIN codes and waterproof security codes are key areas of concern for mobile banking users (Nam, Yi, Lee & Lim, 2010). A study by Njenga (2010) on the role of M-banking on SMEs argued that the demand for high M-banking usage depends on wide network coverage and good network connections. This enhances the easy, fast and affordable access mobile transactions that are available and convenient for all potential participants. Most of the SMEs in the remote areas of Nigeria Country do not have sufficient network coverage and hamper the use of M-banking services.

### **SECURITY**

In Fintech, users' perception of security and trust in payment service providers is required (Siau et al., 2004: Mallat, 2007). The security of mobile transactions involves; lack of transaction timeframe, completeness of transactions, customer identification and confidentiality of customer information. Fintech transaction users are more concerned with the safety and security that revolves around the use of PIN code and security code (Nam, Yi, Lee & Lim, 2005). Shon and Swatman (1998) argue that the key requirement for any electronic financial transaction is confidentiality, authentication, data integrity and non-reputation. Other security features include user anonymity and privacy (Jawyardhena and Foley, 1998: Shon and Swatman, 1998: Mallat, 2007). Njenga (2009) argues that the high usage demand of M-banking depends on wide network coverage and quality network connections. This ensures easy, fast and inexpensive access to mobile transactions accessible to all potential participants. With wide network coverage and good connections, new SMEs can be opened in remote areas and / or existing SME owners can expand their business into areas that might have been inaccessible without the functioning of the network. found that losing a mobile phone does not mean losing your money because you cannot log into your mobile money account without a correct personal identification number (PIN). Fintech is proving to be a convenient and secure service that users carry their money with them AND can withdraw money anytime at minimal cost with no inconvenience. To use the mobile payment system, one must firmly believe in the security and trust in the payment system providers. The users of any payment system are primarily concerned with the safety and security of mobile payment transactions. Security means no delay or incomplete payment. a transaction and the non-disclosure of private information of payment transactions. These security and confidentiality issues are ensured through the use of the personal identification secret code for each individual banking transaction Mr. Omwansa recommended that the confidentiality of customer information, transaction authentication, data integrity and security were the only requirements for any financial transaction in the Fintech environment. Merritt (2011) found that mobile money transfer has inherent risks just like all other systems. privacy and security, money laundering, user protection, fraud, credit and liquidity. The study found that mobile money services minimized the risks inherent in cash payment services, thereby increasing the openness of cash flows and enabling risk management through regulation of payment systems.

The study recommended that a number of issues should be taken into account in order to minimize the risks that mobile phone payments can present. Other key non-bank players involved in mobile payments, such as telecommunications companies, their agents, and technology providers may carry greater risks. The study noted that there are unique risks to telecommunications companies that may go undetected or overlooked by financial institutions and their regulators due to limitations in experience. The multiple regulations exerted on the banking and telecommunications sectors are to blame as they operate autonomously and have limits to joint cooperation to ensure effective supervision of mobile money transfers. It is necessary to combine the two distinct sectors to form an effective common regulatory environment in all sectors involved in mobile money transactions. Mbogo (2010) applied Technology Acceptance Model (TAM) theory to his study on the impact of mobile payments on the success and growth of microenterprises in Nigeria. The study found that the acceptance of mobile money transfer technology and its influencing factors such as accessibility, cost, convenience and security were related to perceived usage and usage. by SMEs to improve their success and therefore their growth.

**ACCESSIBILITY**

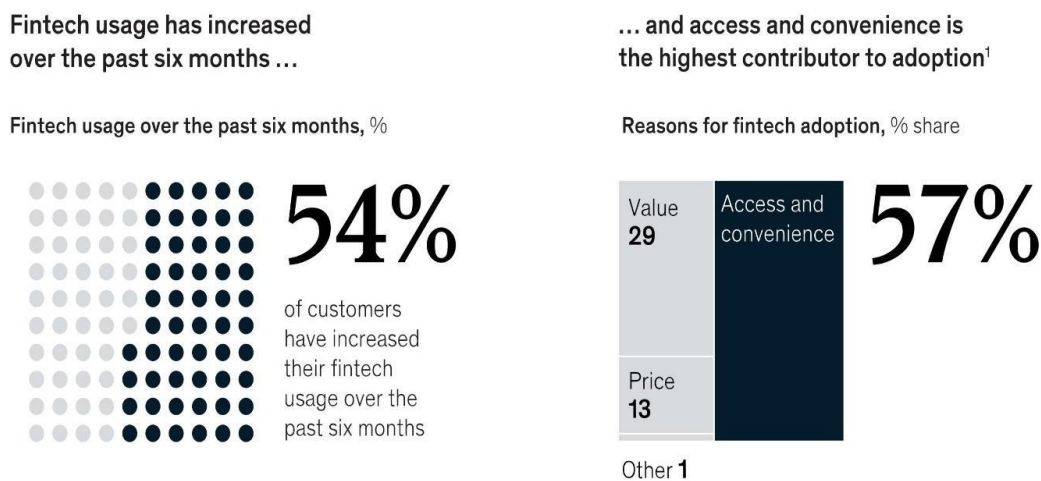
Accessibility, which means that the ability to achieve expected services is a key advantage of mobile payment services (Pagani, 2004). SMEs have greatly benefited from the use of mobile money transfers with agents located across the country. Due to the ease of access, small business owners rarely visit the bank, which means they have more time for their business. With Fintech, SME owners can easily receive or send money to their banks anywhere (Omwansa, 2009). Most small business owners know how to use mobile payment services which require no training and are easy to use.

Schierz, Schilke and Wirtz (2010) found that the use of mobile technology is now part of the daily life of users. Despite this, mobile payment is surprisingly one of the rarely used mobile services, as mobile payment services have not been fully accepted by customers. The study by Schierz, Schilke and Wirtz focused on the variables that influence user acceptance of mobile payment services. The results of the study indicated a significant effect of subjective compatibility and individual mobility. The study recommended a greater marketing effort for mobile payment services to attract customer perceptions of the technology.

Omwansa (2009), studying the progress of MPesa in Nigeria, found that respondents were aware of the service. Mobile transfer services have proven to be used by micro business owners because they spend less time in the bank and thus create more time to run their business. The study also found that mobile money transfer services are easy to use as they require no training and are very convenient when used.

Customer adoption of fintech is primarily being driven by access and convenience, and trust is critical. Despite the dissatisfaction among consumers with traditional banking services and the rise in fintech products to address these pain points, the switch to fintech is not an automatic step for many. The majority of banked customers, 67 percent, still say that they trust their bank more than fintech. However, trust in fintechs is growing, particularly among lower-income segments, with 51 percent of youth and mass-market customers saying they trust fintech about the same as they trust banks. SME owners also say that they increasingly trust fintech because of its speed in settlements.

Figure 2.5 SME owners also say that they increasingly trust fintech because of its speed in settlements  
**Customers value access and convenience, leading to increased fintech usage.**



<sup>1</sup>Percentage of customers surveyed as the reason for adoption.  
 Source: Customer interviews and survey (n = 215), Nigeria: 49% females and 51% males conducted January to February 2020

McKinsey & Company

Source: McKinsey & Company

According to McKinsey & Company, A number of factors are contributing to the growing trust in fintech, including the growing use of agents (individuals or small businesses contracted to financial institutions or mobile network operators that are able to offer basic financial services in local communities), customer education, transparency in pricing, and ease of money withdrawal. Generally, the uptake of fintech varies from market to market, depending on the extent to which traditional banking is deeply rooted and regulation is

supportive of the sector.

In Nigeria, McKinsey & Company research suggests that access and convenience are the highest contributors to the adoption of fintech, with 57 percent of respondents prioritizing access and convenience over price and value. As one young customer in the east of the country told the company, the prime reason for their switching to fintech was that “I can pay all my bills, do my transfers on my phone without going to the branch.”

Further evidence of the importance customers place on access and convenience can be seen in the success of players such as OPay and Quickteller, which have successfully grown their customer base through use cases integrated with customers’ lifestyles, making their lives easier when it comes to traveling, eating, and shopping. For example, OPay focused on offering transportation and food, which account for roughly 50 percent of spending at discounted prices by individual customers. Other fintechs are taking a similar approach with SME owners, successfully offering services for everything from supplier payments to POS services for walk-in customers.

The role of referrals is also key in driving adoption, especially for women. Our research indicates that 55 percent of customers first heard about a fintech product through a friend—and that number rises for women. For example, in Lagos, 65 percent of women heard about fintech through a friend. As one woman respondent told us: “My friends share any promo they have with me. It’s part of the sisterhood.” The products most often referred include savings, e-wallets and accounts.

Fintech adoption is highest in Lagos and among middle-class and affluent customers. This is driven by the fact that most people in the city and in those segments have higher educational levels, access to more reliable digital infrastructure, and stronger economic power. However, fintech uptake is also growing fast in the south—with individuals using USSD, agents and cards at entry level; 38 percent of mass-market and youth fintech users in this region use savings products. Meanwhile in the north, fintech uptake is still nascent, although increasing OPay applications and the roll out of agent banking locations could signal that things are shifting.

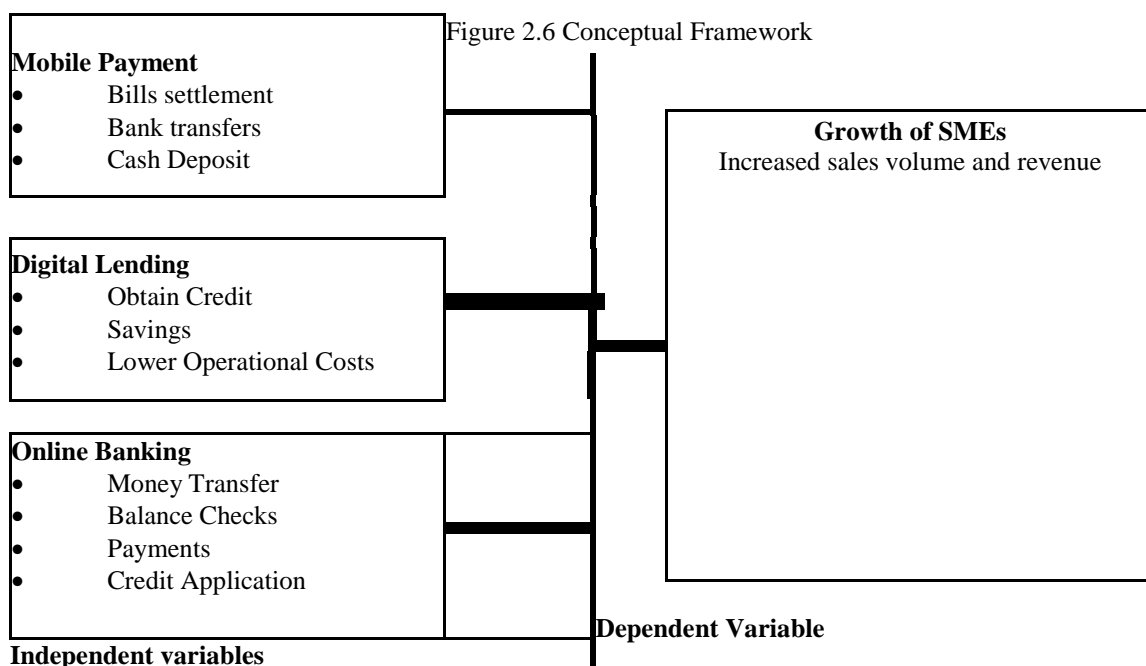
#### **TRANSACTION COSTS**

Omwansa (2009) found that mobile money transfer subscribers adopted the technology because it is less convenient for banking services. He claims that sending money through a mobile phone is much cheaper than using banks and other money transfer channels such as security companies. Lower transaction costs are passed on to consumers (Mallat, 2007). Most small business owners have mobile devices that are easy to use and have all the features required in fintech, making transaction costs affordable and lower than those charged by banks. Mallat (2007) while studying the use of mobile payments by consumers used six target group sessions, examined customer acceptance of a new mobile payment service. The study found that mobile payments complemented low-value cash payments and were more compatible with digital devices and service purchases. The study, however, suggested that certain situational limitations such as the lack of other payment methods or the urgency of the service had an impact on the appropriate benefit of m-payments. In this study, time, location, independence, availability, distance shopping, and no queues were suggested as the benefits of using mobile payments. The study highlighted a number of barriers to accepting mobile payments: high payment costs, complex payment processes, widespread and limited acceptance by merchants and perceived risks. Jack and Suri (2014) in their study on transaction costs and risk sharing on SMEs in Nigeria found a significant reduction in transaction costs and entrepreneurs can now conduct financial transactions over the phone without having to travel to the bank. Njenga (2009), while studying mobile phone banking on user experiences in Nigeria, found that there is great business potential to be tapped in the Nigerian fintech sector. The study found that the majority of customers accepted the role Fintech services play in their day-to-day business. Njenga (2009) specifies that the mode of use is mainly influenced by the missions and the marketing strategies of the banking service providers. M-banking users tend to use the service in a number of ways depending on the nature of the business and the urgency, however, the “hype factor” is a unique usage dimension. Here, the use of Fintech is caused by the excitement and imagination coming from the environment of using M-banking. Banks can be better off to provide the service and cheaper to attract more customers and not focus on high fees that scare off potential customers. In this way, banks can increase their sources of income by increasing the volume of transactions.

#### **CONCEPTUAL FRAMEWORK**

The study conceptualizes an image composed of dependent and independent variables. Independent variables include financial technology services which primarily include mobile payments, mobile finance, and mobile banking. The dependent variable is the growth of SMEs. The conceptual framework of the study shows the relationship between the variables and the dependent variable as shown in Figure 2.6





**OPERATIONALIZATION OF VARIABLES**

The researcher identifies the specific concept that contributes to the key variable of the study by identifying what defines the independent variable and the dependent variable. Table 2.1 below gives a picture of the operationalization process.

The researcher identifies the specific concept that contributes to the key variable of the study by identifying what defines the independent variable and the dependent variable. The table below gives an overview of the operationalization process.

Table 2.1 Operationalization of the variables

Variable Type	Variable	Indicators	Measurement Scale	Type of Analysis
Independent	MobileMoney	Bills settlement/payments Bank transfers Cash Deposit	Nominal & Ordinal	Descriptive Inferential
Independent	Digital Lending	Obtain Credit Savings Lower Operational Costs	Nominal & Ordinal	Descriptive Inferential
Independent	Online banking	Money Transfer Balance Checks Payments Credit Applications	Nominal & Ordinal	Descriptive Inferential
Dependent	Growth of SMEs	Sales revenue Profitability Sales volume	Nominal & Ordinal	Descriptive Inferential

**RESEARCH GAP**

Recent research on the topic of mobile money mainly focuses on the advancement of technology, on receiving mobile payments from customers (Dahlberg et al., 2008), exploring the key elements of effective implementation of mobile money services and biological systems (Mas and Ng'weno, 2010) and provide advice for updating another portable cash administration (International Finance Corporation, 2010). This survey would also examine the key elements of the success of the updated frameworks for portable cash transfer, but the focus is on the suitability of multipurpose cash for businessmen and owners of small and medium enterprises (SMEs) precisely because they should be excited about using mobile money for business purposes.

**SUMMARY OF LITERATURE**

The effect of mobile technological innovation such as FinTech services depends mainly on the accessibility, cost and security of the services offered.

From the reviewed studies, it is evident that there is more emphasis needed in educating the SMEs on the need of embracing Fintech as a platform for business transitions, bearing in mind the world is turning into digital

economy. Also, the spread of mobile money transfer has become a catalyst towards monetary exchanges among the SMEs (Lennart & Bjorn, 2010).

Studies have shown that mobile money transfer has led to secure and faster access to funds in remote areas by enabling entrepreneurs to run businesses in areas that were financially excluded prior to fintech innovations. The study also found that transaction costs decreased thanks to M-banking, as only minimal fees are involved in monetary transactions. This has made it easier for SMEs to access funds or to frequently deposit funds with financial institutions and also to save funds which are reinvested in business growth. Entrepreneurs can now access credit or repay loans instantly at lower transaction costs than when they had to visit physical bank offices. The adoption of M-banking in SMEs has also led to greater confidence in the conduct of daily activities. Using the cashless system for doing business has avoided unnecessary losses while performing business transactions. This means that owners of SMEs in hazardous areas can transact large sums of money in income or payments without fear of giving them the opportunity to expand their inventory of goods and offer more services in the area, hence greater growth.

The theoretical review has covered four broader theories relevant for the study's independent variables. The theories outlined have thus been interlinked with the study variables. Literature has also been reviewed within the areas of the conceptual framework to cover both independent and dependent variables within this study. Research gap has also been discussed within the chapter to demonstrate the need to undertake this study.

## **RESEARCH METHODOLOGY**

### **INTRODUCTION**

The procedures followed in conducting the study are outlined in this chapter. These include study design, target population, sample and sampling methodology, data collection tool, pilot testing, as well as the data analysis methods used.

### **RESEARCH DESIGN**

According to Orodho (2005), research design corresponds to the procedures used by the researcher to select the sample, administer the tools (collection and measurement) and analyze the data. Ogula (2012) described research design as the strategy applied to carry out the study and plan on how the data was collected and analysed. Kothari (2008) states that research design involves the collection and analysis of data taking into account its relevance to the objective of the research and to the economics of the procedure. Sapsford (2007) argues that the survey research project is the collection of quantifiable data from an example framework for the purpose of describing identity checks that may indicate random relationships.

This study used a descriptive survey design that provides numerical descriptions and an in-depth explanation of events as they occur, helping to determine opinions, attitudes and habits. This survey model is very inexpensive, has a high turnaround time in data collection, and can be used to identify characteristics of a population from a sample to provide quantitative and numerical descriptions of the attribute's population.

The guide to directing the whole study is basically Research design. A descriptive research design was adopted as being the appropriate outline to collect the data and analyse the finding to establish the significant effect of FinTech on growth of SMEs in Nigeria.

Descriptive design was ideal for the study since it described the nature of the respondent and the result of finding in a manner that assist in answering the research question.

### **TARGET POPULATION**

A population is an element of collection from any given selection of units or sector where a sample is selected for further study and examination (Kothari 2011). As indicated by Mugenda & Mugenda (2011) population is the total element or entities from which a researcher wished to get a sample for the study and population forms the subject of the study.

This is the specific population on which information is to be obtained from. Ngechu (2004) asserts that population is a specified set of beings, things, services, elements, and events or households be studied. The portion of that population used in data collection is a sample (Denscombe, 2008). In this study the population was SMEs registered in Rivers town managed by the owners, managers and senior managers. Information from Rivers State government (2015) indicates that there are over six major business segments which contribute to over 50% of her revenue from license (Munyithya, 2015).

The targeted population for the study comprises of 140 registered SMEs in Table 3.1. The SMEs population

was distributed as per Appendix I.

Table 3.1 Population Target

<b>SMEs Sector</b>	<b>Size</b>
Retail Shops	38
Wholesale	11
Hotels	16
Cloth Stores	18
Manufacturing Business	2
Hardware	9
Butcheries	11
Garages	8
Petrol Station	5
Hair Salon	11
Poultry	11
<b>Total</b>	<b>140</b>

Source: Rivers State Business Licensing Department: 2015.

### **SAMPLING AND SAMPLING PROCEDURE**

The study applied stratified sampling procedure to pick a sample size from the populace. Stratified sampling is a form of method of sampling in which the overall population is split into smaller groups or strata to complete the process of sampling.

The process to obtaining sample units and sampling frame, setting sampling procedures and determining the sample size for the study (Saunders et al., 2003). The sampling frame means the list of all population units from which the sample units are selected (Cooper & Schindler, 2003). The sample size is determined by: the objective of the study, importance of the inquiry, available data, usefulness of the study, what is credible and time and resources available for the study (Patonaa2002).

As indicated by Mugenda and Mugenda (2011) a stratified or delineated sampling method was appropriate for a study that is homogeneous. Since the investigation searched for various homogeneous classifications of SMEs within Nigeria, stratified sampling would be perfect for the study. It would enable the researcher to cluster the SMEs into various sectors which includes accommodation, storage, education, general trade, agricultural and transport from Nigeria then the actual sample size was drawn.

Babbie (2010), described sample size is the element of study that represents the actual population or the elements to be examined within the study, from which the results can be generalized to the entire population. A sample is part of the population that has been procedurally selected to represent the populace once the sample has been experimentally taken, the outcome can be summed up to the entire population.

The sample was selected randomly from the strata. This method of sampling is applicable in studies where the sample is selected from a population which is not homogeneous (Orodho, 2003). The sample was selected using the following formulae used by Mugenda and Mugenda(2003)

$$n = \frac{N}{1+(N \times e^2)}$$

Where N=The population  
 N= sample size  
 E=tolerance level of confidence or probability level of  $\alpha=0.05$

Given the population N=133 then the sample size  $n=140 / (1+(140 *0.05*0.05)) =105$  The selection of the sample was done across the SMEs using the formula:  
 (Number of items in SME Sector\*sample size) / Total population

Table 3.2 Population and Sample Distribution

SMEs Sector	Size	Sample	Percentage (%)
Retail Shops	38	31	27.4
Wholesale	11	8	7.8
Hotels	16	12	11.4
Cloth Stores	18	13	13
Manufacturing Business	2	1	1.4
Hardware	9	7	6.4
Butcherries	11	8	7.8
Garages	8	6	5.7
Petrol Station	5	3	3.5
Hair Salon	11	8	7.8
Poultry	11	8	7.8
<b>Total</b>	<b>140</b>	<b>105</b>	<b>100</b>

Source: Author (2016)

### DATA COLLECTION INSTRUMENT

Data was collected from primary sources using a questionnaire, which is a data collection instrument with a formal statement designed to obtain the necessary information. Structured questionnaire or organized survey was utilized to accumulate information from the respondent. Questionnaire was the best option for the study so as to get actual information from respondents as well as observing the feelings, attitude, and experience of individual (Baker & Ponton 2013). The questionnaire had open ended questions to help in expounding responses to some closed ended questions asked which helped to give a wider perspective of the issue discussed by specific questions.

According to Copper and Schindler (2012) a data collection method is a mechanism that a researcher employs to collect data from the respondent by using questionnaire to answer the research question. The investigation utilized primary data which was gathered by conveying questionnaire to the respondents.

The questionnaire consisted of a list of structured closed ended statements with likert rating scales for each statement and a space provided for selection of choices of answers. Close ended statements are good for collecting viable quantitative data. A questionnaire was preferred due to its efficiency, low cost and easiness to administer. The questionnaires were completed using structured statements to be rated by the identified respondents who were briefed on their purpose and importance. The first section of the questionnaire collected the demographic details of the respondent; the second part collected data on the first objective, third part on the second objective, fourth part on third objective.

Above all, it reflected data concerning both the independent and dependent variables.

### VALIDITY AND RELIABILITY OF THE STUDY

#### VALIDITY OF THE RESEARCH INSTRUMENT

Validity is often defined as the extent to which an instrument measures what it asserts to measure [Blumberg et al., 2005]. Validity of a research instrument assesses the extent to which the instrument measures what it is designed to measure (Robson, 2011). It is the degree to which the results are truthful.

Validity is the extent to which a concept, conclusion, or measurement is well-founded and corresponds precisely to the real world, asserted by Brains and Manheim (2011). In other words, the legitimacy of a measurement tool for instance a questionnaire is hypothesized to be the estimate to which that tool measures what it claims to measure.

So that it requires research instrument (questionnaire) to correctly measure the concepts under the study (Pallant 2011). It encompasses the entire experimental concept, and establishes whether the results obtained meet all of the requirements of the scientific research method. Qualitative research is based on the fact that validity is a matter of trustworthiness, utility, and dependability [Zohrabi, 2013]. Validity of research is an extent at which requirements of scientific research method have been followed during the process of generating research findings. It is a compulsory requirement for all types of studies [Oliver, 2010].

In quantitative research validity is the extent to which any measuring instrument measures what it is intended to measure [Thatcher, 2010]. But, in qualitative research it is when a researcher uses certain procedures to check for the accuracy of the research findings [Creswell, 2014]. It is not a property of the instrument, but of the instrument's scores and their interpretations. It is the best viewed as a hypothesis for which evidence is collected in support of proposed inferences [Messick, 1989]. Lee J. Cronbach and Paul E. Meehl first introduced the issue of validity in quantitative research in the mid 20th century in relation to the establishment of the criteria for assessing psychological tests [Cronbach & Meehl, 1955].

In research, validity has two essential parts: a) internal (credibility), and b) external (transferability). Internal validity indicates whether the results of the study are legitimate because of the way the groups were selected, data were recorded or analyses were performed. It refers to whether a study can be replicated [Willis, 2007]. To assure it, the researcher can describe appropriate strategies, such as triangulation, prolonged contact, member checks, saturation, reflexivity, and peer review. External validity shows whether the results given by the study are transferable to other groups of interest [Last, 2001]. A researcher can increase external validity by:

- i. Achieving representation of the population through strategies, such as, random selection,
- ii. using homogeneous groups,
- iii. using non-reactive measures, and
- iv. using precise description to allow for study replication or replicate study across different populations, settings, etc.

It alarmed with whether a researcher measures the right concept or not [Shekharan & Bougie, 2010]. Validity requires that an instrument is reliable, but an instrument can be reliable without being valid [Kimberlin & Winterstein, 2008].

The investigation aims to find out the content validity of the instrument of research. The extent within which an instrument provides adequate inclusion of the objectives being examined by the study is referred to as content validity. To affirm that the tool gathered the information as planned, hence it is imperative to authenticate them before administering them to the sampled population. Varied forms of validity were utilized to authenticate them namely the face as well as the content validity. The researcher shall seek the expert opinion of university supervisor, peers, and research experts to ascertain the content validity of the questionnaire. Feedback from the parties were used to correct any typing errors, spelling mistakes and any other ambiguity that might compromise the validity of the instrument.

## **RELIABILITY OF THE RESEARCH INSTRUMENT**

Reliability is the degree to which a measurement produces results that are accurate, reliable and stable. When reliability is preserved, according to Cooper and Schindler (2011), and then when administered to various sampled populations exhibiting related characteristics, the research instrument can collect similar data. To test for the internal consistent reliability analysis, Cronbach alpha as a coefficient of internal consistency was used to measure the consistency. To be able to gauge the reliability of the questions and the consequent reliability of the data was gathered using the instruments, a pilot test was carried out before the real data collection.

Reliability has also been defined as stability of measurement over a variety of conditions in which the results should be obtained (Nunnally, 1978). It is basically the repeatability or replication of research findings. When a study is conducted by a researcher under some conditions and then the same study is done again for the second time and yields the same result then the data is said to be reliable. According to Drost (2011), reliability of data from research instruments is affected by two errors; namely random error and systematic error. Random error is attributed to a set of unknown and uncontrollable external factors that randomly influence some observations but not others. For example, respondents who might have nicer moods might respond positively to constructs like self-esteem, happiness and satisfaction as compared to respondents with bad mood. Random error is seen as noise in measurement hence it is usually ignored. Systematic error is an error that is introduced by factors that systematically affect all observations of a construct across the entire sample. Systematic error is considered as a bias in measurement and should be corrected to yield better results of the sample. The best way to

estimate reliability is to measure the associations between tests, items and raters by calculating reliability coefficient (Rosnow and Rosenthal, 1991).

Pilot testing involves directing the quality and nature of questionnaire before the main investigation (Tandon 2014). To test for reliability, the researcher directed a pre testing questionnaire from alternate SMEs which were not to be included in the study. Connelly (2008) suggested that 10% of the main study's sampled population is appropriate for pilot testing. In this study, 36 respondents represent 10% of the sampled participants thus the study adopted the suggestion of Isaac and Michael (2015) that 10–30 participants were sufficient.

The study subjected the questionnaire to validity confirmation where 10 SMEs from different categories were used to assess validity of the instrument before it could be used to collect the data from the sample. The pilot was set to determine whether the set objectives represented the concept of the study (Mugenda & Mugenda, 2003). The selected SMEs were independent of the sample size of 140.

Mugenda and Mugenda (2009) emphasised that effectiveness of an instrument during the actual study is determined during pretesting. Piloted respondents were excluded in the main study, though the researcher can select them from groups whose characteristics are similar to those targeted in the main study (Babbie, 2011). The information collected was subjected for validity and reliability. The pilot tests were done utilizing respondents who did not structure the population of the actual study. A pilot study was good at enabling the researcher to evaluate the instruments clarity and its efficiency. As a coefficient of internal consistency, Cronbach alpha was used to measure this reliability. The researcher uses internal consistency to measure the relationships between various items in an instrument and whether the various items measuring the same main hypothesis yield the same scores. Rules provided by Castillo (2009) on this include: 0.5 – Poor, >0.6 – Questionable, >0.7 – Acceptable, >0.8 – Good, and >0.9 – Excellent. The designated limit of reliability for this study was the value of 0.7 which is deemed acceptable.

This study used Cronbach ( $\alpha = 0.7$ ) to test on the reliability.

#### **DATA COLLECTION PROCEDURE**

A questionnaire guide was used as research instrument. This was pre-tested for reliability and validity before being administered by a research assistant. The respondents were asked to provide their background and their businesses.

The researcher used questionnaire to collect data in the field. The respondents were assured of confidentiality by the researcher that the administered instruments were only for research reasons and the responses given upheld with total confidence.

First, an authorization letter was sought from the university, seeking permission to collect data, after which delivery of the questionnaires to the respondents was done either physically or remotely due to the current Covid-19 pandemic in the Country. For hand delivered questionnaires, the researcher followed up to ensure they have been filled in and later collect them.

Respondents were given a set of statements regarding the influence of Fintech on growth of their businesses to rate them on a scale 1 to 5 where one stands for strongly disagree and 5 means strongly agree. The researcher sought for permission to collect data from the Chamber of Commerce chairman and obtain a research permit from the Apsley Business School to collect data. The researcher engaged research assistants who interviewed the respondents according to the structured questions on the questionnaire and fill them. The exercise took a period of two months to have the respondents interviewed and also ask the questions on the questionnaires. This helped in having a higher response rate.

#### **DATA ANALYSIS AND PRESENTATION**

Primarily quantitative method was used to analyze the collected data. In evaluating the data obtained, both descriptive methods and inferential statistics were used. The data that was collected was first edited to recognize and eradicate mistakes and omissions. This stage was completed at the same time as data collection in the field. It was coded for entry into computers for data processing and entered into the machine according to categorization. Here, raw data is put in order, coded and organized so as to extract useful information from it. It helps one to understand the contents of the data. Summarized data is used to support the opinions made with that data, and summarization is done to present the data in a clear and understandable way. Data collected was analysed by descriptive analysis where percentages, frequencies, mean and standard deviation will be derived. The Likert rating scale was used to analyse the mean, mode and median scores while standard deviation was calculated to determine the extent of the growth of SMEs in Rivers town as a result of M-banking. The data collected was analyzed by use of both descriptive and inferential statistics with the use of the Statistical Package for Social

Sciences (SPSS) version 24. The software was preferred due to its ability to analyse with ease management attitudes. The findings were used to compile this report.

In order to show how data-related variables were obtained, the correlation coefficient was used to figure out if dependent variables were associated with the growth of SMEs. To assess if the three independent variables had any important influence on the growth of SMEs, multiple regression analyses were used. The decision coefficient, ( $r^2$ ) is the square of the coefficient of sample correlation between results and expected values. The degree to which changes in the dependent variable can be explained by the change in the independent variables or the 40 percentage of variance in the dependent variable (SME growth), which is explained by all three independent variables, is explained as such.

## MODEL SPECIFICATION

A multiple linear regression and correlation analysis was done on the three aspects of the Fintech services to test the degree of the influence of predictor variables on the dependent variables.

Multiple linear regression model adopted was as follows.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where:  $Y$  = Dependent Variable (SMEs Growth)  $\beta_0$  = represents Constant  
 $X_1$  = represents Mobile money  $X_2$  = represents Digital lending  $X_3$  = represents Online Banking  $\epsilon$  = represents Error Term

$\beta_1, \beta_2, \beta_3$ , represent Regression coefficients of independent variables

To measure the independent variables, a questionnaire was administered by the interviewers to the sampled respondent. The interview questions were structured questions designed to obtain information on SMEs growth, demographic characteristics, Mobile money, Digital Lending, Online banking, Fintech accessibility, cost and security as perceived by the respondents. The growth of SMEs was measured with parameters sales turnover, number of employees, profitability levels. Fintech factor was measured using Mobile money, Digital Lending, Online banking, Security, Accessibility and Cost.

## DIAGNOSTIC TESTS

Diagnostic accuracy is defined by the extent to which a test correctly indicates the (“true”) presence or absence of the disease at issue as determined by a particular reference.

The researcher carried out diagnostic test to assess the validity of the model in a number of different ways, and ensure accuracy which would address various form of bias that might occur. Some of the tests which would be used by the researcher would include;

## NORMALITY

As highlighted by Cooper & Schindler (2011), normality tests the difference between forecasted and obtained responses variable which need to be generally distributed about the distributed dependent variable scores.

An assessment of the normality of data is a prerequisite for many statistical tests because normal data is an underlying assumption in parametric testing.

The two well-known tests of normality, namely, the Kolmogorov–Smirnov test and the Shapiro–Wilk test are most widely used methods to test the normality of the data. Normality tests can be conducted in the statistical software “SPSS” (analyse → descriptive statistics → explore → plots → normality plots with tests).

The Shapiro–Wilk test is more appropriate method for small sample sizes (<50 samples) although it can also be handling on larger sample size while Kolmogorov–Smirnov test is used for  $n \geq 50$ . For both of the above tests, null hypothesis states that data are taken from normal distributed population. When  $P > 0.05$ , null hypothesis accepted and data are called as normally distributed. Skewness is a measure of symmetry, or more precisely, the lack of symmetry of the normal distribution. Kurtosis is a measure of the peakedness of a distribution. The original kurtosis value is sometimes called kurtosis (proper). Most of the statistical packages such as SPSS provide “excess” kurtosis (also called kurtosis [excess]) obtained by subtracting 3 from the kurtosis (proper). A distribution, or data set, is symmetric if it looks the same to the left and right of the center point. If mean, median, and mode of a distribution coincide, then it is called a symmetric distribution, that is, skewness = 0, kurtosis (excess) = 0. A distribution is called approximate normal if skewness or kurtosis (excess) of the data are between  $-1$  and  $+1$ . Although this is a less reliable method in the small-to-moderate sample size (i.e.,  $n < 300$ ) because it can not adjust the standard error (as the sample size increases, the standard error decreases). To overcome this problem, a  $z$ -test is applied for normality test using skewness and kurtosis. A  $Z$  score could be

obtained by dividing the skewness values or excesskurtosis value by their standard errors. For small sample size ( $n < 50$ ),  $z$  value  $\pm 1.96$  are sufficient to establish normality of the data. However, medium-sized samples ( $50 \leq n < 300$ ), absolute  $z$ -value  $\pm 3.29$ , conclude the distribution of the sample is normal.

Shapiro Wilk test was utilized by the researcher to confirm the normality test. The null hypothesis for the test of the data was considered normally distributed if the significant value (p-value)  $> 0.05$ ; on the contrary the null hypothesis was rejected if the value is  $< 0.05$ , which indicated normal distribution of data.

## **MULTICOLLINEARITY**

Multicollinearity is the occurrence of high intercorrelations among two or more independent variables in a multiple regression model. Multicollinearity can lead to skewed or misleading results when a researcher or analyst attempts to determine how well each independent variable can be used most effectively to predict or understand the dependent variable in a statistical model.

In general, multicollinearity can lead to wider confidence intervals that produce less reliable probabilities in terms of the effect of independent variables in a model. That is, the statistical inferences from a model with multicollinearity may not be dependable.

To determine if independent variables are highly correlated with each other, multicollinearity was carried out. Kothari & Garg (2014) stated that, a very strong relationship exists if the independent variables are similar in any way. Testing for Multicollinearity involved the use of variation inflation factors (VIF). Absence of Multicollinearity indicators was shown by a VIF value of 1-10.

## **LINEARITY**

Linearity is the assumption that the relationship between methods is linear. The regression procedures used in method comparison studies assume that the relationship between the methods is linear. A CUSUM is a measure of linearity, defined as a cumulative sum of the number of observations above and below the fitted regression line. When the relationship is linear, the points above and below the line should be scattered randomly and the CUSUM statistic is small. Clusters of points on one side of the regression line give a large CUSUM statistic. The formal hypothesis test for linearity is based on the largest CUSUM statistic and the Kolmogorov Smirnov test. The null hypothesis states that the relationship is linear, compared to the alternative hypothesis which is not linear. When the p-value of the test is low, it is possible to reject the null hypothesis and conclude that the relationship is nonlinear.

Linearity tests whether if there is existence of linear relationship between the dependent variable and each of the independent variable. Borg & Gall (2012) highlighted that; it tests whether the residuals have a straight-line relationship with the predicted dependent Variables.

The relationship can be measured using correlation analysis. Linearity was tested using analysis of variance (ANOVA) to determine the relationship between independent and dependent variables. Deviation from linearity is  $> 0.05$ , then the relationship between the dependent and independent variables are linearly dependent while if  $< 0.05$  there is no linear relationship.

## **HOMOSCEDASTICITY**

Homoscedasticity suggests equal levels of variability between quantitative dependent variables over a range of independent variables that are either continuous or categorical. This entry focuses on the definition and evaluation of homoscedasticity in univariate and multivariate analyses. The entry ends with a discussion of the approaches used to remedy homoscedasticity violations.

Homoscedasticity is one of the three main assumptions behind parametric statistical analyses. In univariate analyses, such as analysis of variance (ANOVA), with one quantitative dependent variable (Y) and one or more categorical independent variables (X), the homoscedasticity assumption is known as homogeneity of the variance. In this context, it is assumed that equal variances of the dependent variable exist between the levels of the independent variables.

Homoscedasticity alludes to the suspicion that the dependent variable shows comparative measures of variance and fluctuation across the range and scope of values for an autonomous independent variable (Babbie, 2011). The error term ( $\epsilon$ ) is normally and identically independently distributed with mean zero and constant variance. If the error term is not constant, the data suffers from heteroscedasticity. One can use graphical method to check for homoscedasticity. The Breusch-Pagan test was undertaken where the BP Lagrange Multiplier (LM) statistic was computed for the residuals. The BP and Koenker test the null hypothesis is that residuals do not exhibit heteroscedasticity. If the P-value of the BP-LM test is greater than 0.05 implied that the residuals do not



exhibit heteroscedasticity thus meeting the homoscedasticity assumption.

## **RESEARCH ETHICS**

The term research ethics refers to a wide variety of values, norms and institutional arrangements that help establish and regulate scientific activities. Research ethics is a codification of scientific morality in practice. Research ethics guidelines set out the fundamental standards and values of the research community. They are based on the general ethics of science; just as general ethics are based on the morality of society as a whole. Research ethics guidelines relate primarily to research, but also deal with other research-related activities such as teaching, consulting and managing institutions.

The term research also covers the work of students at all levels and doctoral candidates, and institutions are responsible for providing relevant training in research ethics. The guidelines apply to all public and private research, whether basic research, applied research or sponsored research. They also regulate the activity of consulting firms insofar as they perform research-related tasks, for example the systematic acquisition and processing of information about individuals, groups or organizations in order to develop new knowledge on a specific topic.

The guidelines are based on recognized rules of research ethics, regulating research in different fields and in different relationships:

- i. rules which constitute good scientific practice, linked to the search for precise, adequate and relevant knowledge (academic freedom, originality, openness, reliability, etc)
- ii. the rules that govern the research community (integrity, responsibility, impartiality, criticism, etc.)
- iii. the relationship with the people participating in the research (respect, human dignity, confidentiality, free and informed consent, etc.)
- iv. rest of the company (independence, conflicts of interest, social responsibility, dissemination of research, etc.)

The first two groups of ethical norms are internal, linked to the self-regulation of the research community, while the latter two groups are external, linked to the relationship between research and society.[2] Sometimes the lines between these norms are blurred; for example, accountability is a requirement for trustworthiness. In other cases, norms are in opposition to each other, making it necessary to balance different considerations; for example, weighing society's need for new knowledge against the possible strain imposed on people involved and other parties affected. In some projects, the research also raises completely new questions, for example associated with research using the internet, where the recognised norms and guidelines are not always adequate.[3] In such cases, researchers and the research community have a particular responsibility to clarify ethical dilemmas and exercise good judgement.

The research guaranteed that all data accumulated was treated with most extreme privacy and for academic purposes as it were. Information assortment process was clung to exclusive expectations of good and legitimate standards regarding objective respondents' views and levels of participation. Formal techniques and correspondence channels were utilized during information assortment. The target of the investigation and presence or non attendance of accumulating benefits was unmistakably spelt out to the respondents before information assortment with the end goal of transparency.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND DISCUSSION**

#### **INTRODUCTION**

This chapter focuses on the study by the use of questionnaires of the collected data from the field as well as the discussion of the results. Data was analyzed according to the study's aims; interpretation was performed and conclusions were drawn. The study's main objective was to examine the effects of FinTech on SME growth in Nigeria. The findings were mainly investigated in the context of both descriptive and inferential statistics and the investigator first reviewed the results and discussions related to the background information and then accompanied by descriptive and inferential statistics.

The findings on mobile money have been presented first, followed by digital lending, and finally, findings on online/mobile banking are presented last. To assess the validity and reliability of the report, a reliability review was also performed. The research tool has to have a Cronbach Alpha of more than (0.7) for research to be accurate and effective the study revealed that Mobile money had a Cronbach value of (0.894) for this analysis, digital lending had a value of (0.772), while mobile / online banking had a Cronbach value of (0.776) as summarized in table 4.1

Table 4.1 Reliability analysis

Variables	No of Items	Alpha Value
Mobile money	7	0.894
Digital lending	5	0.772
Mobile/Online banking	6	0.776

**RESPONSE RATE**

Respondents who took part in the study were those who: used or had regular access to mobile phones, had bank accounts and used Fintech in business transactions. A total of 105 questionnaires were issued and 101 were properly filled giving a feedback rate of 98.74%. This feedback rate was adequate for the analysis as pointed out by Mugenda and Mugenda (2003).

The researcher achieved this through the use of an introduction letter which comprehensively explained the purpose of the survey, phone calls and physical visits to the respondents.

Table 4.2 Summary of the response rates per SME industry

SMEs Sector	Size	Sample	Responses	Response Rate (%)
Retail Shops	38	31	28	27
Wholesale	11	8	8	8
Hotels	16	12	12	12
Cloth Stores	18	13	13	13
Manufacturing	2	1	1	1
Business				
Hardware	9	7	7	7
Butcheries	11	8	8	8
Garages	8	6	5	5
Petrol Station	5	3	3	3
Hair Salon	11	8	8	8
Poultry	11	8	8	8
<b>Total</b>	<b>140</b>	<b>105</b>	<b>101</b>	<b>100</b>

Figure 4.1, shows the distribution of SMEs as indicated by nature of business in the eleven industries under this study.

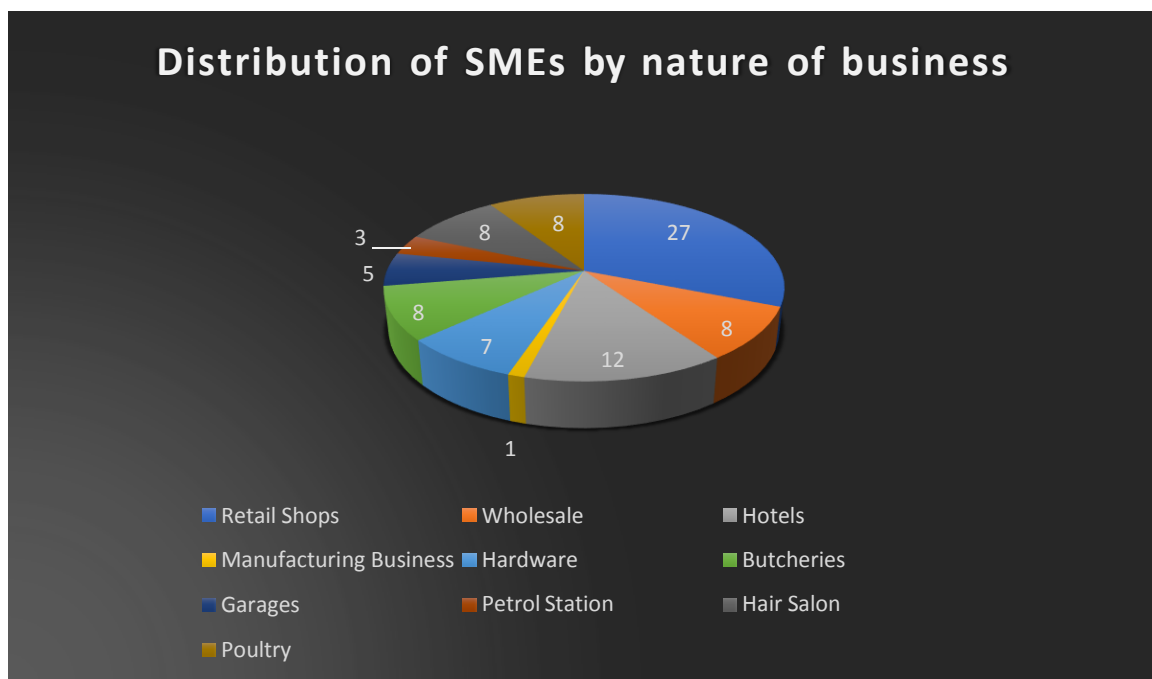
Majority of the respondents were from Retail Shop, Cloth stores and Hotels which accounted for 27%, 13% and 12% respectively.

While altogether of Wholesale, Hair saloon, Butcheries and poultry businesses also accounted for 32%.

The rest engaged in garages, petrol station, hardware, and manufacturing businesses.

The information in Figure 4.1 indicates that different types of businesses were included in the study hence increasing the confidence of generalizing the results of the study. The study also sought to know the length of time each participant had been involved in business.

Figure 4.1 Distribution of SMEs by nature of business



**DEMOGRAPHIC INFORMATION  
GENDER RESPONDENTS**

The researcher sampled both male and female respondents involved with SMEs. Table 4.3 shows the proportion of respondents that were male and those that were female.

Table 4.3 Respondents Gender

Gender	Frequency	Percentage (%)
Male	65	64.4
Female	36	35.6
Total	101	100

As Table 4.3 shows, there were more male respondents (64.4%) than female respondents(35.6%).

Figure 4.2 Respondents Gender

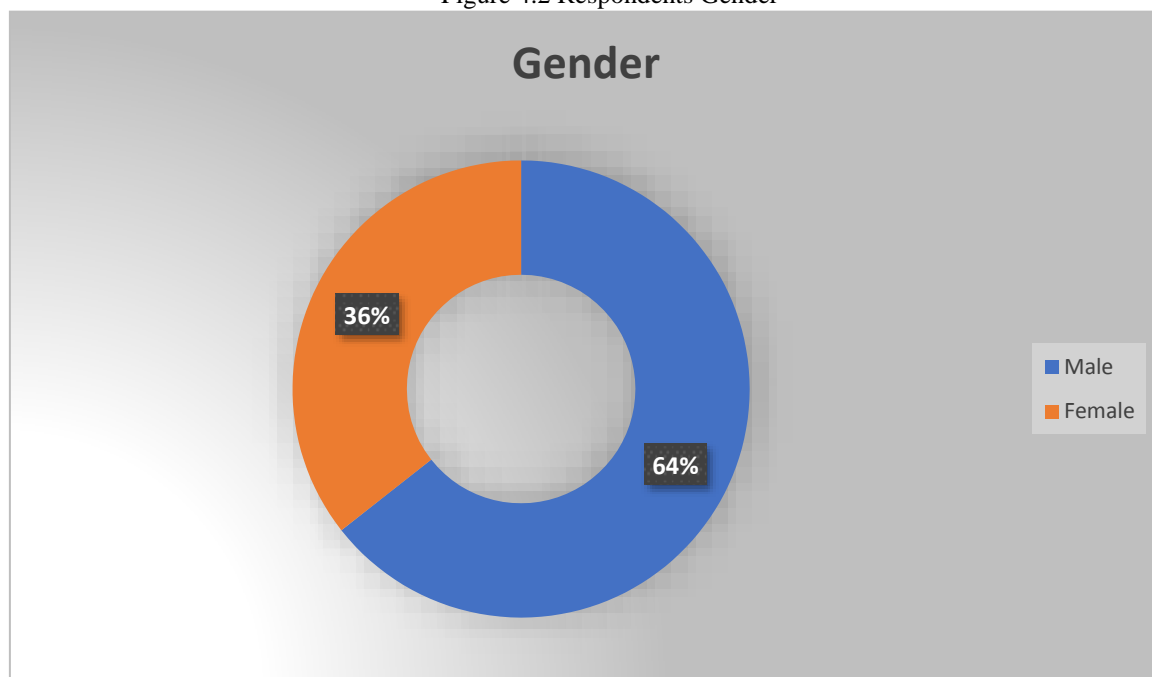


Figure 4.2 indicate a gender difference in participation in SMEs in Rivers State

**POSITION HELD IN THE COMPANY**

The sampling unit target by the researcher in the study were the business owners, Key management employees and family members running a business in the category of a SME which is using Fintech in daily running of their business.

Table 4.4 Position held in the company

Position Held	Frequency	Percentage (%)
Business Owner	82	81.15
Employee	15	14.82
Family member	4	4.03
Total	101	100

From the above Table 4.4, large number of the sampling unit was represented by the Business owners at 81.15%, followed by employees at 14.82% and lastly by family members at 4.03%.

Figure 4.3 Position held in the company

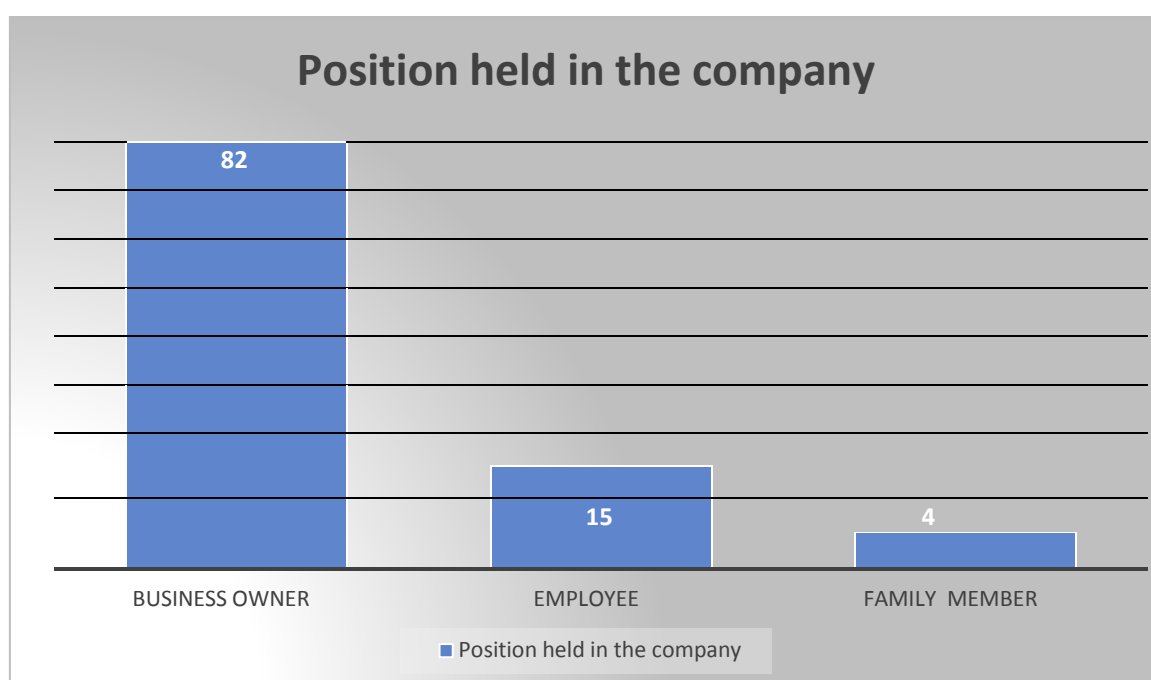


Figure 4.3 shows clear indication that most of the SMEs in Rivers State are managed by the proprietors.

**AGE GROUP OF THE RESPONDENTS**

The researcher made a decision to demarcate respondents based on the age group from 21 yearsto over 50 years.

Table 4.5 Age of the respondents

Age group	Frequency	Percentage (%)
Between 21-30 years	17	17.17
Between 31-40 years	49	49.49
Between 41-50 years	12	12.12
Over 50 years	23	21.22
Total	101	100

Table 4.5 above indicates the age group of the respondents of which most of the respondents fell in the age group between 31-40 years at 49.49% followed by over 50 years at 21.22%, thenage group between 21-30 years and lastly 41-50 years.

Figure 4.4 Age of the respondents

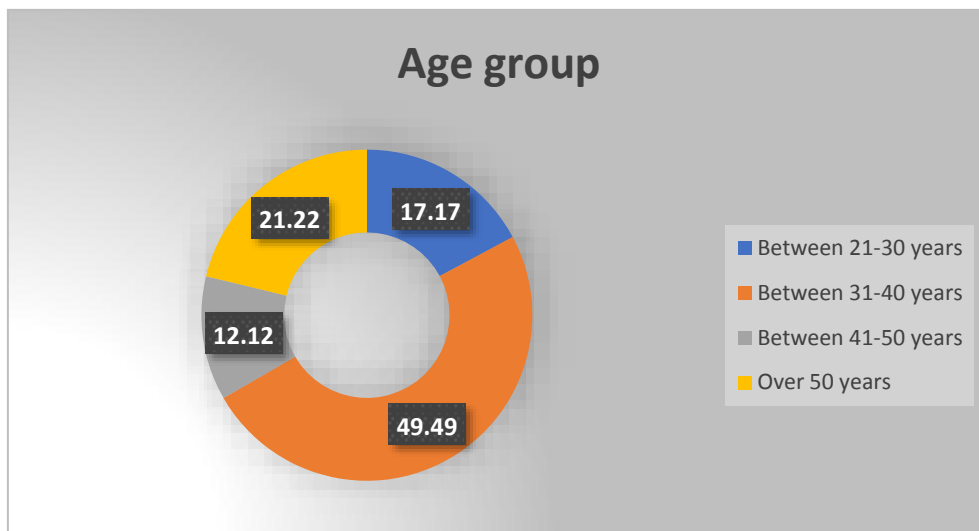


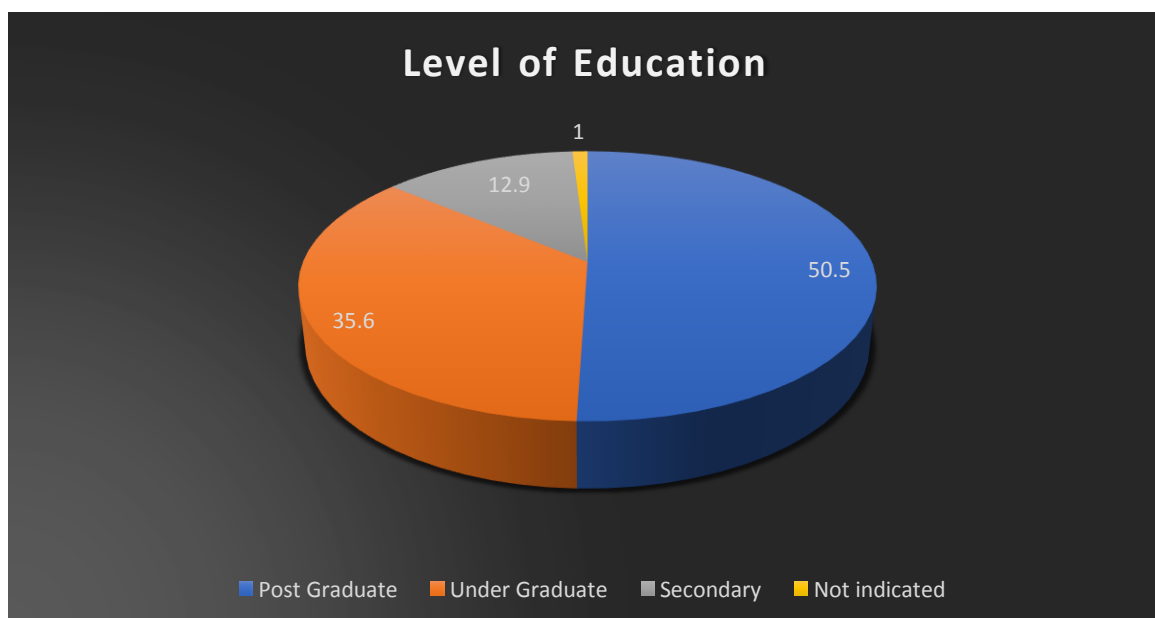
Figure 4.4 shows clear indication that most of the SMEs in Rivers State are managed by entrepreneurs at the age bracket of 31 to 40 years being a sizable youthful generation of the population.

#### LEVEL OF EDUCATION

The participants indicated their levels of education as it is summarized in Table 4.6 below. Table 4.6 Participants Level of Education

Level of Education	Frequency	Percent
Post Graduate	51	50.5
Under Graduate	36	35.6
Secondary	13	12.9
Not indicated	1	1.0
Total	101	100.0

Figure 4.5 Level of Education

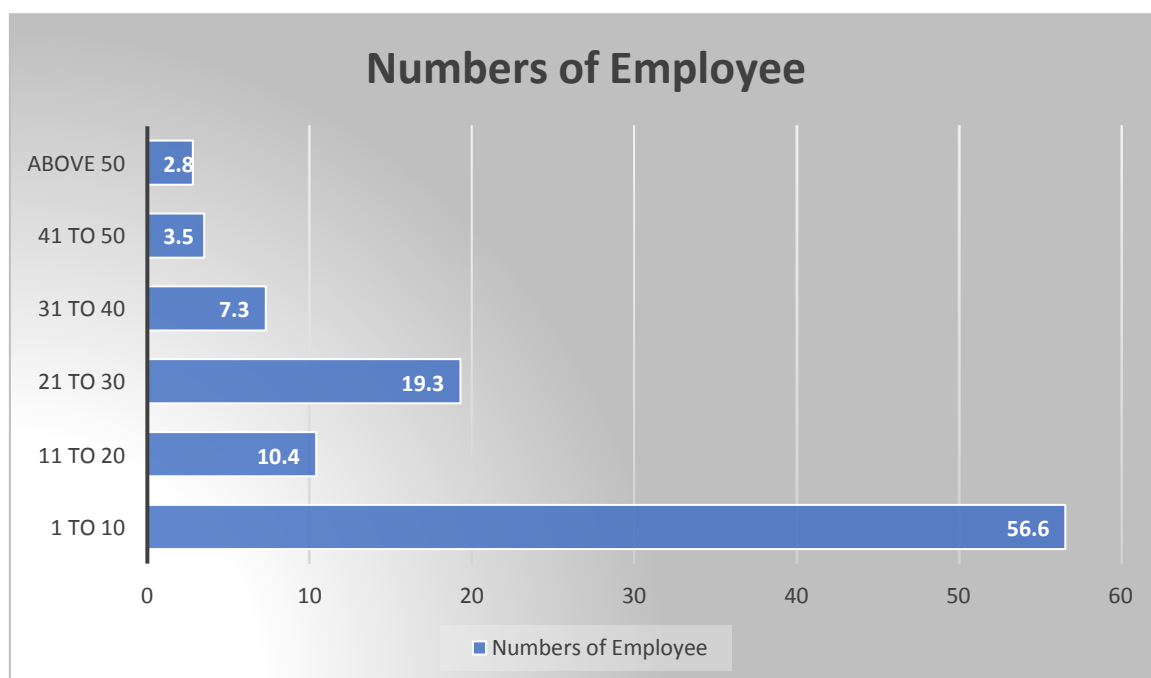


The study required the respondents to disclose their level of education. Majority of the respondents (50.5%) fell under the category of post graduate level, followed by 35.6% of the respondents had undergraduate degrees, 12.9% of the respondents had Secondary certificates while 1% of the respondents did not indicate their level of Education as shown in Figure 4.5. This was an indication that the respondents were well-versed on the topic of research and therefore, gave relevant data for this study.

**NUMBER OF EMPLOYEES IN THE ORGANIZATION**

Respondents also indicated the total number of employees working for their respective SMEs. From the figure 4.6 below, most of the SMEs employs 1-10 employees which represents 56.6% while the least of the respondent indicated their organizations have hired more than 50 employees representing 2.8% of the total respondents. This gives a clear definition of the SMEs as an enterprise which employs between 1 to 50 employees.

Figure 4.6 Number of Employees in organization



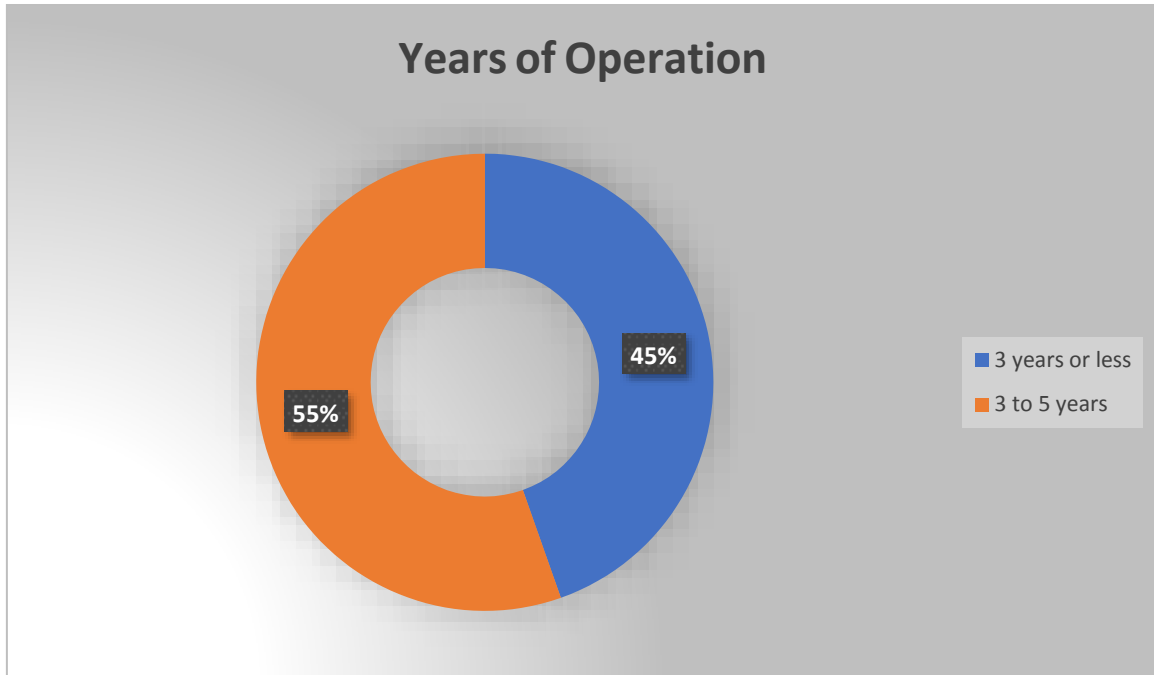
**NUMBER OF YEARS IN OPERATION**

Respondents were also asked to indicate the number of years their respective SMEs have been in business since establishment. Table 4.7 shows the distribution of SMEs by the respective number of years they have been in business.

Table 4.7 Period Respondents have been in Business

Years of Operation	Frequency	Percentage (%)
3 years or less	45	44.6
3 to 5 years	56	55.4
Total	101	100

Figure 4.7 Period Respondents have been in Business

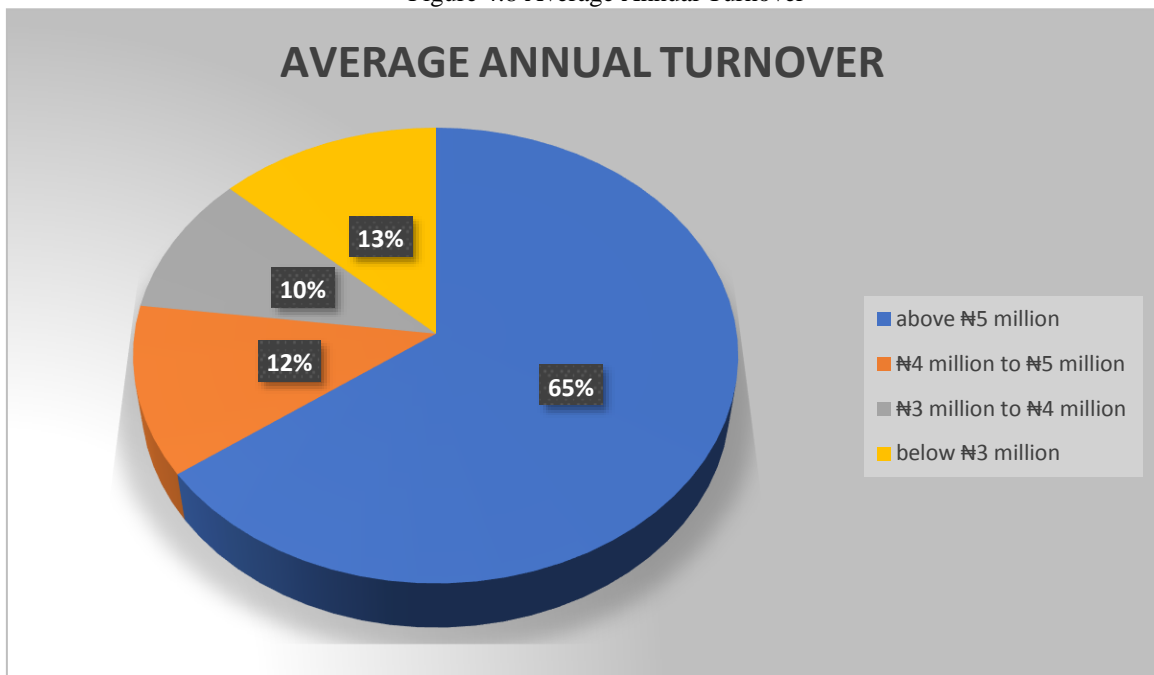


According to Table 4.7 and Figure 4.7, most of the participants (55.4%) had been operating their businesses for three to five years and the rest (44.6%) had been in business for less than three years.

**AVERAGE ANNUAL TURNOVER**

The study required the respondents to capture their annual turnover which would play a significant analysis in trying to establish whether the use of Fintech has any positive correlation to the increase in sales turnover. From the figure 4.8 below, 65% of the SMEs made a turnover above ₦5 million, followed by 12% of the SMEs at the range of ₦4 million to ₦5 million. 10% of the SMEs turnover was between ₦3 million to ₦4 million. 13% of the SMEs made an average annual turnover of below ₦3 million

Figure 4.8 Average Annual Turnover



**STUDY VARIABLES**

The researcher sought to establish the perception of respondents regarding the various variables in the study. Given that the questionnaire elicited responses on 5point Likert scale, the researcher established the means and standard deviations of the responses to assist in making inferences. The outcome has been presented in the following subsections.

**MOBILE MONEY AND GROWTH OF SMES**

Figure 4.9 Response rating on mobile money

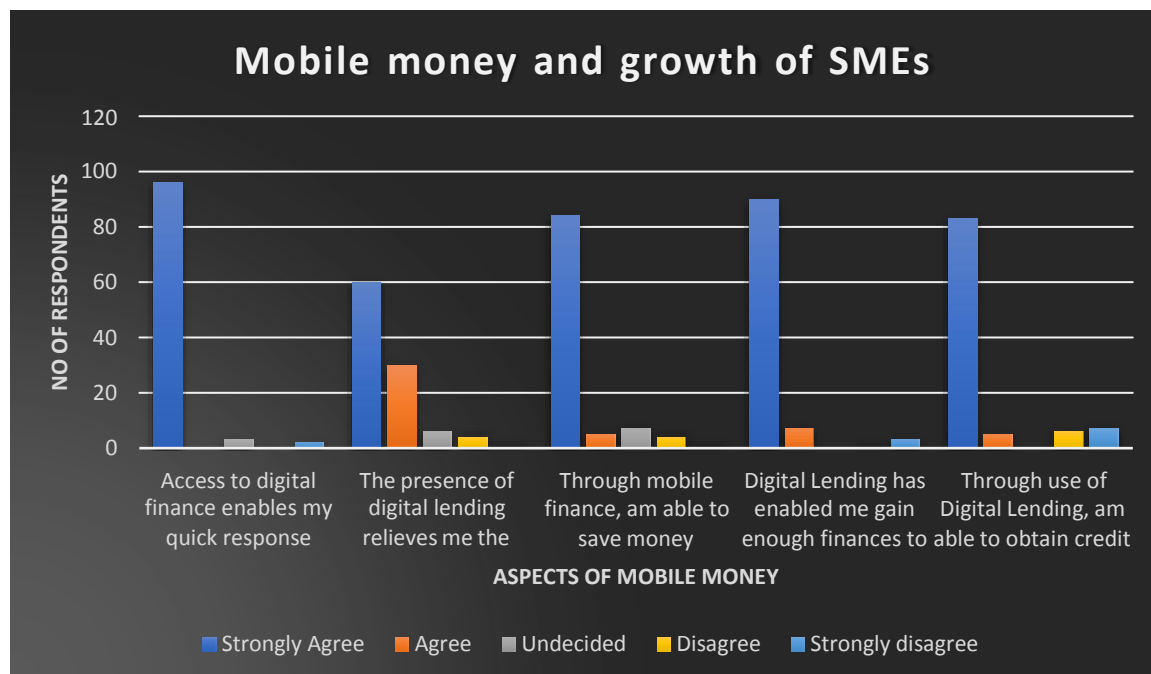
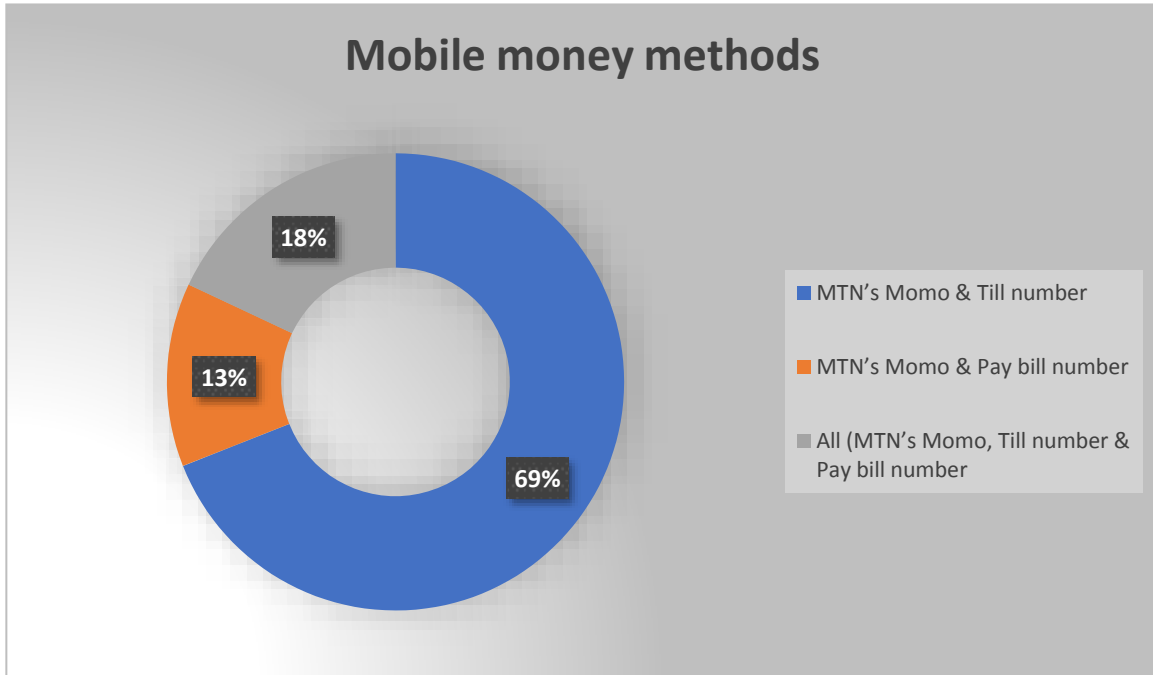


Figure 4.9 clearly indicated that the respondents were in agreement that they use mobile phone to pay their suppliers with a mean of 4.90 and a standard deviation of 0.614. Majority of the respondents comprising of 97.5% strongly agreed and/or strongly agreed that they used mobilephone to pay their suppliers. Respondents further agreed (M=4.76, SD=0.761) that they accept payments through mobile money from their clients with 92.7% of the respondents who agreed and/or strongly agree with the statement. Respondents also agreed that receiving payments through MTN’s Momo relieves them the problem of having so much money in their premises (M=4.90, SD=0.612) having 97.5% of them strongly agree and agree respectively with the statement. Also, majority of the respondents 84.8% strongly agreed they don’t receive cash from clients since they have fully adopted FinTech services (M=4.49, SD=0.228). In addition, respondents agreed (M=4.01, SD=0.923) that they transfer money through MTN’s Momo to their colleagues in business this being represented by 94% of the respondents. Respondents were also of the view that mobile payments have enhanced the efficiency of doing business (M=4.82, SD=0.770) having majority of the respondents 94.6% strongly agreeing with the statement. According to the findings of the study most of the SMEs use FinTech services especially mobile money in conducting their business as it is convenient for most of them in terms of time and resources. The results were in support with the conclusion made by (Must & Ludewig, 2010) in their study that Fintech has enhanced ease of sending and receiving money through mobile phones, access to mobile loans at an affordable processing cost, enhanced mobile savings and inclusiveness have been some of the catalytic reasons towards acceptability of the FinTech in developing countries. The researcher further sought to establish the more commonly used form of mobile payments and the results were presented in figure 4.10 below. Therefore, respondents were asked to indicate the most commonly method used to mobile money. The options at hand were MTN’s Momo & Till Number; MTN’s Momo & Pay bill; and MTN’s Momo, Pay bill & Till Number. The results of the respondents were displayed in the pie chart as shown in figure 4.10 below Figure 4.10 Respondents on the mode of mobile money used



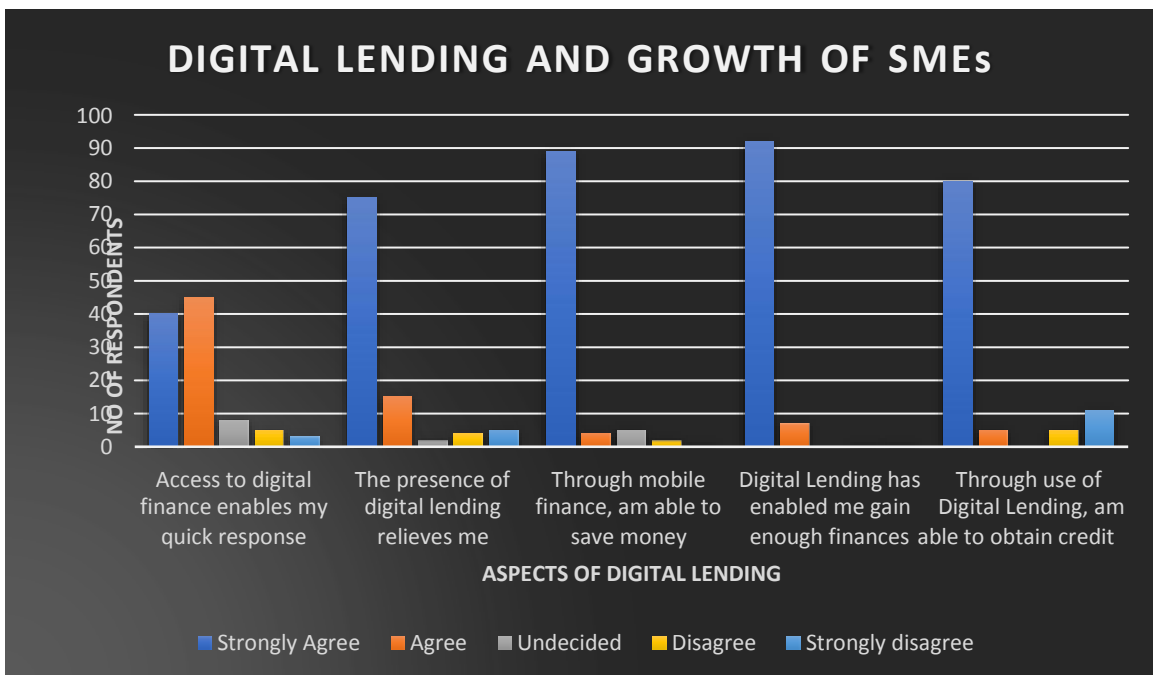


It was established that most of the respondents expressed confidence in the use of MTN's Momo & Till number together at 69%, followed by the ones who used MTN's Momo, pay bill& till number at 18% and lastly the ones who use MTN's Momo and Pay bill at 13%.

It is quite clear that, most of the small and medium enterprises were geared towards satisfying their customer needs through use of MTN's Momo and Till number, since there are no charges to the customer while using the Till number mode of payment.

**DIGITAL LENDING AND GROWTH OF SMEs**

Figure 4.11 Respondents on digital lending



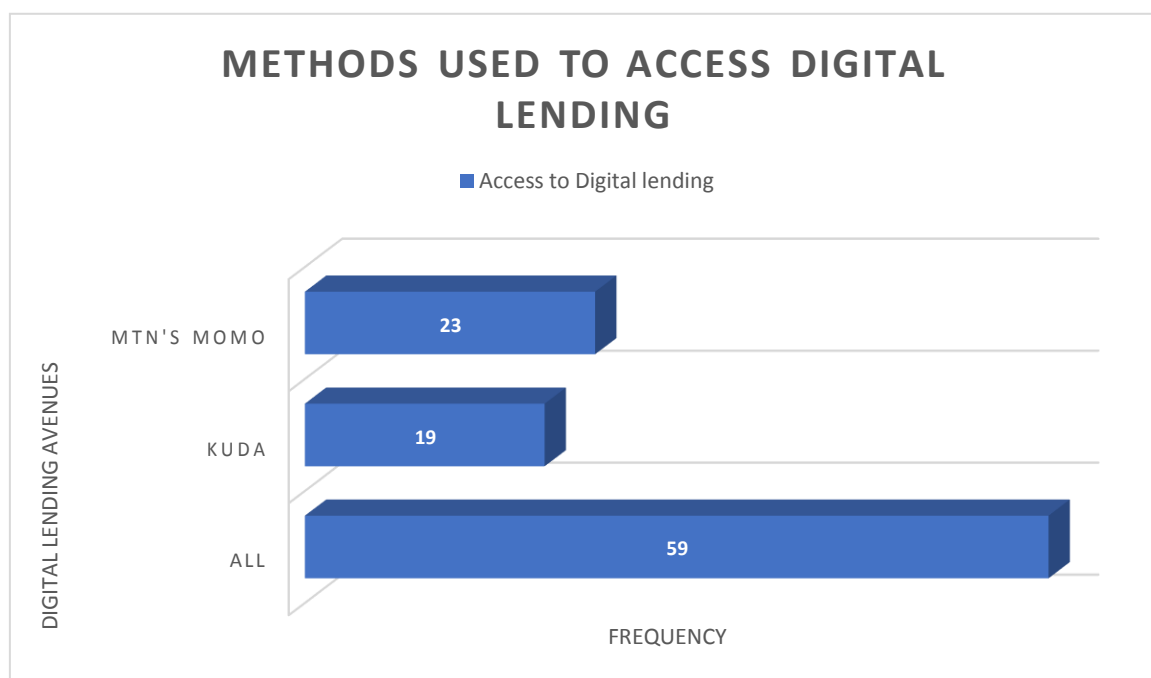
Respondents agreed with all mobile finance registration attributes that mean greater than 3.5 and less than 1.0.0. Standard deviations. The thoughts of the respondents were also not greatly scattered. From the findings above 89.6% of the respondents agreed (M=4.71, SD=.945) that through the use of mobile finance, they are able to

obtain credit from financial institutions. Moreover, mobile finance has made it possible for SME owners to receive ample financing to expand their company (M= 4.87, SD= 0.618), with 97.5 percent of respondents agreeing and/orstrongly agreeing with the assertion. In addition, 94.3% of respondents agreed that they can save money from their business procedures via cell phones and that 87.7% of respondents strongly agreed that the existence of mobile finance relieves them of the problems of needing to open a bank account. Furthermore, 80.7% of respondents accepted (M=4.11, SD=0.926) thataccess to mobile finance helps their swift response to the needs of customers.

From the findings it's evident that most of the SMEs have or utilize mobile banking as it is easy to access and one doesn't have to travel to the bank physically. Also, most of the SMEs have applied for loans for various purposes through their mobile phones as it doesn't need collateral and other bureaucracies that hinder access to lending. The findings of the study coincided with the conclusion made by (Udell, 2012) that technologies are best placed to simplify the complexities that are involved in access to finance and the levels of engagement between the financial institutions and the SMEs.

In addition, the researcher went further to establish the mobile finance services utilized by the respondents in their businesses. The findings of the analysis were as shown in figure 4.12 below

Figure 4.12 Methods used to access digital lending

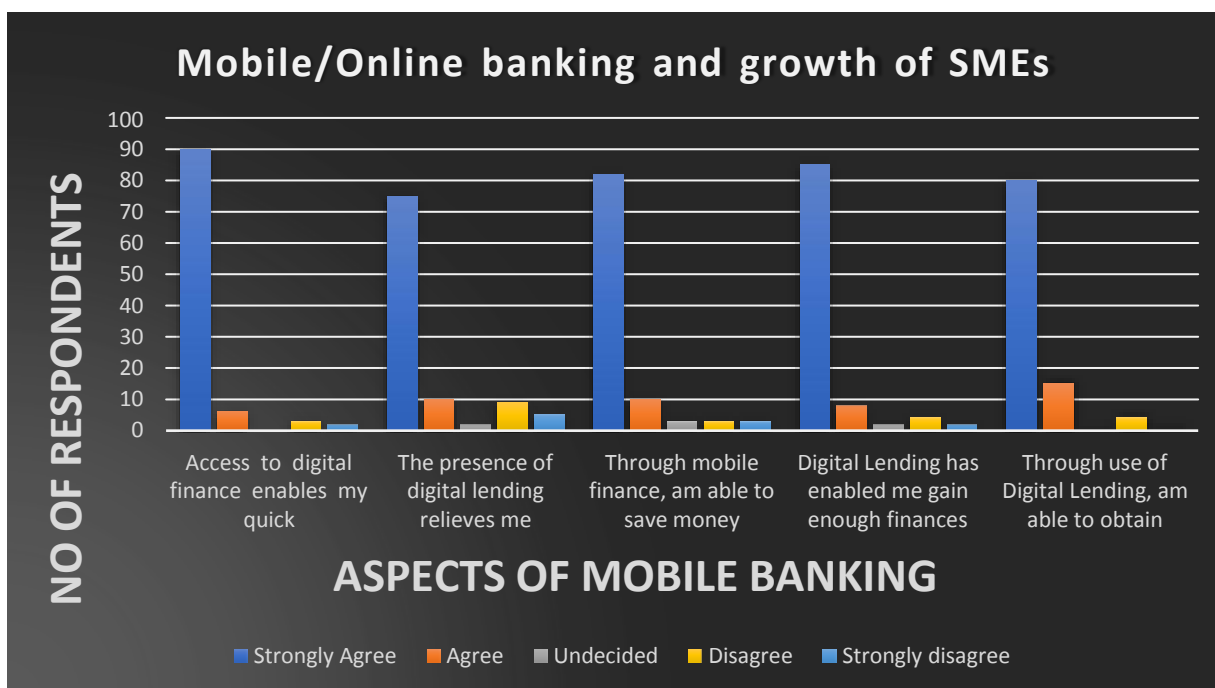


The finding indicated that, the majority of the respondents were more confident in using both Kuda and MTN’s Momo at 58.5%, with the notion that the avenues are aligned with the banks and hence limit of accessing the digital lending was higher. MTN’s Momo stood at 23.1% while Kuda at 18.4%. The result of the finding was that most of the SMEs have embraced the digital lending platform, considering there is no collateral compared to physical banks. Also, the speed of processing and accessing digital loans was considering more comparative compared to the normal bank loans which takes a minimum of ten working days to process and dispatch.

**MOBILE/ONLINE BANKING AND GROWTH OF SMES**

The study sought to know the ease of access to mobile banking. Respondents were asked to rate how convenient and how fast mobile banking was in enhancing growth of their business by selecting ‘strongly agree’, ‘agree’, ‘undecided’, ‘disagree’ or ‘strongly disagree’. From the ratings, it was clear that mobile banking was more embraced as described below. Their ratings are summarized in Figure 4.13

Figure 4.13 Respondents on use of mobile/online banking



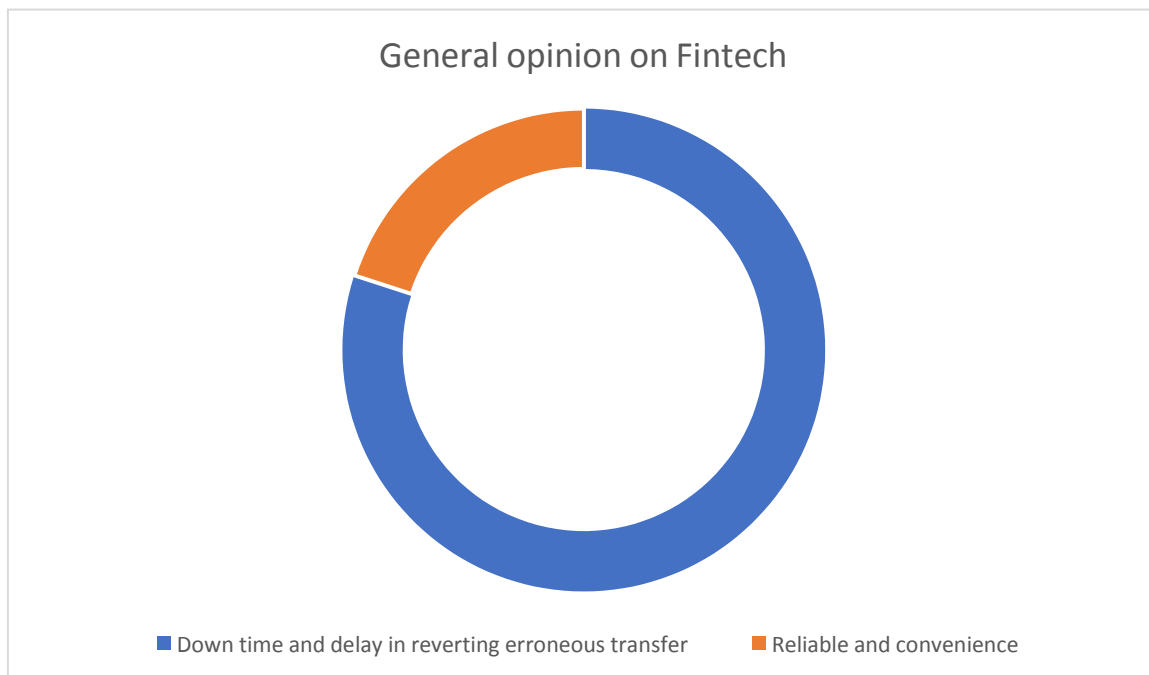
From the figure 4.13 above, 91.8% of the respondents agreed that mobile banking enables them to track transactions in their bank (M=4.73, SD=0.909). A further 89.2% of the respondents agreed that they are able to access their account balances through their phones (M=4.39, SD=.934). Further 87.3% of the respondents agreed that they are able to make deposits to their bank accounts through mobile banking (M=4.24, SD=.917) while 90.9% agreed that the presence of mobile banking has prevented theft of money that arises from storing a lot of money in the business (M=4.12, SD=.863). On the other hand, 94% of the respondents agreed (M=4.31, SD=.827) that they rely on mobile banking for all their banking transactions. Finally, 74.7% of the respondents agreed that online banking is convenient in terms of time and cost of transaction.

From the findings, we get to see that a majority of the SMEs agree that mobile banking is an easy way of accessing and monitoring the business account as it saves time and one only needs access to a mobile phone. Otiso *et al.* (2013) conclusion of their study aligned with the finding of the current study that a significant number of the SMEs have aligned themselves in use of mobile banking in place of traditional banking, since they are in a position to obtain both information and transactional services in their mobile phones

Figure 4.14 below reports the general feel of the respondents in relation to Fintech as a new mode of business operation. Majority of the respondents at 79.7% expressed reservations on the time lag especially when one transfer’s funds to a wrong account, where it takes more than 24 hours to reverse the funds. Most respondents felt this has caused them loss of money and time in following up for the refund. On the other hand, 20.3% of the respondents strongly felt that FinTech was more reliable and convenient. From examining how respondents rated convenience and speed of accessing mobile money in relation to other forms of banking and ease of accessing the mobile banking it is possible to conclude that mobile banking is easily accessible and easy to

operate for the MSEs in the study. This has a significant effect on growth of SMEs since they can track their transactions. Furthermore, it mostly saves time one has to go to the bank thus one need not move from the premise since its readily available through mobile phone.

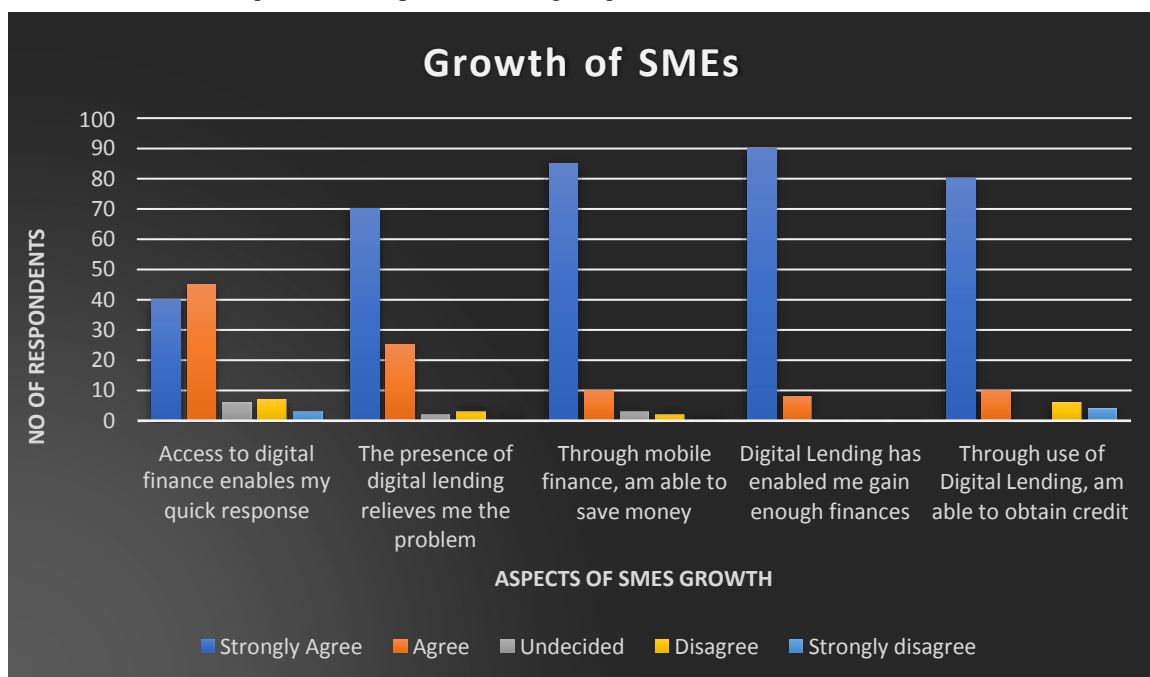
Figure 4.14 Respondent on general opinion on FinTech



**GROWTH OF SMES**

The study evaluated the understanding of the respondents on how Fintech has enhanced growth of the small and medium enterprises in Rivers State. Thus, the interviewees were asked to indicate the perception of growth of their businesses since they started using mobile money. They were required to rate changes in sales volumes, customer base, sales revenue, operation cost and market value of the business. The respondents were to show how strongly they opposed, opposed, undecided, disagreed with or strongly disagreed with each of the five main areas chosen. Figure 4.15 is a summary of their response

Figure 4.15 Respondents rating on growth of SMEs in Rivers State



The researcher found that 63.3% of respondents agreed that the use of FinTech services has improved their sales volume growth over the past three years (M=3.37, SD=1.434) while 83.2% agreed that the use of FinTech services has contributed to a rise in their company customer base (M=4.04, SD=.1.135). On average, 83.2% of respondents accepted that their company had encountered increased sales revenue over the last three years (M=4.03, SD=1.122). In addition, 81.7% of respondents agreed (M=4.03, SD=.1.063) that by the time they started using FinTech, they have seen a decrease in operational costs in their companies and that FinTech systems have provided alternative sources of credit from banks that are difficult to access. Finally, 81.1% of the respondents agreed that adoption of FinTech has resulted to an increase in market value and share of their business (M=3.99, SD=1.081).

From these findings there was a direct relation between effect of FinTech and growth of SMEs. This is so because from the data, businesses that adopt the various FinTech services have seen some growth in their business as indicated by the number of respondents who agree and strongly agree that FinTech has had a positive impact on their business. The study by (Gok, 2007) concluded that Small and Medium Enterprises that were making use of technology and knowledge to innovate and develop high value-added products of good quality, were able to compete globally achieving higher growth than those who did not embrace technology in running their businesses.

**DIAGNOSTIC TESTS**

**NORMALITY / DESCRIPTIVE STATISTICS**

The descriptive statistics results for the study were displayed in table below Table 4.8 Descriptive statistics results

Variables	Mean	Std. Deviation	N
Mobile money	4.8	0.611	316
Digital Lending	4.58	0.631	316
Online/mobile banking	4.28	0.634	316
Growth of SMEs	3.89	1.02	316

The researcher was able to conclude the data was normally distributed since the mean were almost similar, while the standard deviation between variables was almost at the same range.

**CORRELATION ANALYSIS**

In order to establish if there existed any relationship between the study variables, Pearson correlation coefficient analysis was performed. A correlation of 1 shows a perfect positive correlation while correlation of 0 or value close to zero shows no relationship or rather weak relationship respectively. -1 value, shows a negative perfect relationship and values close to it have strong negative relationship. The table below shows the value of Pearson correlations for the variables.

Table 4.9 Correlation Analysis

Variables		Mobile money	Digital Lending	Online/mobile banking	Growth of SMEs
Mobile money	Pearson Correlation Sig. (2-tailed) N	1  316			
Digital Lending	Pearson Correlation Sig. (2-tailed) N	.774**  .000 316	1  316		
Online/mobile banking	Pearson Correlation Sig. (2-tailed) N	.416**  .000	.457**  .000	1	

		316	316		
Growth of SMEs	Pearson CorrelationSig. (2-tailed)	.295**	.280**	.385**	1
	N	.000	.000	.000	316
		316	316	316	

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

In the table 4.9 key interest was on the correlation between the dependent variable (growth of SMEs) with the independent variables (Mobile money, digital lending and mobile/online banking). The study concludes that, there was a significant relationship (Sig 0.000) between growth of SMEs and mobile money, as well as weak correlation (r=0.295) at the 0.01 level in a two tailed test. Secondly, there was a significant relationship (Sig 0.000) between growth of SMEs and digital lending with a weak correlation (r=0.280) at the 0.01 level in a two tailed test. Finally, there was significant relationship (Sig 0.000) between growth of SMEs and mobile/online banking with a weak correlation (r=0.385) at the 0.01 level in a two tailed test. From the results we can conclude that, the topic of the study “Significant Effects of Fintech on growth of SMEs in Rivers State” was valid as all the variables exhibited positive relationship despite the weak correlation.

**MULTICOLLINEARITY USING VARIANCE INFLATION FACTORS (VIF)** Multicollinearity measures the inter-correlation between predictor variables. Independent variables should have low correlation with other independent variables. If the tolerance value is > 0.2, then the multicollinearity is not significant. In addition, if the variance inflation factor (VIF) is < 5.0, then multicollinearity does not affect the model fit. The result of the study is reflected in table 4.10

Table 4.10 Results of coefficients on predictor variables

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	.384	.466		.825	.410		
Mobile money	.244	.137	.146	1.784	.075	.396	2.526
Digital Lending	.038	.135	.024	.282	.778	.379	2.642
Online/mobile banking	.505	.094	.314	5.382	.000	.781	1.280

a. Dependent Variable: Growth of SMEs

From the study, all the predictor variables have a tolerance above 0.2 threshold with mobile banking at 0.396, digital lending at 0.379 and online/mobile banking at 0.781. Furthermore, the variance inflation factor (VIF) for all the independent variables was less than the set standard of 5.0, whereby mobile money VIF was 2.526, digital lending VIF was 2.642 and mobile/online banking VIF was 1.28. The researcher concluded that there was no significant collinearity between the independent variables and hence fit good to the regression model.

**HOMOSCEDASTICITY OF VARIABLES**

Homoscedasticity articulates how much of an error the regression equation made with respect in predicting individual values in data set. If the error term is not constant then the data suffers from heteroscedasticity.

Figure 4.16 Residual distribution analysis

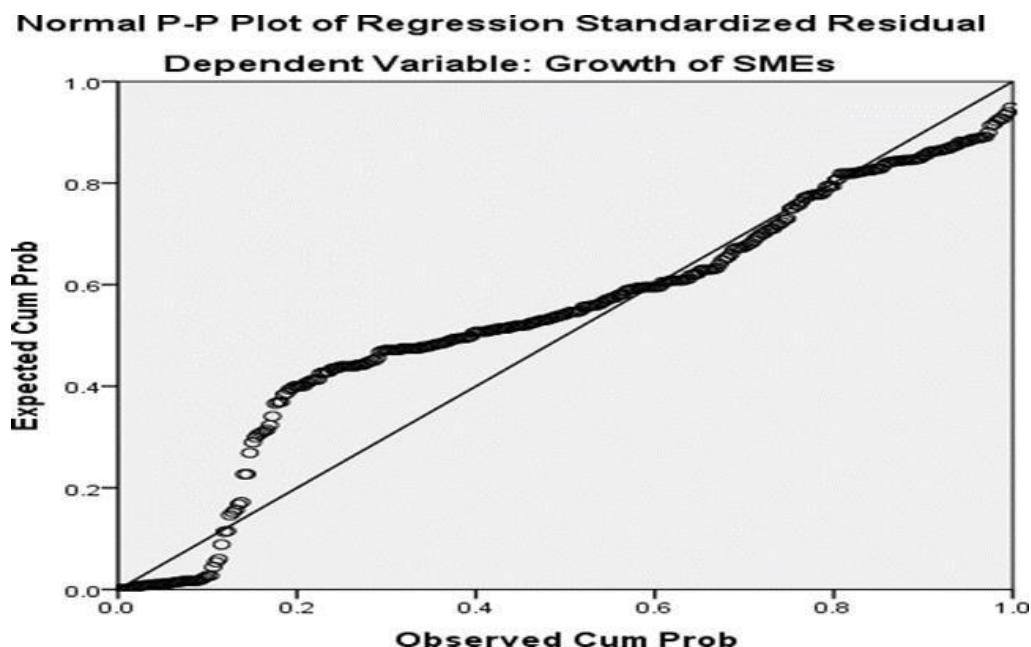


Figure 4.16 clearly indicate that the residual in the data were equally distributed as they were within line of good fit with minor variation.

**MODEL FITTING**

A linear multiple regression analysis was carried out to establish the linear relationship between growth of SMES and Fintech. Likert scales were used to measure the outcome variable which was growth of SMES as well as the three predictor variables of Fintech namely: mobile money, digital lending and mobile/online banking. A total score was computed for each variable from the likert scales and used in the regression analysis. The researcher predicted that the following regression model would best describe the linear relationship between the four variables:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where;

$Y$  = Dependent Variable (SMES Growth)

$\beta_1, \dots, \beta_3$  = coefficient for independent Variables  $\beta_0$  = the constant

$X_1$  = Mobile money  $X_2$  = Digital lending

$X_3$  = Mobile/Online banking

$\epsilon$  = error term.

A regression analysis was undertaken and the findings stipulated below.

**REGRESSION SUMMARY**

In the regression model summary table, the coefficient of determination that is denoted by R squared is given by 0.163. It shows the strength in which the model is able to predict the dependent variable. Considering all variables demonstrated statistically significant relationships, a regression was conducted to determine the level of significance. The findings in table 4.11 show an adjusted R squared of (.163); which mean that about 16% of growth in SMES was attributed to mobile money, digital lending and mobile/online banking, while the remaining 84% was ascribed by other factors not considered in this study

Table 4.11 Regression summary model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F	df1	df2	Sig. F Change
1	.413 <sup>a</sup>	.171	.163	.933	.171	21.413	3	312	.000

a. Predictors: (Constant), Online/mobile banking, Mobile money, Digital Lending

### ANALYSIS OF VARIANCE

Analysis of variance is conducted in order to determine the importance of the regression model and whether the null hypothesis should be discarded or not and the results are shown in the table below

Table 4.12 Analysis of Variance (ANOVA) results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.924	3	18.641	21.413	.000 <sup>b</sup>
	Residual	271.614	312	.871		
	Total	327.539	315			

a. Dependent Variable: Growth of SMEs

b. Predictors: (Constant), X1 = Mobile money X2 = Digital Lending, X3 = Online/mobile banking.

The significance of the model is determined by comparing the p value with the alpha value. If the p value is greater than the alpha value then the model is said to be insignificant and if it is less than the alpha it is said to be significant. The regression analysis is measured at 95 degrees of freedom which means the alpha value is 0.05. According to the above table, the value of P is shown as 0.000 which shows that it is less than the alpha value. We therefore come to a conclusion that the relationship between effect of financial technology on growth of small and medium enterprises in Rivers State is significant ( $F(3, 312) = 21.413, p = 0.000$ ).

In order to determine whether to reject or fail the null hypothesis we compare the F statistic and the calculated value of F as shown in the above table 4.12. If the calculated value was greater than the F statistic hence null hypothesis was rejected. As per the topic under study, the null hypothesis states that there is no effect of FinTech on growth of SMEs in Rivers State. The calculated value of F is 21.413 while the F statistic at an alpha of 0.05 and 312-degrees freedom is 1.637. The calculated value is greater than the F statistic which means we reject the null hypothesis. In conclusion we say that there is a positive significant effect of FinTech on growth of SMEs in Rivers State.

### REGRESSION COEFFICIENTS

The coefficient that can be used by the model in predicting the dependent variable are shown in the table 4.13 below

Table 4.13 Regression Coefficients analysis

Model		Unstandardized		Standardized	t	Sig.
		Coefficients B	Standard Error			
1	(Constant)	.384	.466		.825	.410
	Mobile money	.244	.137	.146	1.784	.075
	Digital Lending	.038	.135	.024	.282	.778



Online/mobile banking	.505	.094	.314	5.382	.000
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As shown in table 4.12 the regression model was significant ( $F(3, 312) = 21.413, p = 0.000$ )

where Fintech predictors do predict growth of SMEs. However, looking at each of the coefficients separately as indicated in table 4.12, we realize that only mobile/online banking has a significant ( $r = 0.314, p = 0.000$ ) influence on the dependent variable (growth of the SMEs) while mobile money and digital lending did not have a significant ( $p > 0.05$ ) influence on the growth of SMEs.

The coefficients  $\beta_0, \beta_1, \beta_2, \beta_3$  are given by, 0.384, 0.244, 0.038, 0.505 and the error term  $\epsilon$  is denoted by is given by 0.466. The model therefore becomes

$$Y = 0.384 + 0.244X_1 + 0.038X_2 + 0.505X_3 + 0.466$$

This model therefore may be used to show the effect of any of the independent variable on growth of SMEs. For instance, a unit change in  $X_1$  (mobile money) would result to 24.4% increase in  $Y$  (Growth of SMEs), while unit change in  $X_2$  would result to 3.8% increase in  $Y$  and finally a unit change in  $X_3$  would result to 50.5% increase in  $Y$

### **DISCUSSION OF THE FINDINGS**

The study focused on three specific objectives namely mobile money, digital lending and mobile/online banking and their effect towards growth of the SMEs in Rivers State. From the regression analysis it was established that mobile money had a positive relationship ( $r = 0.295, p < 0.001$ ) with the growth of the SMEs. Furthermore, the study concluded that mobile money was not a significant ( $p > 0.05$ ) predictor on growth of SMEs as shown in table 4.13. The study agreed to the findings of (Govil et al., 2014) that there was positive relationship between mobile finance and economic growth of businesses. The study on the contrary did not agree to the findings of (Must and Ludewig, 2010) which concluded that ease of receiving and sending money through mobile phones has been some of the catalyst towards acceptability of the Fintech in developing countries. This was exhibited by weak correlation between mobile money and growth of SMEs which could have been contributed by the fact that most financial institutions have come up with more innovative ways of sending and receiving funds in bulk like Real Time Gross Settlement (RTGS)

Digital lending was found to have a positive relationship ( $r = 0.28, p < 0.001$ ) with growth of SMEs though not statistically significant ( $p = 0.778$ ) to influence on the development of small and medium enterprises in Rivers State. The study was in agreement with the findings of (Wanjohi, 2010; Birundu, 2015; Berger et al., 2019; and Badulescu, 2011) that availability of the credit and loans at different levels of product and service development catalysis the growth of SMEs. However, the study painted a different opinion contrary to that of (Must and Ludewig, 2010) which concluded that access to credit by SMEs is complemented by savings. The study established that most of the SMEs average annual turnover as above 5 million Naira and indication that, they required a huge credit for turnaround in their operations which could not have been offered by FinTech platform. According to Central Bank Rates (CBN), the lending rate stands at 11.94%, thus the commercial bank lending (CBL) should be 15.94% per annum. The CBL rates seemed more favorable than most of the Fintech whose lending rate was 4.5% per month translating to 54% per annum which was quite expensive. The high cost of lending could have resulted to most of the SMEs shying off from obtaining credit from fintech platform. Furthermore, most of the financial institutions have continued to introduce other credit products like overdraft, invoice discounting, letter of credit which did not require any collateral. Hence the SMEs required to enhance their level of interactions with the financial manager, their capability in marketing strategy, financial operations and technology as concluded by (Beck et al., 2011).

Finally, the study established that mobile/online banking had a positive relationship ( $r = 0.385, p < 0.001$ ) with the growth of SMEs. In addition, it was noticed that mobile banking had statistically significant ( $p < 0.001$ ) influence on the growth of the SMEs in Rivers State. The study was in agreement with the findings of (Otiso et al., 2013) which concluded that significant number of the SMEs have aligned themselves in use of mobile banking in place of traditional banking since they are able to obtain both information and transactional services in their mobile phones. Most of the entrepreneurs were able to access bank balances, transfer funds from one bank account to another through the mobiles phones thus affirming the significant influence of the mobile banking over digital lending and mobile money on the growth of SMEs in Rivers State.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **INTRODUCTION**

The chapter present the summary and discussion of the key data findings for each objective, conclusion drawn on the finding highlighted and recommendation drawn were focused on addressing the objective of the study. The researcher then presents recommendation for futureresearch and the major limitation of the study.

#### **SUMMARY OF FINDINGS**

##### **GROWTH OF SMES**

SME growth was assessed using five benchmarks described as follows: increased sales volume over the past three years, increased customer base, increased revenue, decreased operating costs and increase in market value and share of activity. Over 63% of those surveyed agreed that the sales volume was while over 80% indicated a customer base, revenue, market share increased and operating costs decreased due to the use of the Fintech platform. However, 31% of respondents are of the opinion against the increase in sales volume resulting from the use of Fintech services. Overall, the study determined that SMEs in Rivers State have grown through the use of Fintech services.

##### **MOBILE MONEY**

The study aimed to establish how mobile money has improved the growth of SMEs. Over 80% of respondents said they were happy with using mobile money to make payments to vendors and other businesses, place orders, receive payments, reduce office cash flow, thus improving operational efficiency. In addition, 69% of respondents preferred to use both MTN MoMo and Till Number for mobile money transactions. From the results of the regression analysis, it was shown that mobile money did not have a significant influence on the growth of SMEs in Rivers State, which could be due to the general feeling that providers mobile services have not put in place an effective and adequate mechanism to reverse the remittances sent. to the wrong recipient in a timely manner.

##### **DIGITAL LENDING**

The study, on the other hand, showed that over 80% of entrepreneurs were successful in obtaining credit, their credit limits increased, they were able to save, they did not have to physically go to the bank. to process the loan and were able to meet the needs of their clients more effectively and efficiently. The study also found a significant positive correlation (sig = 0.000) between digital lending and SME growth. He then found that there is a clear linear relationship between the two variables, which means that if one variable increases, the other variables increase accordingly. The digital lending analyzed in the regression analysis showed its impact on the growth of SMEs in Rivers State. The study also found that the majority of respondents were comfortable using both Kuda and MTN MoMo as platforms to access digital loans. However, the regression model analysis determined that there was no significant influence of digital lending on the growth of SMEs, which could be due to the loan limit that an entrepreneur can access, this which may not be enough to stimulate the growth of the business.

##### **MOBILE/ONLINE BANKING**

The study also found that mobile banking enabled more than 90% of entrepreneurs to track transactions in their bank, access their account balances, make deposits to their bank accounts and make transactions. banking transactions using their own mobile phones. In addition, respondents were convinced that there was a reduction in fraud in the organization due to the reduction in cash flow in the office. Regression analysis indicated that mobile banking services had a positive and significant influence on the growth of SMEs.

#### **CONCLUSIONS**

The study concluded that FinTech had a significant positive relationship on the growth of SMEs in Rivers State. However, looking at each predictor separately, mobile / online banking has had a significant influence on the growth of SMEs, unlike mobile money and digital lending. The study also found a weak correlation between Fintech and SME growth, which could be the result of 83% of the total variation in SME growth not explained in

the regression model. Finally, the study concluded that the increased use of mobile money has a positive influence on the growth of small and medium-sized enterprises in Rivers State, given the expansion of SMEs from a single company managed to more employees, increases sales volume and revenue is a demonstration of the growth of SMEs.

## **RECOMMENDATIONS**

The researcher advises the mobile phone service provider to make efforts to advertise their services in order to allow as many business people as possible to use the mobile money products. This can be achieved through clear advertisements that would serve as a source list of the importance of mobile money services to your business operations. On the other hand, financial institutions stand to benefit from the increased use of mobile money services to form partnerships with mobile phone service providers and provide flexible financial services to merchants. In addition, the study recommends that SME merchants implement mobile money services in their businesses, as this has proven to be a business development tool. Using mobile money services has been shown to have many benefits, including protecting merchants from fraud due to excessive liquidity availability. The simple steps to assess the growth of SMEs remains a critical area where special attention is required. SMEs have generally not accepted the financial initiatives accepted by large companies. Accounting is inconsistent, although it is a valuable source of business revenue, employee data, and information on business growth. It may be helpful to think of other realistic resources to close the gap when researching data on SMEs. In this regard, the MTN (MTN MoMo) service could aim to perform simple arithmetic calculations such as total income and total expenditure over a given period.

Finally, fintech service providers should improvise new and effective ways to resolve the delay encountered with incorrect transfer of funds while using mobile phones. This would involve reaching more entrepreneurs and adopting Fintech as a platform to improve their business growth.

## **RECOMMENDATIONS FOR FUTURE RESEARCH**

The research only covered three variables from mobile finance, mobile money and online banking to determine the effect of FinTech on SME growth, a benchmarking study should be conducted to examine other variables that are not covered by this study. The research focused only on micro and small enterprises in Rivers State, where other medium and large enterprises need to be covered. The study recommends that research be carried out in the future as several new SMEs are registered in different categories each year.

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