Innovations

Fintech Innovations, Regulations and Sustainable Development in Nigeria

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Abstract: *This study examined the nexus between fintech innovations, regulations, and Nigeria's sustainable development. The study used primary data through the usage of questionnaire shared to FinTech operators in Nigeria who are registered members of the FinTech Association of Nigeria (Fintech NGR). The sourced data was estimated using the structural equation model. Findings showed that first fintech has no significant influence on the variable no poverty. Also, Fintech is believed to have a potential contribution to the SDG4 goal by providing financial services that support education and training. Finally, this study finds out that regulations help to enhance fintech products. The study recommended that the government together with fintech firms should focus on low-income earners and underserved populations to provide them with micro-loans, insurance products, and saving tools. The government can also empower these citizens through various entrepreneurial programs.*

Keywords: *Fintech, Fintech Innovations, Regulations, Sustainable Development Goals, Poverty*

1.1 Introduction

It is widely established that the debate on financial innovation and its effect on development can Schumpeter's theory of economic development emphasizes the importance of innovation and entrepreneurship as the driving force behind economic growth. He posits that entrepreneurs are the agents of change in the economy and are responsible for introducing new products, processes, and services. Schumpeter calls this process of creative destruction, where entrepreneurs destroy old methods of production and create new ones, leading to higher productivity and economic growth. Schumpeter argues that innovation is not just about inventing new things but also includes the successful commercialization of

those inventions in the market. This requires entrepreneurs who are willing to take risks and invest resources in their ventures (Juliana et al., 2021).

In Nigeria's fintech landscape, innovation and entrepreneurship have played a significant role in the growth of the industry. According to a report by Ernst and Young (2021), Nigeria's fintech industry has seen significant growth in recent years, with an estimated 210 fintech companies operating in the country. These companies have introduced new products and services such as mobile payments, digital lending, and block chain-based solutions that have disrupted traditional financial services. The introduction of these fintech innovations has led to increased financial inclusion and improved access to financial services for the unbanked and under banked population in Nigeria (Ernst and Young, 2021).

However, with the growth of the fintech industry, there is a need for regulations to ensure that the industry operates in a safe and secure environment. Schumpeter's theory emphasizes the importance of regulations that promote innovation rather than stifling it. He argues that regulations should not be used to protect existing firms from new entrants but should be designed to encourage competition and ensure a level playing field for all firms (Cherif & Hasanov, 2021). This is essential for sustainable economic growth.

The United Nations (UN) introduced the Sustainable Development Goals (SDGs) in 2015 as a blueprint to achieve a sustainable future for all. The SDGs consist of 17 interconnected goals that address social, economic, and environmental challenges faced by humanity (Shin & Choi, 2019). The SDGs aim to end poverty, and hunger, promote good health, education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, and other development issues by 2030. Achieving the SDGs will accelerate development by improving the well-being of people, protecting the planet, and increasing prosperity for all.

In Nigeria, the attainment of the SDGs will accelerate development through various means. The SDGs provide a framework for sustainable development, and the fintech industry can play a significant role in achieving these goals (Gardner et al., 2017).Firstly, by achieving SDG 1which aims to eradicate poverty in all its forms and dimensions, people will have access to basic needs such as food, shelter, and healthcare, which will improve their quality of life and reduce poverty levels. Fintech has the potential to contribute to poverty reduction by providing financial services to individuals and businesses that were previously excluded from the formal financial system. According to a report by the World Bank, the use of digital financial services can reduce poverty and increase income by improving access to credit, savings, and insurance (World Bank, 2014). Fintech platforms such as microfinance institutions, mobile banking, and peer-to-peer lending have already shown promise in helping to reduce poverty in developing countries (Kshetri, 2018). A study by Demirguc-Kunt and Klapper (2018) found that fintech has the potential to

reduce the cost of providing financial services, which can in turn increase access to credit and savings for low-income households. This increased access to finance can help individuals and households to build assets and improve their economic well-being.

Secondly, SDG 4 which aims to ensure inclusive and equitable quality education can accelerate development by providing people with the skills and knowledge necessary for sustainable development. Education plays a vital role in reducing poverty and promoting economic growth. It equips people with the skills needed to participate in the labour market and entrepreneurship, which can increase income and improve standards of living (UNESCO, 2019). Fintech has the potential to contribute to this goal by providing financial services that support education and training. For example, Fintech platforms can offer low-cost loans for students or provide access to online education and training courses (Grunwald & Berg, 2018).

The development of fintech has enabled financial inclusion, which is a vital component of achieving SDG4. Financial inclusion is the provision of access to formal financial services to low-income earners, which is essential for promoting lifelong learning opportunities. According to Ojo, Abejide and Adewuyi (2021), fintech has provided digital solutions that have enabled access to financial services to individuals who were previously excluded from the financial system. For instance, mobile money platforms and digital lending have made it possible for individuals who were previously unbanked to access financial services, which can be used to pay for education and learning materials. Therefore, fintech has the potential to support SDG4 by enabling access to financial services.

In addition, fintech has the potential to enhance the quality of education by providing digital solutions that improve learning outcomes. According to Sarpong, Baah, and Andoh (2020), fintech has made it possible for educators to use digital platforms such as e-learning and Massive Open Online Courses (MOOCs) to enhance the delivery of education. Digital learning solutions have made it possible for learners to access educational content remotely, which was critical during the Covid-19 pandemic. Fintech has also enabled the development of educational applications that provide personalized learning experiences to learners, which can enhance learning outcomes. Therefore, fintech has the potential to support SDG4 by improving the quality of education.

However, the adoption of fintech in education has faced various challenges that must be addressed to support SDG4. One of the challenges is the lack of digital infrastructure, which hinders access to digital learning platforms. Sarpong et al. (2020), shared that developing countries face challenges in implementing digital learning solutions due to inadequate digital infrastructure such as internet connectivity and electricity. This hinders the adoption of fintech in education, which can limit access to educational materials and reduce the quality of education.

Therefore, addressing digital infrastructure challenges is critical for the adoption of fintech in education.

Another challenge facing the adoption of fintech in education is the lack of digital skills among educators and learners. The adoption of fintech in education requires individuals to have digital literacy skills, which are essential for using digital platforms. However, many educators and learners lack digital literacy skills, which can limit the adoption of fintech in education. Therefore, there is a need to develop digital literacy skills among educators and learners to support the adoption of fintech in education.

Thirdly, SDG 8 can help to create a virtuous cycle of economic growth and development, as it promotes inclusive and sustainable economic growth, which can lead to poverty reduction, improved social outcomes, and increased opportunities for employment and income generation. SDG 8 also emphasizes the importance of decent work and working conditions, which can help to promote social inclusion and reduce inequalities. Fintech has the potential to support this goal by facilitating access to credit for small and medium-sized enterprises (SMEs), which are key drivers of economic growth and job creation. Fintech platforms can offer alternative financing options to traditional banks, such as crowd funding and invoice financing (Kshetri, 2018).

According to UNDP (2019), fintech has the potential to support small and medium-sized enterprises (SMEs) by providing access to finance, improving their cash flow management, and reducing transaction costs. Fintech can also create new jobs in the financial sector, especially in the areas of digital banking and payment systems. This, in turn, can contribute to reducing poverty and inequality (Benedetti & Kostovetsky, 2018).

One of the main areas where fintech can contribute to achieving SDG8 is by improving access to finance, particularly in developing countries. As stated in a report by the World Bank (2018), there are still significant gaps in financial inclusion, with over 1.7 billion adults worldwide still unbanked. Fintech can provide innovative solutions to address this gap, such as mobile banking, peer-to-peer lending, and crowd funding platforms (Chen et al., 2021). These solutions can improve financial inclusion and promote entrepreneurship, which is vital for economic growth and job creation.

Another way that fintech can contribute to SDG8 is by enabling digital payments and remittances. Digital payments and remittances can improve financial inclusion, reduce transaction costs, and increase access to financial services for low-income households. According to a report by the International Fund for Agricultural Development (IFAD) (2019), fintech can help increase the volume and reduce the cost of remittances, which can contribute to poverty reduction and economic growth.

Fourthly, SDG 9 can help drive technological innovation and promote sustainable industrialization, which can create new opportunities for economic growth and

development. By investing in resilient infrastructure and promoting sustainable industrial practices, countries can build a strong foundation for sustainable development, which can support a range of economic activities, including manufacturing, trade, and services. Fintech has the potential to support this goal by promoting innovation and providing new and efficient ways of delivering financial services (Swan, 2015).

Fintech has the potential to contribute to SDG 9 by increasing access to financial services, especially in developing countries. According to UNCTAD, fintech can help reduce the cost of financial services, increase financial inclusion, and promote innovation in the financial sector (UNCTAD, 2020). For example, mobile banking services can provide affordable and accessible financial services to underserved populations, while block chain technology can improve the efficiency and security of financial transactions. Furthermore, fintech can promote entrepreneurship and job creation by facilitating access to finance for small and medium-sized enterprises (SMEs) (World Bank Group, 2020).Several studies have also highlighted the potential of fintech to promote sustainable industrialization and innovation. For instance, a study by Boadi et al. (2020) suggests that fintech can support the development of sustainable industries by providing innovative financial services and investment opportunities. Similarly, a study by Zavolokina et al. (2021) indicates that block chain technology can promote sustainable manufacturing by enhancing supply chain transparency.

However, the growth of FinTech especially in a developing country like Nigeria has also raised concerns about consumer protection, data privacy, and financial stability. In response, the Central Bank of Nigeria (CBN) has introduced regulations to govern the industry. CBN is the regulatory body responsible for overseeing the fintech sector in Nigeria. In 2018, the CBN released a regulatory framework for fintech companies, which provides guidelines for the operation of fintech companies in Nigeria (CBN, 2018). The framework covers areas such as capital requirements, consumer protection, data protection, and cyber security. For example, the CBN's Licensing Regime for Payment Service Providers (PSPs) requires all FinTech companies that provide payment services to obtain a license from the bank. The regulations also specify capital requirements, operational guidelines, and consumer protection standards.

The CBN has also set up a regulatory sandbox, which provides a safe environment for fintech companies to test their products and services without being subject to full regulatory requirements. The sandbox allows fintech companies to experiment with new ideas and innovations while ensuring that consumer protection is maintained.

It is against this background that this study explains the two-way relationship between fintech and SD Goals. Though, there are studies that adduce the digital divide as the legitimate reason; this is just a sufficient condition, the necessary condition is the regulation divide. Therefore, this study introduces a framework that

explains the mediation role of regulation on the relationship between fintech and SDGs outlined above. Similar to the study of Goo and Heo (2020), the current study will utilize the concept of a hierarchical framework to understand the aspect of regulation that is more sensitive to fintech.

2.1 Conceptual Review

Ediagbonya and Tioluwani (as cited by Ololade, 2024) reports that the swift advancement of financial technology (fintech) innovations offers a significant opportunity to improve global financial inclusion. By utilizing technologies such as mobile banking, block chain, and digital payments, fintech can provide financial services to unbanked and under banked populations. This, in turn, can help reduce economic disparities and promote inclusive growth.

Financial inclusion is about ensuring that all individuals and businesses, particularly those traditionally underserved by financial institutions, have access to financial services. Bertram, Nwankwo, and Onwuka (as cited by Ololade, 2024) defined financial inclusion as the accessibility and availability of financial services to all individuals, especially underserved and economically disadvantaged populations, at an affordable cost. It includes a wide array of financial products and services including savings, loans, insurance, and payment services.

Fintech regulation involves creating laws and guidelines to ensure the stability, security, and fairness of fintech services. According to Mohamed (as cited by Ololade, 2024) Fintech brings promising transformations to the banking and financial services industry by substantially lowering costs, diversifying services, and enhancing market and industrial stability. Najaf (as cited by Ololade, 2024).further reveals that the growth of fintech also introduces challenges, especially concerning regulatory compliance and risk management. Regulatory bodies must balance promoting innovation with regulating fintech companies to mitigate financial risks and maintain market stability.

Anagnostopoulos (as cited by Ololade, 2024) reports that the rise of Fintech has significant practical implications for regulatory compliance, as disruptive technological advancements require a reassessment of existing regulations and frameworks. The regulatory environment is adapting to the dynamic nature of Fintech, with regulators and banks addressing the impact of technological innovations on compliance.

Njinyah (as cited by Adeoye et al., 2024) stated that regulatory compliance is crucial for Fintech firms as it helps ensure their legitimacy, uphold their reputation, and maintain a positive corporate image. Effective regulation protects consumers and maintains market integrity. Proper regulatory frameworks are necessary to ensure that fintech innovations are secure, equitable, and beneficial in the long term, supporting SDGs related to justice and strong institutions. Uchechukwu (as cited by

Ololade, 2024) expressed that adhering to regulations boosts customer loyalty and competitive advantages, ultimately fostering a firm's innovation. Joia and Cordeiro (as cited by Ololade, 2024) went further to state that regulatory compliance offers a legal framework that enables Fintechs to create more streamlined processes, such as issuing credit and developing personalized insurance products for underserved markets.

Kurum (as cited by Ololade, 2024), reports that the regulatory frameworks governing Fintech activities cover various aspects, including anti-money laundering (AML), know your customer (KYC) requirements, and data protection regulations. To achieve regulatory compliance, Fintech firms can utilize RegTech solutions, implement risk management strategies, and engage with regulatory authorities (Senyo et al., 2022). Ng et al., (as cited by Ololade, 2024) argued that these regulations are essential for safeguarding consumers' interests and continually enhancing regulatory compliance. Njinyah et al., (as cited by Ololade, 2024) revealed that the interaction between government non-financial support and firms' regulatory compliance has been shown to influence innovation in Sub-Saharan Africa, underscoring the importance of government support in regulatory adherence. RegTech is crucial for monitoring internal operations, quickly identifying regulatory breaches, and enabling corrective measures, thereby supporting compliance (Senyo et al., 2022). Moreover, the use of RegTech and FinTech facilitates the continuous reinforcement and improvement of regulatory compliance, particularly in areas such as AML (Kurum, 2020).

Davradakis defines Fintech adoption as leveraging accessible communication channels, ensuring seamless and secure financial transactions, harnessing the widespread use of the internet, and automating the processing of information and transactions within the financial industry (as cited in Dwivedi, Alabdooli, & Dwivedi, 2021). It is said toentail incorporating novel and frequently intricate technologies into banking operations. (Khan, Khan, & Ghafoor, 2023).

2.1.1 Role of Fintech Regulation in Fintech Adoption

Imerman and Fabozzi (as cited in Arkanuddin, Saragih, & Nugroho, 2021) states that fintech regulation forms a critical component of the fintech ecosystem, structured around functional areas. They identify two primary regulatory approaches: first, regulating fintech companies, including the largest ones; and second, developing regulatory technology (RegTech) and supervisory technology (SupTech), incorporating big data analytics and automation. These regulations aim to ensure financial inclusion and effective oversight.

As the fintech industry expands globally, many countries are implementing support systems to enhance competitiveness and foster growth. One notable initiative is the introduction of fintech regulatory sandboxes, which provide a controlled

environment for testing new business models, innovative products, services, and delivery mechanisms without immediate regulatory repercussions. These sandboxes help address the stringent regulations imposed post-global financial crisis, balancing consumer protection with the need for innovation. Excessive regulation can stifle innovation, as seen in South Korea, where stringent laws have hindered fintech growth. Regulatory sandboxes allow for temporary regulatory relief to evaluate new technologies' impacts before full market release. This approach benefits both fintech companies and policymakers by offering valuable insights and attracting investment. Leading fintech nations, including the UK, have successfully implemented sandboxes, fostering a vibrant fintech ecosystem (Goo & Heo, 2020).

International organizations and national authorities are now taking into account the new dangers created by FinTech. In this regard, the FSB has established the Financial Innovation Network. The European Banking Authority is actively monitoring FinTech developments in the EU (European Banking Authority, 2019). Regardless of the fact that big data could play a significant role in asymmetric information, systemic risk in FinTech may still be a major worry. Vallée and Zeng (2019) argued that loan quality could decline, especially in regions where traditional banks have an advantage because of their access to soft information.

Overall, it appears that the regulatory system must be modified to new types of services, even if the regulator is cautious about the goal of lowering entry barriers. This is especially true when it comes to banking license, which is exclusively applicable to banking operations and can be pricey for businesses that offer fewer services. The matter of the regulatory perimeter should also be considered. The lack of a unified definition for FinTech is a significant challenge for regulators (FSB, 2019). All of these issues must be addressed in order to oversee FinTech activity in a way that benefits society while not putting the financial system at danger.

Noreen, Mia, Ghazali, & Ahmed, (2022) revealed that Government policies directly boost fintech adoption and financial inclusion. Various policies and strategies implemented by government like the Micro Credit Guarantee Facility (MCGF) program introduced by The State Bank of Pakistan (SBP) and the Credit Guarantee Scheme for Small and Rural Enterprises to facilitate loans for rural and agricultural development, housing, and underserved communities yielded positive results. Additionally, SBP invested in innovative fintech technologies to improve access to financial services, The National Financial Literacy Program for Youth (NPLP-Y) was launched to educate young people on money management. The "Banking on Equality-Gender Financial Inclusion" policy was introduced to encourage women's participation in the financial system.

The role of regulatory frameworks in promoting financial innovation and economic growth in Nigeria is crucial. Regulatory frameworks provide a conducive environment for innovation while ensuring consumer protection and systemic

stability. Adelowokan (as cited in Ogbeide & Obadeyi, 2023) established that clear rules and regulations encourage innovation while mitigating risks. A well-designed regulatory framework supports financial institutions and FinTech companies in developing innovative financial products and services, thereby enhancing economic growth through increased financial inclusion and a deeper financial sector.

Ogbuabor and Odo (as cited in Ogbeide & Obadeyi, 2023) shared through their findings that effective regulatory frameworks promote financial inclusion by removing barriers to entry, encouraging competition, and ensuring financial services are accessible and affordable to all. They further argued that regulations must balance promoting innovation and protecting consumers and systemic stability, as overly strict regulations can stifle innovation, while weak regulations can lead to market failures and systemic They also deepen the financial sector by fostering the development of new financial products that cater to diverse economic needs, promoting economic growth by creating business opportunities, increasing access to finance, and driving innovation.

Alimi and Oladeji (as cited in Ogbeide & Obadeyi, 2023) argued that to promote financial innovations and economic growth in Nigeria, several steps can be taken. First, encouraging financial literacy and education is crucial, as it enhances the adoption of financial innovation and improves overall financial well-being. Beck (as cited in Ogbeide & Obadeyi, 2023) states that strengthening the regulatory environment with clear and transparent regulations can encourage innovation while protecting consumers.

2.1.2 Fintech Adoption and Financial Inclusion in Nigeria

Looking at the Nigerian economy from the post Covid-19 crises, according to Kola-Oyeneyin, Kuyoro, & Olanrewaju, (2020) in a McKinsey and Company report on harnessing Nigeria’s fintech potential, he stated that fintech industry's development has been a beacon of hope in the Nigerian economy, poised to shine even brighter despite the challenges posed by the COVID-19 crisis. He discovered distribution of Fintech adoption in Nigeria’s landscape as highest in Lagos and among middle-class and affluent customers, driven by higher education levels, reliable digital infrastructure, and stronger economic power. Notabley, fintech usage is rapidly increasing in the south, with individuals utilizing USSD, agents, and cards at the entry level; 38 percent of mass-market and youth fintech users in this region engage with savings products. He further explains that fintech can bolster Nigeria's human capital development by enhancing financial inclusion and literacy. This is achieved by offering accessible and affordable financial products that are innovative and tailored to the needs of unbanked and underserved populations across various cultures, genders, and geographic areas.

Elena (as cited in Ayopo Babajide, Olayinka Oluwaseye, Lawal, & Isibor, 2020) emphasised significantly that the Nigerian economy has demonstrated a strong receptiveness to Fintech innovations. This is evident from the substantial increase in mobile money transactions, which surged from a monthly transaction volume of $5 million in 2011 to $142.8 million in 2016. It is worthy of note to resound his discovery on the role of regulation in the development as report by government regulators, including the CBN, which quickly promoted digital financial services during the crisis. They collaborated with banks and payment providers to restructure fees and limits, relaxed regulations for easier access to digital payment tools, embraced digital payments for welfare grants, and reviewed capital controls. The CBN's policies on cashless payments and financial inclusion played a major role in fostering a supportive environment for fintech in Nigeria. (Kola-Oyeneyin, Kuyoro, & Olanrewaju, 2020)

Achugamonu (as cited in Ayopo Babajide, Olayinka Oluwaseye, Lawal, & Isibor, 2020) reports that the expanding operations of FinTech are closely linked to the rise of e-commerce and smartphone usage. Nearly 70 percent of traders in Nigeria own mobile phones. Studies indicate that 74 percent of them are eager to gain knowledge about new technologies, while over 30 percent encounter challenges accessing credit from financial institutions.

2.1.3 Effects of Fintech Innovation and Regulation on Achieving Sustainability Development Goals

Since the 2008 global financial crisis, the financial industry has seen a new trend that is centered on digitalization and Fintech-related business models (Thakor, 2020). Similarly, the effect of climate risk on banking is a topic that is beginning to appear in the literature (BIS, 2021). The new elements brought about by the Fintech revolution affected the financial industry and had an effect on long-term growth. In addition to the features that are usually mentioned, like cost reduction, Fintech is becoming more and more popular because of its potential to accelerate more sustainable economic growth. However, the sustainable growth perspective has been impacted by fintech in both positive and negative ways. Some have argued that Fintech companies can address important climate and environmental issues. Due to its capacity to lessen information asymmetry for investors interested in green financial products, fintech may accelerate the development of green finance, which addresses environmental protection and climate change. This has turned into an opportunity for industrialized countries to achieve sustainable growth (Yang, Su, & Yao, 2021). According to Merello, Barberá, and De la Poza (2022), Fintech companies exhibit a greater inclination towards engaging in green finance due to its favorable effects on their market and book value. Many Fintech companies have already started providing their clients with green investment opportunities, or they

are even dedicated to this type of investing (referred to as "Green Fintech"). These comprise various financial innovations, such as mobile payment platforms (Alipay's Ant Forest campaign), blockchain (Climatechain), robo-advisors (Visual Vest or LIQUID), and crowdfunding platforms (Crowdfundres) (Dorfleitner & Braun, 2019; Muganyi, Linnan, & Sun, 2021).

The development of technology has given rise to new rivals for established banks. Fintech technology is utilized by certain banks as an extra channel of distribution, while other banks, known as neobanks, operate without traditional branches. Neobanks can employ new technology more quickly, cheaply, and in a more contemporary manner because they are not constrained by outdated infrastructure. Moreover, it is possible to differentiate between Fintech and BigTech businesses. BigTechs are sizable businesses with multiple business lines that run platforms that allow for direct user interaction among large numbers of users. The main reason BigTech companies enter the financial services industry is because of their well-known brands. Lending is typically a small portion of their non-financial core business (Bank for International Settlements, 2019).
The pandemic has accelerated the process of digitizing citizens' private and public lives in the EU and other parts of the world. The idea of sustainable development is expanding globally in tandem with the advancement of new technologies. The Brundtland Commission of the United Nations first proposed the idea of sustainable development in 1987. "Meeting the needs of the present without compromising the ability of future generations to meet their own needs" is the UN definition of sustainability (1987). Since then, a number of factors have contributed to the significant increase in environmental pressure, including climate change, the conversion of untamed areas into agricultural areas, the industrial demand for energy and water, the lack of global waste management, and rising household consumption worldwide. There are not enough things being done to protect the environment and natural resources for coming generations. The continuous climate summits, statements, and procedures demonstrate how ineffectual policymakers can be when operating within an international framework. Sadly, developing nations cannot afford the costly new technologies that wealthy nations have been using to plunder their resources for centuries. Actually, the only way to give the "next generation to meet their own needs" a chance would be to introduce innovations and reduce the demand that is being driven by China, India, and the West. But decreased demand ultimately prevents economic expansion (Teach out, 2021). More than 140 countries have included the objectives of sustainable growth in their agendas (UN, 2022). Financing is required in addition to enforcing rules and declarations. Social Impact and Green Bonds are two solutions offered by the financial market to finance social and environmental projects that are not funded by current corporate or sovereign budgets. The major participants in the market or

business activity are the issuers and investors of these instruments. The UN expert group released a report titled "Innovative Finance for Sustainable Development" in 2007. The experts emphasized how little the private sector and public-private partnerships are involved. They mentioned that many "life-changing" projects are hampered by the transactional costs associated with the fundraising process. Information asymmetry results in restricted access for organizations looking to invest in sustainable growth-promoting projects, which is the cause of these expenses. Simultaneously, the issuers are unable to connect with a sufficiently broad spectrum of investors eager to participate in environmental or social projects. Crowdfunding for artistic and startup purposes emerged thanks to Fintech. On a larger scale, the same mechanism can be used for social or ecological initiatives. As of right now, the only organizations that are eligible to act as intermediaries for these kinds of projects are those whose missions include sustainable growth goals. The scope of financing is currently restricted to a deposit base or support from governmental agencies. Green finance has emerged as a result of people realizing how serious the current environmental and climate crisis.

Green finance, according to IFC (2017), is the term for financial products that have positive environmental effects. The purpose of green finance is to offer funding for projects that are environmentally friendly, both financially and operationally. When evaluating the project, traditional criteria are not as important as environmental protection and efficient resource use (Zhou, Tang, & Zhang, 2020). Green finance facilitates the allocation of idle social capital to diverse economic sectors, including but not limited to renewable energy and green building (Wang, Zhao, Jiang, & Zheng-Zheng, 2022). Since it is viewed as a key pathway for industrialized countries to achieve sustainable growth, the significance of green finance is only growing (Muganyi et al., 2021).

Green bonds are one well-known type of green financial instrument. Global experience over the past few years has demonstrated their importance as a tool for green finance and their ability to provide enough capital for environmentally friendly investments by distributing costs among present and future generations (Flaherty, Gevorkyan, Radpour, & Semmler, 2017). Green bonds, both public and corporate, have grown in popularity since the European Investment Bank issued the first Climate Awareness Bond. Between 2015 and 2020, the green bond market expanded by 50% annually on a global scale (Spinaci, 2022). By lessening information asymmetry for investors who value natural assets, Fintech advances the field of green finance (Yang et al., 2021). This might make it possible for environmentally friendly projects to get funding from more sources and a wider range of investors (Dorfleitner & Braun, 2019). Several European initiatives have already been launched to examine how Fintech can improve green finance. For example, the Climatechain initiative in France aims to assess how blockchain technology can help achieve the goals set forth in the Paris Agreement, while the

Crowd Fund RES initiative examines the difficulties faced by renewable energy projects and offers recommendations for regulatory frameworks. Like robo-advisors, green crowdfunding platforms can be identified by their exclusive focus on sustainable financing or by the green financing options they provide. There are a number of crowdfunding sites that focus on sustainable crowdfunding, including Ecrowd (Spain), Abundance (UK), and One planet crowd (the Netherlands). Certain green crowdfunding platforms, like Lumo (France), Enerfip (France), Better vest (Germany), Econeers (Germany), or Trine (Sweden), are focused on specific areas, like financing renewable energy projects. Even though crowdsourcing is becoming more important for green projects, its scope is still limited. Bigger crowdsourcing sites like Blockchain-based entities are a growingly significant subset of the Fintech industry in the field of green finance. A distributed ledger that records and stores transactions over a peer-to-peer network is what is known as a blockchain. Each network node verifies a transaction before it is compiled into a block. Subsequently, they are permanently incorporated into the current chain of chains, validated by cryptographic signatures. Peer-to-peer trading, peer-to-peer financing and investment platforms, and measurement, reporting, and verification (MRV) of impact data are the primary blockchain applications in green finance (Dorfleitner & Braun, 2019). One prominent example of a peer-to-peer finance and investment platform that specializes in funding green projects is Cryptoleaf. Peer-to-peer green trading platforms include Sun Contract, Poseidon, WePower, and Climatecoin. Businesses that offer MRV of impact data services are another subset of blockchain-based businesses. Businesses like IXO and Green Assets Wallet make it easier to verify a project's environmental impact.

FinTech has been widely used in many industries since its inception. According to Lee, Li, Yu, and Zhao (2021) there is a claim that FinTech has already increased the effectiveness of banking and the financial system as a whole. The potential of fintech companies to accelerate more sustainable economic growth has also drawn increasing attention in recent years. The literature has indicated that these organizations could be crucial in helping nations move toward a more environmentally friendly financial system as well as in addressing environmental and climate-related issues. FinTech companies could be able to mitigate climate change through trade in clean energy, trade in carbon emissions, or trade in climate finance, to name a few ways (Tao et al., 2022). Nevertheless, there is still a lack of empirical support for the notion that green finance and FinTech are related, and research in this area is still in its infancy. For instance, Puschmann, Hoffmann, and Khmarskyi (2020) looked at the body of research to assess the number of articles addressing the relationship between FinTech development and the objective of achieving a low-carbon economy. They conducted a search using the terms "FinTech" and "climate," but they were unable to locate any publications on the topic. There has only been a discernible increase in the quantity of studies

addressing this topic and offering empirical support in the 2020s. FinTech businesses promote sustainable development in a variety of ways. To encourage its customers to actively participate in green finance projects and reduce their carbon footprint, Ant Group, based in China, which owns the largest mobile/digital payment platform in the world, Alipay, launched the Ant Forest initiative (Muganyi et al., 2021; Yang et al., 2021). The application's primary function is to turn the virtual energy produced by participating in carbon-reduction activities into actual trees that are planted in China. Kiva, which facilitates the transfer of capital to unbanked or undercapitalized individuals worldwide from individuals, donors, trusties, corporations, and social enterprises, is another illustration of a FinTech solution for sustainable growth. The primary market for Kiva capital transfers is its online platform, which allows anybody to contribute money to borrowers listed in the sector-specific Kiva portfolio. PayPal facilitates free money transfers between the two parties involved in a transaction. Peer-to-peer online lending, however, makes it possible to link investors who wish to engage in activities beyond the simple provision of liquidity (Kiva, 2022).

This relationship between lenders and borrowers would not be possible without FinTech solutions. Unquestionably, FinTech plays a beneficial role in this situation. It is not always clear how financial technologies and sustainable growth are related, as this paper's next section discusses. According to Muganyi et al. (2021), certain FinTech companies are proactively integrating environmentally conscious practices to mitigate carbon emissions and promote more economical resource utilization. The public is increasingly offered green finance opportunities by FinTech, including crowdfunding platforms, robo-advisors, and blockchain-based entities (Dorfleitner & Braun, 2019). Green robo-advisors can be identified as those companies that either specialize in green investments exclusively or provide the opportunity to invest sustainably (Dorfleitner & Braun, 2019). In Europe, there are currently a number of green robo-advisors in operation. In addition to conventional strategies, German companies Visual Vest and LIQUID offer sustainable investment portfolios. On the other hand, UK-based financial services Nutmeg and Wealthify provide socially conscious investing choices. Only ethical and ecological investment strategies are the focus of Vividam (in Germany); however, this comes with higher fund or product costs when compared to conventional strategies. This is because measuring and assessing sustainability criteria have become more expensive (Dorfleitner & Braun, 2019). High-quality data are necessary, and not many entities fulfill these requirements. The value of the robo-advisors industry has increased significantly in recent years, and as a result of this growth, more businesses are now able to provide sustainable strategies. According to Yang et al. (2021), FinTech companies function as intermediaries and have an indirect impact on the relationship between green finance and superior economic development. According to Moro-Visconti et al. (2020), FinTech businesses support green finance

as well as sustainable development. Zhou et al. (2022) provided empirical data from China to support this claim. Their findings indicate that FinTech companies significantly contribute to sustainable growth, primarily by advancing green investment, green credit, and other "green" mechanisms. As a result, the economy's green credit and green investment ratio improves. Nonetheless, this influence is significantly stronger in more developed areas and is mostly dependent on economic development.

2.2 Technology Acceptance Model (TAM)

Zaineldeen, Hongbo, Koffi, and Hassan (2020) highlighted that TAM, developed by Davis in 1989, is a widely recognized framework for evaluating the acceptance, adoption, and utilization of information technology. The model is primarily based on two key constructs: Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). Since its inception, TAM has become a prevalent and influential tool among researchers for studying technology adoption. Unlike other models, TAM does not directly measure the success of technology adoption but rather focuses on predicting users' intentions to use the technology. It has been effectively applied in various contexts to explain customer acceptance of new innovations.

Marikyan(2022) argued that Davis created TAM by building on the Theory of Reasoned Action, which offered a psychological perspective on human behaviour, with focus on two objectives: to elucidate the mechanisms underlying technology acceptance and to predict user behaviour, thereby offering a theoretical basis for successful technology implementation. He deduced that TAM sought to offer practitioners practical insights to improve the processes of implementing systems in a pragmatic sense. He initiated the model's development by conceptualizing the processes that mediate the relationship between Information System (IS) characteristics (external factors) and actual system usage, hence the model suggests that if an application is anticipated to offer ease of use, it is more probable that users will perceive it as useful, thus increasing the likelihood of technology acceptance.

Malatji, Eck, and Zuva, (2020), further strengthened the relevance of TAM by re-establishing that it is highly regarded for its ability to evaluate consumers' readiness to adopt information and communication technology (ICT) because it’s components: Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are key factors shaping individual attitudes, which then influence Behavioural Intention (BI), ultimately impacting the actual use of technology.

TAM has been a very useful in accessing the technology acceptance and adoption in wide range fields of studies. Fedorko, Bačik, & Gavurova (2022) revealed that numerous researchers have undertaken various studies to improve the potential for technology adoption and found TAM to be the leading model, which is especially effective for analysing trends in the usage of specific technologies from an economic

standpoint. "Venkatesh described TAM as a model which is economical, predictable and robust in comparison to other competitive models (as Cited in Fedorko, Bačik, & Gavurova, 2022)".

2.3 Empirical Review

Tamasiga, Onyeaka, and Ouassou (2022) conducted a systematic-cum-bibliometric review which provides a comprehensive examination of the evolving landscape surrounding the implementation of Financial Technology (FinTech) as a catalyst for green economic growth, particularly within the context of African nations. By scrutinizing 35 research papers, the review discerns a discernible uptick in scholarly interest concerning the concept of green FinTech and its intricate interplay with economic expansion, climate change mitigation, and the formulation of environmentally conscious policies.

The trajectory of research attention reveals a noteworthy trend, commencing in 2019 with a solitary paper and subsequently experiencing a progressive surge, culminating in a substantial increase by 2022. This escalating interest underscores the growing recognition of green FinTech's potential to drive sustainable development agendas and foster environmentally responsible financial practices.

Despite this burgeoning interest, the review illuminates a fragmented landscape characterized by diverse research directions and methodologies. While some scholars lament the scarcity of comprehensive FinTech statistics, others endeavor to overcome these limitations by devising robust composite indicators capable of capturing the multifaceted dimensions of green FinTech policies.

The delineation of five key clusters of research trajectories provides invaluable insights into the multifaceted nature of green FinTech's impact on economic growth and environmental sustainability. These clusters span a wide spectrum of topics, ranging from the exploration of innovative technologies and financial instruments in digital finance to the formulation of regulatory frameworks and policies conducive to fostering green FinTech ecosystems.

Moreover, the review underscores the pivotal role of FinTech in mitigating climate change risks and enhancing environmental quality. By harnessing the transformative power of digital finance, FinTech offers a promising avenue for channelling investments towards renewable energy projects, promoting sustainable consumption patterns, and facilitating the transition towards a low-carbon economy.

Kedir and Kouame (2022), carried out a research that delves into the transformative role of financial technology (FinTech) in enhancing the occupational choices of women in Central and Western Africa, examining its implications for sustainable development. By leveraging extensive data from FinScope Consumer surveys conducted in Burkina Faso in 2016 and Cameroon in 2017, they explore how Fintech,

particularly mobile money, can foster entrepreneurship among marginalized groups.

The FinScope surveys, supported by the National Statistics Offices and FinMark Trust, provide comprehensive demographic and socio-economic data, including information on financial literacy, capability, income, and employment. Their analysis focuses on the use of mobile money and other financial services, seeking to understand their impact on self-employment and business ownership among women.

Using a probit model, they analyzed factors that influence the likelihood of becoming an entrepreneur. The model considers various socio-economic characteristics and the use of mobile money. The data reveals significant insights: men are more likely than women to own registered enterprises in both Burkina Faso and Cameroon. However, the rates of informal entrepreneurship are similar across genders. Notably, access to mobile money is strongly linked to higher self-employment rates for both women and men, highlighting FinTech's potential to drive economic inclusion.

Their findings emphasize the importance of not just access to financial services but their actual use in achieving meaningful financial inclusion. While a substantial gender gap persists in mobile technology use—only 35% of women in Sub-Saharan Africa use mobile internet—this disparity is influenced by factors like affordability, literacy, and infrastructure.

Regional variations also play a critical role. Some regions exhibit higher entrepreneurial activities due to more supportive environments. Therefore, any policy measures aimed at boosting entrepreneurship through FinTech must consider these contextual differences.

Policy implications from their research are clear. To enhance financial inclusion and foster entrepreneurship, especially in rural and underserved areas, improvements in infrastructure, such as reliable energy supply, are crucial. Targeted efforts to close the gender gap in mobile technology use are necessary, involving collaboration among mobile network operators, policymakers, and the development community. This includes enhancing financial literacy and making digital financial services more affordable for women.

Additionally, regulatory frameworks need to be strengthened to protect data and build trust in digital financial services. Recognizing and supporting the informal sector, which constitutes a large portion of businesses in Africa, is vital for leveraging FinTech for broader economic development.

In conclusion, the study provides robust evidence that FinTech, particularly mobile money, significantly boosts entrepreneurship among women in Central and Western Africa. This advancement supports several Sustainable Development Goals, including gender equality, economic growth, and reduced inequalities. However, realizing the full potential of FinTech requires targeted policies to address existing

barriers in infrastructure, affordability, and literacy. They proposed that future research should continue to explore the dynamic impacts of FinTech over time and its interplay with traditional financial services, focusing on the unique challenges faced by different social groups. This research underscores the immense potential of FinTech to promote inclusive economic growth and the necessity for strategic initiatives to overcome barriers to financial inclusion and entrepreneurship in the global South.

Gapp, de Fauconberg, Bessis, Goble, and Obodoekwe (2022), emphasized that fintech innovation in Sub-Saharan Africa is proving transformative, especially where traditional banking systems have historically lagged. The result of their interviews, reviews and database analyses informed that digital financial technologies are leveraging internet and mobile networks to connect communities and enable financial services, bypassing geographical barriers, thereby, supporting multiple Sustainable Development Goals (SDGs) by enhancing financial inclusion, promoting economic growth, and fostering partnerships.

They revealed that research highlights a growing ecosystem of fintech startups in Africa, with significant investment focused on mobile money but expanding into digital financing and investment services. However, the regulatory landscape remains crucial. The GSMA Mobile Money Regulatory Index reveals varying regulatory environments across countries, influencing the sector's growth and innovation potential.

Highlights of challenges of unequal funding distribution favoring payment systems over other financial services, usability issues in existing products, and regulatory complexities that require a delicate balance between innovation and consumer protection persisting, and disparities in talent distribution and inadequate infrastructure in some regions hindering broader adoption and impact were made.

They explained that addressing these challenges requires collaborative efforts among stakeholders to redistribute funding, improve product usability, harmonize regulatory frameworks, and invest in talent and infrastructure. By doing so, stakeholders can foster inclusive and sustainable growth in digital finance, empowering local economies and advancing the SDGs across Sub-Saharan Africa.

3.1 Methods

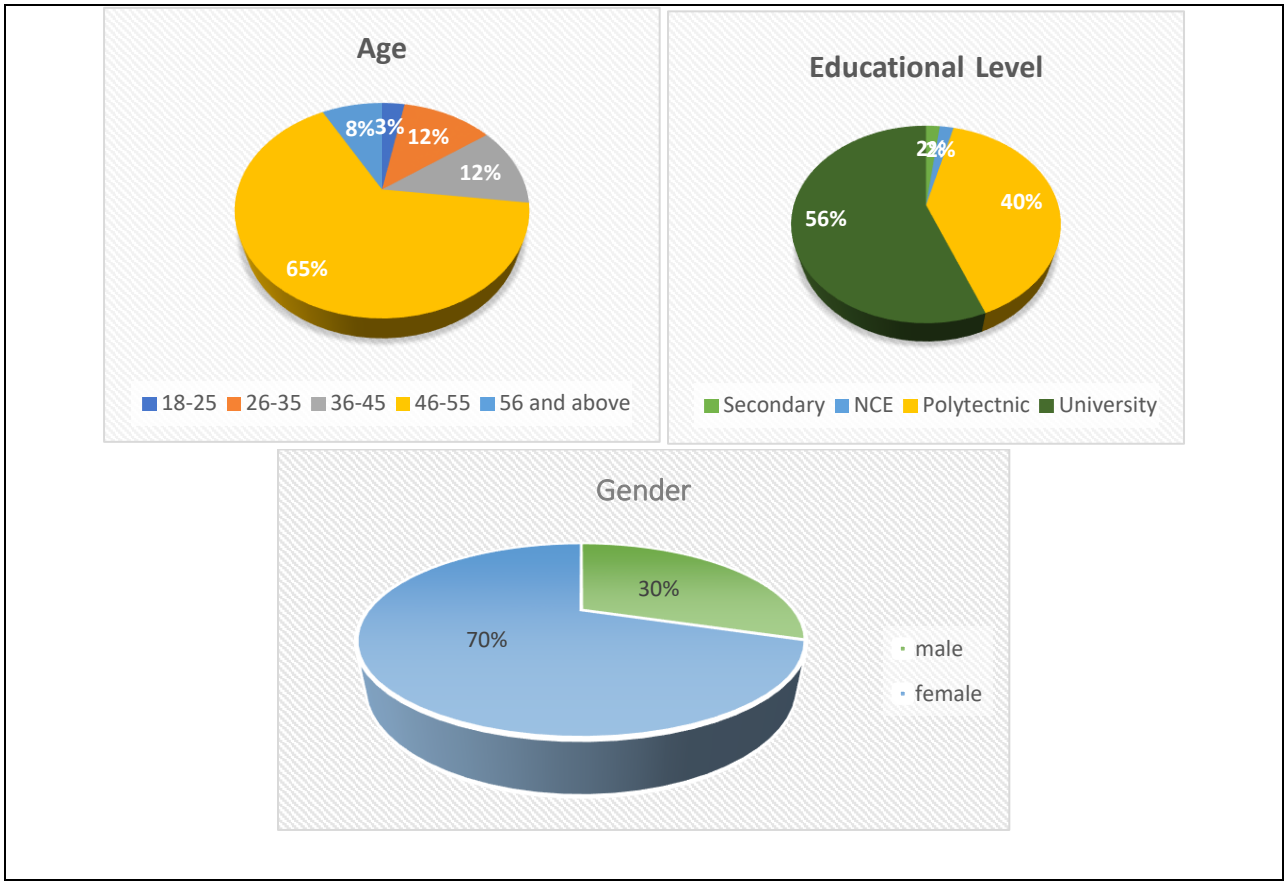
The data employed for this study was primary data through the use of questionnaire. This is because the latent variables: SDGs Indicators, FinTech Indicators and Regulations Indicators as captured in the research work cannot be observed or measured in absolute terms. Appropriate questions were drafted in each of these variables to obtain the needed information from respondents.

The study utilized primary data sources collected through a series of integrated stages, focusing exclusively on fintech, sustainable development, and regulation. In the first stage, proxies for the three variables (fintech, sustainable development, and

regulation) were defined using the author's constructs, which are distinct from those found in existing literature and based on underlying theories. In the second stage, after identifying the constructs with pre-established links, appropriate instruments were developed using a questionnaire tailored to the characteristics of each construct. Stage three involved linking each construct to its respective instruments to load the data, resulting in continuous construct variables with either symmetric or asymmetric distribution patterns. The respondents for this study were FinTech operators in Nigeria, and the data were sourced from members of the FinTech Association of Nigeria (Fintech NGR)Based on judgmental sampling, the study shared 100 questionnaires to FinTech operators in Nigeria.The only instrument that was used for collecting data for this study is a structured questionnaire; in which case the five (5) point Likert's scale was adopted instead of the modified four (4) points. This is because some of the respondents are either illiterate or semi-literate who may prefer to stay neutral in questions they do not have much information.

4.1 Presentation of Demographic Statistics

Figure 4.1 Data on Respondents Gender, Age, and level of Education



The demographic analysis of the respondents provides valuable insights into the characteristics that shape the study's findings. A clear gender imbalance is evident,

with 70% of participants being female and 30% male. This indicates that women participated more in the research, meaning that their perspectives and experiences have a greater influence on the study's outcomes, especially in areas where gender dynamics are relevant, such as fintech adoption.

The age distribution reveals that the majority of respondents, 65%, fall within the 46-55 age group, making this group the most engaged. In contrast, only 3% of the respondents are aged 18-25, indicating minimal participation from younger individuals. The 26-35 and 36-45 age groups each account for 12% of the respondents, showing moderate engagement from these ages ranges. Additionally, 8% of the respondents are aged 56 and above, which, although smaller, still represents a significant portion of older participants. These findings indicate that the study predominantly reflects the views of middle-aged individuals, with fewer younger or older individuals contributing to the research.

The respondents' educational attainment is notably high, with 56% holding university degrees and 40% having attended polytechnic institutions. This high level of education suggests that the respondents are well-qualified and capable of providing informed, thoughtful responses to the study's questions. A small percentage, 2%, has completed secondary school education, and even fewer have attained an NCE qualification. This demonstrates that the study's participants are predominantly well-educated, which enhances the quality and depth of the collected data.

Figure 4.2: Data on Enterprise type and account type of Respondents

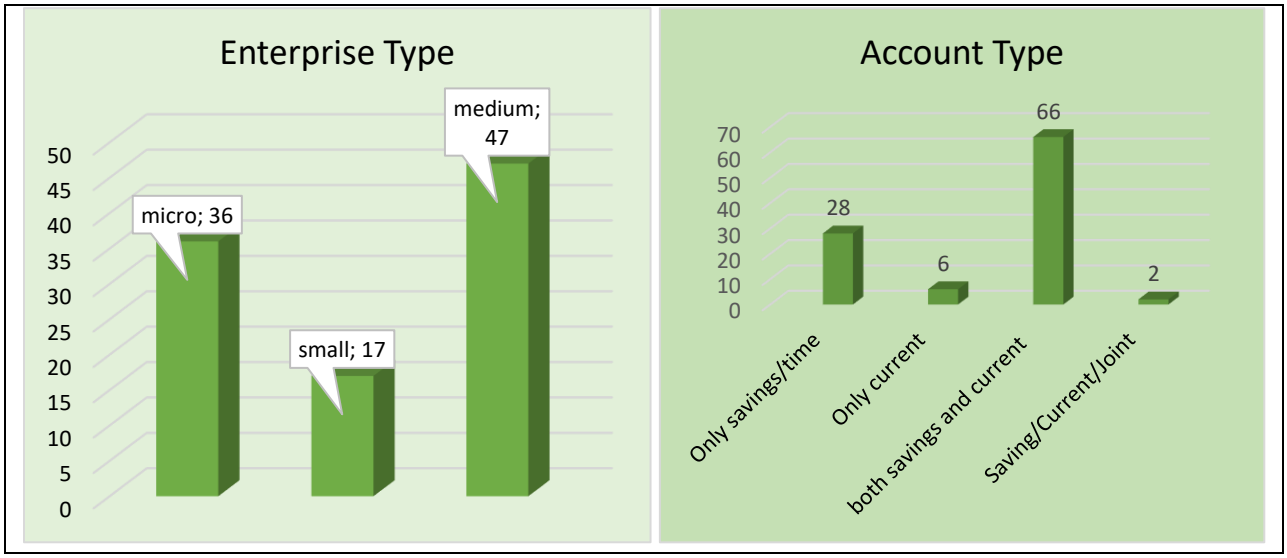


Figure 4.2 presents essential insights into the types of enterprises and account preferences of respondents, providing a foundation for understanding how fintech innovations and regulatory frameworks can contribute to the sustainable growth of businesses in Nigeria. The analysis reveals that 47 (56%) of the respondents operate

medium-scale enterprises, followed by 36 (43%) running micro-enterprises, and 17 (21%) managing small-scale businesses. The prevalence of medium-scale enterprises suggests that these businesses are well-positioned to adopt fintech innovations such as digital payment systems, automated bookkeeping tools, and online lending platforms. The account preferences of the respondents also provide valuable insights into their financial behaviors and how fintech solutions can be designed to address their specific needs.

Two respondents reported using a combination of savings, current, and joint accounts, suggesting that this comprehensive approach to financial management is relatively uncommon. Six respondents rely solely on current accounts, which are crucial for frequent transactions but may lack tools for long-term financial planning or savings. Twenty-eight respondents use savings or time deposit accounts, which points to a more conservative approach to financial management. The majority of respondents operate both savings and current accounts, indicating a balanced approach to financial transactions and capital preservation. This group could benefit from integrated fintech solutions that combine transactional efficiency with tools for savings and budgeting, such as mobile apps that automate budgeting or help manage cash flow.

Overall, Figure 4.2 highlights the diversity of enterprise types and financial preferences, shedding light on the potential role of fintech in supporting the growth and sustainability of businesses in Nigeria. While medium-scale enterprises are the primary group for scalable fintech adoption, micro and small businesses offer opportunities for targeted and inclusive solutions. As fintech adoption continues to grow, regulatory frameworks must ensure that these solutions remain accessible to businesses of all sizes, enabling a more sustainable and inclusive economic environment.

4.2 Test of Hypothesis

The model fitness results are based on Standardized Root Mean Square Residual (SRMR), Unweighted Least Squares Discrepancy (d_ULS), Geodesic Discrepancy (d_G), Chi-Square, Normed Fit Index (NFI), and the rms Theta. SRMR gauges the difference between the predicted and observed correlation. If the SRMR value is lower, it implies that the model has a better fit. Unlike the SRMR, the d_ULS measures the discrepancy between the observed and predicted covariance matrices. A low value of d_ULS indicates model fitness. The d_G has a similar property as the d_ULS along with the geodesic distance in the parameter space. The smaller the value, the better the model. The Chi-Square statistic weighs the overall fitness of the model. It compares the observed and predicted covariance matrices. A lower figure suggests that the model has a good fit. However, this statistic is sensitive to sample size. The NFI draws a comparison between the fit of the estimated model with a null model (i.e. a model that assumes no links among the variables). An NFI value close to 1

showed that the model has a better fit. Lastly, the rms Theta shows the residual correlations among indicators. A value below 0.20 or 20% is acceptable; this implies that there is no problem with the residuals.

The coefficient value between ATM and decent work & economic growth is 0.61, and the coefficient value between swift and decent work & economic growth is 0.36. The adjusted R-square for the first equation is 0.9. This implies that the independent construct variables (ATM and swift) can explain 90% variation in the dependent variable (decent work & economic growth). For the second equation, the coefficients of ATM and Swift are 0.04 and 0.28 respectively. This suggests that ATM and Swift have a positive influence on no poverty. But this influence is not significant. For the third equation, the resultant coefficients of ATM and Swift are 0.45 and 0.47 respectively with associated p-values that are zeros. It is therefore noted that ATM and Swift have a direct and substantial effect on the quality of education. Similarly, ATM and Swift are directly and significantly connected to Industry, Innovation & Infrastructure.
Therefore, the coefficient values for all the relationships are positive and significant. This suggests that ATM and Swift have a positive and significant impact on sustainability, as ATM and Swift increase also sustainability increases. However, ATM and Swift have no significant influence on the variable no poverty. Furthermore, the post-test results show how fit this model is. So from the summary of the model fitness results the saturated model output and estimated model output for SRMR, d_ULS, d_G, Chi-Square, and NFI are presented. The saturated model and estimated model for these statistics (SRMR, d_ULS, and d_G) are slightly different. This suggests that the model is fairly fit. Furthermore, the rms Theta is 0.18. This value is below 0.20 which means that there is no significant issue with the residuals. The next table gives the output of the third model estimation which is Third Regime-Fintech 3.0, in this model, we have four equations and each is estimated separately. The model used four fintech products which include block-chain, Google Wallet, internet banking, and mobile money as construct independent variables against the sustainability indicators.

As shown in the above table, the four fintech products (blockchain, Google Wallet, internet banking, and mobile money) are regressed against the indicator of sustainable development (no poverty). The coefficients of block-chain, Google Wallet, internet banking, and mobile money are 0.27, -0.14, 0.22, and -0.22 respectively with associated probability values of 0.13, 0.49, 0.34, and 0.04. From these findings, it is seen that only one of the fintech products is significantly related to no poverty. However, this association is negative. Therefore, the null hypothesis that fintech does not significantly influence poverty levels in the studied population

cannot be rejected. This is confirmed by the results of the first regime-fintech model and the second regime-fintech model. The results of the model fitness statistics suggest that the model has a good fit since the saturated model and estimated model values of SRMR, d_ULS, d_G, and Chi-Square are low and the same. Moreover, the NFI value is approximately 0.7, which is close to 1.0 and the rms Theta is 0.20. Thus, the model has a better fit. We go on to analyze how these fintech products will affect another indicator of SD and the outcome is revealed in the subsequent table.

4.3 Discussion and Implication of Findings

From the output of this study, it is seen that fintech has no significant influence on the variable no poverty. This implies that despite the increase in fintech products/services the level of poverty in Nigeria is not declining. This is against the assertion of (Kshetri, 2018), who stated that fintech platforms such as microfinance institutions, mobile banking, and peer-to-peer lending have already shown promise in helping to reduce poverty in developing countries.

Fintech is believed to have a potential contribution to the SDG4 goal by providing financial services that support education and training. One of the findings of this study reveals that fintech and quality education are significantly related. This supports the notion of Grunwald & Berg, 2018 who claimed that fintech platforms can offer low-cost loans for students or provide access to online education and training courses. Fintech has provided digital solutions that have enabled access to financial services to individuals who were previously excluded from the financial system (Ojo, Abejide & Adewuyi, 2021). For instance, mobile money platforms and digital lending have made it possible for individuals who were previously unbanked to access financial services, which can be used to pay for education and learning materials. Thus, fintech has the potential to support SDG4 by enabling access to financial services. Also, a significant link is recorded between fintech and decent work & economic growth. Fintech can contribute to SDG8 by enabling digital payments, remittances, and quick access to finance. By implication, fintech supports SMEs by providing them with finance, enhancing their cash flow management, and reducing transaction costs (UNDP, 2019). New jobs are also created in the financial sector as a result of the increase in fintech adoption most especially in the areas of digital banking and payment systems. According to a report by the International Fund for Agricultural Development (IFAD) (2019), fintech can help raise the volume and reduce the cost of remittances, which can lead to poverty reduction and economic growth.

5.1 Recommendations

1. In this study, poverty reduction and fintech have no significant relationship. It is recommended that the Nigerian government should make an effort to discover why fintech has no significant effect on poverty reduction. Also, the

government together with fintech firms should focus on low-income earners and underserved populations to provide them with micro-loans, insurance products, and saving tools. The government can also empower these citizens through various entrepreneurial programs.

2. Fintech is observed to influence the quality of education significantly in this study, as such the government in collaboration with the fintech firms should concentrate on providing the educational sector with fintech products and services such as tuition payment using mobile payment systems, digital learning platforms and crowdfunding for schools. Thus, the government and educational institutions can partner with fintech firms to increase the rate of access and affordability to quality education in the country.
3. From the outcome of this study, it is noted that regulatory frameworks of the government (relating to the activities of fintech firms) positively impact fintech innovations. This study recommends that regulators should employ a systemic approach that is balanced which can foster fintech innovation as well as protect the consumers and align with sustainable development goals. A regulatory sandbox should be established in a controlled environment where fintech firms can easily test their products. There should also be recurrent reviews of old regulations as the fintech landscape evolves.

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Table 4.1: Test Result One

	Coef	T-Stat	P-V	Adjusted R-Square	
ATM -> Decent work & Economic growth	0.61	5.51	0.00		
Swift -> Decent work & Economic growth	0.36	3.16	0.00	0.90	
ATM -> No Poverty	0.04	0.20	0.84		
Swift -> No Poverty	0.28	1.24	0.22	0.08	
ATM -> Quality Education	0.45	5.03	0.00		
Swift -> Quality Education	0.47	5.00	0.00	0.81	
Swift -> Industry, Innovation & Infrastructure	0.30	2.96	0.00		
ATM -> Industry, Innovation & Infrastructure	0.66	6.67	0.00	0.89	

Fit Summary		
	Saturated Model	Estimated Model
SRMR	0.07	0.08
d_ULS	3.13	3.32
d_G	3.42	3.60
Chi-Square	1397.33	1440.82
NFI	0.67	0.66
rms Theta	0.18	

Source: Author's computation 2025

Table 4.2: Test Result Two

	Coef	T-Stat	P-V
Blockchain -> No Proverty_	0.27	1.54	0.13
Google Wallet -> No Proverty_	-0.14	0.69	0.49
Internet Banking -> No Proverty_	0.22	0.95	0.34
Mobile Money -> No Proverty_	-0.22	2.04	0.04
Adjusted R-Square	0.13		
Fit Summary			
	Saturated Model	Estimated Model	
SRMR	0.12	0.12	
d_ULS	2.52	2.52	
d_G	1.00	1.00	
Chi-Square	474.61	474.61	
NFI	0.69	0.69	
rms Theta	0.20		

Source: Author's computation 2025