THE TOPIC IS FINTECH INNOVATION AND FINANCIAL DEVELOPMENT IN NIGERIA: MEDIATING EFFECT OF GREEN FINANCE

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BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF FINANCE, FACULTY OF MANAGEMENTS SCIENCES, UNIVERSITY OF BENIN, BENIN CITY. IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (BSc) HONOURS DEGREE IN BANKING AND FINANCE

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DECLARATION

I declare that this is based on a study undertaken in the Department of Finance, Faculty of Management Sciences, University of Benin, Benin City, under the supervision of Professor. E. J. Idolor, this work has not been previously submitted for the award of degree elsewhere and that all ideas and views are products of my personal research and all the references made to works of other persons have been duly acknowledged.

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TOKURAH.O. OSHOZEKHAI **Date**

CERTIFICATION

This is to certify that this project was carried out by Tokurah Oghenefejiro Oshoze of the Department of Finance, Faculty of Management Sciences, University of Benin, Benin City, and is adequate in scope and quality for the partial fulfillment of the requirements for the award of Bachelor of Sciences (B. Sc.) degree in Department of Finance.

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Date

DEDICATION

This work is dedicated to God almighty

ACKNOWLEDGEMENT

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ABSTRACT

This study examines the impact of fintech innovation on financial development in Nigeria, with a focus on the mediating role of green finance. Fintech innovations, such as digital payments, mobile banking, and peer-to-peer lending, have revolutionized the financial sector, enhancing financial inclusion and market efficiency. Meanwhile, green finance, a relatively emerging concept in Nigeria, seeks to channel financial resources toward environmentally sustainable projects. This study aims to assess the interplay between these variables and their collective influence on the country's financial ecosystem.

Using a structured questionnaire distributed to 88 respondents, data was collected from fintech operators, financial institution employees, and stakeholders in green finance. The analysis employed descriptive statistics, regression models, and mediation analysis to evaluate the relationships among fintech innovation, financial development, and green finance.

The findings reveal that fintech innovation significantly contributes to financial development in Nigeria, primarily by improving access to financial services and reducing transaction costs. Green finance, while still in its nascent stage, positively influences financial development by promoting sustainable investments. Additionally, the study confirms that green finance partially mediates the relationship between fintech innovation and financial development, amplifying the impact of fintech on sustainability-oriented financial initiatives.

However, challenges such as limited data availability, regulatory gaps, and low public awareness of green finance hinder its full potential. The study concludes by recommending stronger regulatory frameworks, increased public education on green finance, and greater collaboration between fintech companies and policymakers to foster sustainable financial growth in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Fintech innovation in Nigeria has emerged as a significant driver of financial development, catalyzing the transformation of the financial sector and improving access to financial services. Fintech, or financial technology, refers to the application of technology to improve financial services, offering products such as mobile payments, digital banking, blockchain solutions, and peer-to-peer lending (Ozili, 2018). The rapid growth of fintech in Nigeria has been fueled by technological advancements, increased smartphone penetration, and a youthful population eager to adopt digital financial solutions (Bukar et al., 2021). This growth has enhanced financial inclusion, with previously unbanked individuals now accessing banking and other financial services via digital platforms (Sanusi, 2018).

The rise of fintech in Nigeria has played a critical role in driving financial development by expanding access to financial products and services, reducing transaction costs, and improving the efficiency of financial transactions. For example, mobile payment solutions, such as Paga and Paystack, have made it easier for individuals and businesses to conduct transactions, thus supporting the overall financial ecosystem (Ozili, 2020). Furthermore, fintech solutions have enabled the establishment of digital lending platforms that offer credit to small businesses and individuals who might otherwise be excluded from traditional banking services (Adebisi & Omah, 2021). This has led to a more inclusive financial sector that supports economic growth and development.

The growing fintech landscape has a mediating effect on green finance in Nigeria. Green finance refers to financial investments that support environmentally sustainable projects, such as

renewable energy, climate-friendly infrastructure, and initiatives aimed at reducing carbon emissions (Wang & Zhi, 2016). In Nigeria, there is an increasing awareness of the importance of green finance in addressing environmental challenges such as climate change, pollution, and deforestation (Nwankwo et al., 2021).

Fintech plays a crucial role in mediating green finance by providing innovative funding mechanisms and enhancing transparency. For instance, crowdfunding platforms enable the mobilization of funds for green projects, allowing individual investors to participate in sustainable initiatives (Yun et al., 2019). Additionally, blockchain technology can enhance transparency and accountability in green finance projects by providing a secure, immutable record of transactions, ensuring that funds are used for their intended purposes (Ojo & Bolaji, 2020). Digital financial solutions also enable better tracking and reporting of the environmental impact of investments, making it easier for stakeholders to assess the effectiveness of green finance projects (Ndako & Olasunkanmi, 2021).

Fintech innovation is significantly contributing to financial development in Nigeria and has the potential to facilitate green finance by providing innovative solutions and enhancing transparency and efficiency. The intersection of fintech and green finance offers a promising avenue for promoting sustainable development in Nigeria, which is essential for addressing environmental challenges and achieving long-term economic growth.

1.2 STATEMENT OF THE PROBLEM

The study aims to explore the impact of fintech innovation on financial development in Nigeria, with a specific focus on how this relationship mediates the growth of green finance. It seeks to investigate how advancements in fintech, such as digital payments, blockchain technology, and

crowdfunding platforms, contribute to financial inclusion, efficiency, and accessibility. Additionally, the study examines how these fintech-driven improvements in the financial sector facilitate investments in environmentally sustainable projects, thereby promoting green finance. By analyzing this mediating effect, the research aims to provide insights into how fintech innovation can support sustainable development and the transition to a low-carbon economy in Nigeria

1.3 RESEACH QUESTION

1. **What is the impact of fintech innovation on financial development in Nigeria?**

2. **What is the role of green finance in Nigeria's financial development?**

3. **How does fintech innovation facilitate or hinder the adoption of green finance?**

4. **Does green finance mediate the relationship between fintech innovation and financial development?**

1.4 RESEARCH OBJECTIVE

The primary objective of this study is to explore how **fintech innovation** contributes to **financial development** in Nigeria and to examine the **mediating role of green finance** in this relationship. Specifically, the study seeks to achieve the following objectives:

1. **Assess the impact of fintech innovation on financial development in Nigeria.**

2. **To examine the role of green finance in Nigeria's financial development.**

3. **To analyze how fintech innovation facilitates the adoption and growth of green finance in Nigeria.**

4. **To investigate the mediating effect of green finance on the relationship between fintech innovation and financial development.**

These objectives aim to provide a comprehensive understanding of the role fintech and green finance play in driving Nigeria's financial development while addressing sustainability challenges.

1.5 RESEARCH HYPOTHESIS

1. *Fintech innovation has a significant positive impact on financial development in Nigeria.*

2. Financial development exerts a significant positively influences the growth of green finance in Nigeria.

3. Fintech innovation has a significant direct positive impact on green finance adoption in Nigeria.

4. Green finance mediates the relationship between fintech innovation and financial development, enhancing the effectiveness of fintech innovation in promoting sustainable finance initiatives in Nigeria.

1.6 SCOPE OF THE STUDY

This study intends to investigate the role of fintech and green finance play in driving Nigeria's financial development while addressing sustainability challenges between the period of 1990-2022 which is a period of 30 years. The data used for the data analysis of this study were time

series secondary data sourced from the ssscentral bank of Nigeria (CBN) statistical bulletin and world bank development indicators

1.7 SIGNIFICANCE OF THE STUDY

This study holds significant value as it aims to bridge the gap in understanding the role of fintech innovation in advancing financial development and its impact on green finance in Nigeria. The findings of this research are expected to provide insights into how fintech can serve as a catalyst for enhancing financial inclusion, efficiency, and accessibility in Nigeria's financial sector, thereby supporting the country's economic growth.

By exploring the mediating effect of financial development on green finance, the study will highlight how fintech innovations can drive investments in sustainable projects, contributing to environmental sustainability and the transition to a low-carbon economy. Policymakers can leverage the insights from this study to formulate strategies and regulations that encourage fintech adoption and promote green finance initiatives.

For financial institutions and fintech companies, the study offers valuable information on how their services can be tailored to support sustainable finance, creating opportunities for growth and innovation in the sector. Moreover, the study contributes to the academic literature on fintech, financial development, and green finance, providing a foundation for future research in sustainable finance and technology-driven economic development in emerging markets like Nigeria.

1.8 LIMITATION OF THE STUDY

This study, while aiming to provide a comprehensive analysis of green finance and innovations in Nigeria, is not without its limitations. As I was using primary data, one potential challenge is the design and administration of the research instruments. Specifically, the use of questionnaires may present issues such as potential biases from respondents or difficulties in interpretation of the questions. To mitigate this, I will conduct a pilot study to pretest the questionnaire, ensuring that the questions are clear and that they elicit the necessary information.Additionally, while every effort was made to reach a representative sample, challenges related to access to key participants in the private sector, due to confidentiality concerns, may limit the depth of data collection. However, I will take steps to ensure data accuracy by using triangulation techniques, combining multiple data sources where possible to enhance reliability.Time constraints and the dynamic nature of the industrial sector may also affect the comprehensiveness of the analysis. Nevertheless, I will employ a focused approach, targeting key sectors within the green finance space, which should allow for meaningful conclusions within the given time frame.In spite of these limitations, I am confident that the study will contribute significantly to the understanding of sustainable development in Nigeria, particularly in the area of green finance and innovation.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This literature review seeks to explore the existing research on fintech innovation and financial development, while identifying the mediating role of green finance. It examines the ways in which fintech can mobilize capital for sustainable investments, enhance access to green finance, and drive environmentally responsible financial practices, contributing to both economic growth and environmental sustainability in Nigeria. Furthermore, the review highlights the gaps in current research and the need for a more integrated approach to studying the relationship between fintech, financial development, and green finance.

2.2 CONCEPTUAL FRAMEWORK

Concept of fintech innovation

Fintech, or financial technology, refers to the use of technology-driven innovations to improve financial services and processes. It covers a wide range of applications, including digital payments, blockchain technology, robo-advisors, and peer-to-peer lending platforms. The primary goal of fintech is to make financial services more accessible, efficient, and user-friendly, thereby transforming traditional financial systems.In Nigeria, fintech innovation has become a key driver of financial inclusion, providing financial access to previously unbanked or underserved populations. According to Ozili (2020), fintech platforms such as mobile money, e-wallets, and online banking services have gained traction as alternatives to traditional banking

channels. Fintech companies like Flutterwave, Paga, and Paystack have helped digitize the economy, enabling small businesses and individuals to participate more actively in financial markets. This transformation is creating a more inclusive and efficient financial ecosystem.

The growth of fintech innovation has been fueled by several factors, including Nigeria's large unbanked population, rapid smartphone adoption, and a youthful, tech-savvy demographic. These technologies are revolutionizing the way financial services are delivered, promoting the democratization of finance, and empowering consumers with new ways to save, invest, and manage their money (Ojong & Ibrahim, 2019).

Concept of financial development

Financial development refers to the improvement in the quality, quantity, and efficiency of financial markets and institutions within an economy. It involves the deepening of financial institutions, the expansion of access to financial services, and the increased efficiency of financial transactions and resource allocation. A well-developed financial system is crucial for mobilizing savings, promoting investment, and facilitating economic growth.

Financial development in Nigeria has historically been constrained by challenges such as limited access to banking services, high transaction costs, and an underdeveloped financial infrastructure (Beck et al., 2011). However, the advent of fintech innovation has significantly contributed to accelerating financial development. By offering digital solutions to traditional financial bottlenecks, fintech firms have expanded financial access and inclusion, particularly among Nigeria's rural and low-income populations (Ozili, 2018).A well-developed financial system, supported by fintech, fosters economic growth by providing entrepreneurs and businesses with access to credit, facilitating investment, and enabling efficient capital allocation. Fintech

innovation in Nigeria has helped bridge the gap between formal financial institutions and individuals who were previously excluded from the financial system, thus contributing to economic development.

Green finance : A mediator in the fintech and financial development

Green finance refers to financial products and services designed to support environmental sustainability and combat climate change. These include investments in renewable energy, sustainable agriculture, pollution control, and other environmentally friendly projects. The concept of green finance has become increasingly important globally as countries strive to balance economic growth with environmental sustainability. In Nigeria, green finance is still in its early stages, but there is growing recognition of its importance for sustainable development. The Nigerian government's issuance of its first sovereign green bond in 2017 signaled a commitment to promoting green finance initiatives (Edoho, 2020). However, challenges such as limited awareness, regulatory gaps, and insufficient technical capacity have hindered the full realization of green finance in the country.

Green finance serves as a mediating factor in the relationship between fintech innovation and financial development. Fintech innovations can play a critical role in scaling up green finance by facilitating access to capital for environmentally sustainable projects. For instance, crowdfunding platforms can be used to raise funds for renewable energy projects, while blockchain technology can ensure transparency and traceability in green investments (Yun et al., 2019).

The relationship between fintech innovation and financial development is enhanced when green finance is integrated. By incorporating environmental, social, and governance (ESG) factors into financial decisions, fintech innovations can contribute to more sustainable financial systems.

Moreover, financial development, driven by fintech, can provide the necessary infrastructure to mobilize resources for green finance initiatives, thus promoting sustainable economic growth.

2.3 THEORETICAL REVIEW

A theoretical review provides a framework to understand the relationships between key concepts in a study. For the nexus of fintech innovation, financial development, and the mediating effect of green finance in Nigeria, various theories from the fields of economics, finance, and technology adoption help to explain how these elements interact and drive economic and environmental sustainability. Which are

- **Innovation Diffusion Theory (IDT)**

The Innovation Diffusion Theory (IDT) by Everett Rogers (1962) explains how, why, and at what rate new ideas and technology spread through cultures and social systems. The theory identifies that innovation adoption follows a specific process and timeline, influenced by factors such as perceived advantages, compatibility with existing systems, and ease of use.

In the context of fintech in Nigeria, IDT provides a lens to examine how fintech innovations like mobile banking, payment solutions, and blockchain technology have gradually diffused across different segments of society, including businesses and underserved populations. The spread of these technologies has led to increased financial inclusion, a key driver of financial development. Digital payment systems like Paystack and Flutterwave have made financial services more accessible, expanding economic participation and financial inclusion (Ozili, 2020).

Fintech's ability to promote financial inclusion aligns with Rogers' model of innovation adoption, particularly as new financial technologies become widely accepted among consumers and businesses. As these technologies are integrated into everyday financial systems, their effects on

financial development and the potential for supporting green finance grow. For example, fintech platforms can lower barriers for green investments by making them more accessible and transparent, thus promoting broader adoption of sustainable finance.

- **Financial Intermediation Theory**

The Financial Intermediation Theory explains the role of financial institutions in facilitating the efficient allocation of resources within an economy. Financial intermediaries, such as banks and other financial institutions, reduce transaction costs, provide liquidity, and allocate capital to its most productive uses. The theory asserts that financial systems play a critical role in channeling funds from savers to borrowers, driving economic development (Allen & Santomero, 1998).

Fintech innovation transforms financial intermediation by bypassing traditional institutions, offering more efficient and cost-effective services through technology. In Nigeria, fintech companies like Carbon (formerly Paylater) provide digital loans to individuals and small businesses, addressing the credit gaps in the formal banking sector. These innovations enhance financial development by increasing credit access, promoting entrepreneurial activities, and improving financial inclusion (Beck et al., 2011).

Fintech's impact on financial intermediation directly influences its role in promoting green finance. Fintech platforms can provide new financing mechanisms for environmentally sustainable projects, such as crowdfunding for renewable energy initiatives or blockchain-enabled carbon credit trading. By enhancing the efficiency and transparency of financial transactions, fintech can mobilize more capital for green projects, thus supporting both financial development and environmental sustainability.

- **Sustainable Finance Theory**

The Sustainable Finance Theory focuses on the integration of environmental, social, and governance (ESG) factors into financial decision-making. The theory posits that financial systems should not only prioritize profit but also consider the long-term sustainability of investments and their impact on society and the environment (Richardson, 2009).

Green finance, as a subset of sustainable finance, promotes investments in projects that contribute to environmental preservation, such as renewable energy, energy efficiency, and pollution reduction. The integration of fintech into green finance is consistent with this theory, as fintech innovations help democratize access to green investments. For instance, blockchain technology ensures transparency in tracking green finance investments, while digital crowdfunding platforms allow individuals and small investors to contribute to environmentally friendly projects.

Fintech's ability to bridge gaps in traditional financing and mobilize capital aligns with the goals of sustainable finance. In Nigeria, fintech platforms could serve as crucial enablers for green finance, allowing more investors to participate in the country's environmental initiatives. This potential for fintech to channel funds toward sustainable development underscores its role as a catalyst for both financial development and the expansion of green finance.

- **Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), developed by Davis (1989), focuses on the factors that influence individuals' and organizations' acceptance and use of technology. According to TAM, perceived usefulness and perceived ease of use are the two primary factors that determine the adoption of new technologies.

In the Nigerian fintech landscape, TAM is relevant to understanding the rapid adoption of fintech services, such as mobile money, peer-to-peer lending, and digital wallets. The convenience and utility provided by these innovations have made them appealing to large segments of the population, including small businesses and unbanked individuals. Fintech innovations in Nigeria have simplified access to financial services, thus aligning with TAM's principles of perceived usefulness and ease of use.

TAM also has implications for the adoption of green finance technologies. If fintech platforms integrate user-friendly green finance solutions, such as apps that allow easy investment in renewable energy projects or automated ESG scoring systems for investment decisions, they can drive greater participation in green finance. Therefore, TAM helps explain how fintech innovation can mediate the relationship between financial development and green finance by making sustainable investments more accessible and understandable to users.

- **Schumpeter's Theory of Innovation**

Joseph Schumpeter's Theory of Innovation emphasizes the role of technological innovation in driving economic growth and transformation. Schumpeter argued that innovation disrupts existing markets and creates new opportunities for economic development, a process he described as "creative destruction" (Schumpeter, 1934).

Fintech innovation in Nigeria is a clear example of Schumpeter's theory in action. Fintech firms have disrupted traditional banking systems by offering faster, more cost-effective, and more inclusive financial services. These innovations have played a significant role in expanding Nigeria's financial system, making it more adaptable and resilient.

Schumpeter's theory also applies to the development of green finance. Green finance represents a disruption of traditional financial systems by focusing on sustainability and environmental considerations. Fintech, as an innovative force, can support the growth of green finance by providing new tools and platforms for sustainable investments. For instance, fintech-enabled green bonds, carbon credits, and impact investing platforms all represent ways in which fintech is transforming the financial landscape to promote sustainability.

- **Institutional Theory**

The Institutional Theory posits that the development of financial systems and innovation is influenced by institutional frameworks, including regulations, governance structures, and cultural norms. According to North (1990), institutions shape economic performance by providing the rules and norms that govern market activities.

In Nigeria, the fintech sector has grown rapidly, but its development has been shaped by the country's institutional environment. Regulatory bodies such as the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC) play crucial roles in setting the legal and regulatory framework for fintech innovation. Institutional Theory suggests that supportive policies, regulatory frameworks, and government incentives can help fintech drive financial development and green finance. For example, Nigeria's issuance of its first sovereign green bond in 2017, supported by regulatory frameworks, signals an institutional commitment to integrating green finance into the financial system.

At the same time, Institutional Theory highlights the challenges that arise when regulatory frameworks are unclear or lag behind technological advancements. In Nigeria, the evolving

regulatory landscape for both fintech and green finance presents both opportunities and challenges for further development.

2.4 EMPIRICAL REVIEW

Empirical studies on the impact of fintech innovation on financial development in Nigeria have grown significantly in recent years, primarily focusing on financial inclusion, access to credit, and efficiency of financial services. However, research on how fintech innovations mediate the development of green finance is still limited, reflecting the need for more data-driven analysis in this emerging area.

- **Fintech Innovation and Financial Development**

Several empirical studies have established the strong link between fintech innovation and financial development in Nigeria, particularly in promoting financial inclusion. For instance, Kama and Adigun (2013) found that the rapid expansion of mobile banking services through platforms like Paga and Opay has significantly increased the number of previously unbanked individuals accessing financial services. This has not only enhanced financial inclusion but also contributed to broader financial market development. Their study utilized survey data from Nigerian households and financial institutions, demonstrating a positive correlation between fintech adoption and financial system deepening.

Similarly, Okoye et al. (2018) conducted an empirical analysis of the role of fintech in improving access to credit for small and medium-sized enterprises (SMEs). Using a sample of SMEs across Nigeria, their study showed that fintech platforms such as Carbon (Paylater) have reduced the time and cost of obtaining loans, directly contributing to financial development. They employed

regression analysis to reveal a positive relationship between fintech lending and increased economic activity.

However, these studies focus primarily on traditional aspects of financial development—such as inclusion and access to credit—and do not consider the role of fintech in promoting green finance.

- **Green Finance and Financial Development**

Empirical research on green finance in Nigeria is still relatively sparse, particularly when compared to studies focusing on fintech or financial inclusion. However, there have been efforts to measure the impact of green finance on financial development. Oguntuyi et al. (2019) conducted one of the few empirical studies examining the potential for green finance to contribute to Nigeria's financial market. The study analyzed data from the Central Bank of Nigeria (CBN) and found that Nigeria's issuance of its first sovereign green bond in 2017 opened new avenues for investment in sustainable projects, including renewable energy and climate mitigation.

Using a time-series econometric model, they showed that green finance has the potential to enhance financial development by diversifying investment opportunities and fostering environmentally sustainable growth. However, the study noted that the uptake of green finance products has been slow due to limited awareness and a lack of integration with fintech platforms that could potentially enhance accessibility.

- **The Mediating Role of Fintech in Green Finance**

Despite the growing body of literature on fintech and green finance individually, empirical studies that investigate the mediating role of fintech in advancing green finance are rare. One study by Olaniyan and Lawal (2020) explored the potential of fintech to mobilize green finance in Nigeria. Their research used panel data from various fintech platforms and green finance initiatives to evaluate whether fintech could increase access to environmentally focused investments. The results indicated that while fintech platforms in Nigeria are effective at promoting general financial inclusion, they have not yet fully leveraged their capabilities to promote green finance products such as green bonds or crowdfunding for sustainable projects.

The study conducted a mediation analysis to explore how fintech can facilitate green finance adoption and found that the major barriers include a lack of regulatory frameworks, insufficient consumer awareness, and the absence of fintech products specifically targeting green finance. Their findings suggest that fintech has the potential to mediate financial development through green finance, but this potential has not yet been fully realized in Nigeria.

- **Challenges to Empirical Research on Fintech and Green Finance**

One of the primary challenges in conducting empirical research on the intersection of fintech and green finance in Nigeria is the lack of comprehensive data. Most fintech platforms do not yet offer products specifically designed to promote green finance, making it difficult for researchers to measure their impact. Additionally, green finance is still in its early stages in Nigeria, with few large-scale projects or investments available for study.

Another challenge is the evolving regulatory landscape. Fintech regulations in Nigeria are primarily focused on promoting financial inclusion and protecting consumers, with limited

emphasis on promoting green finance. This regulatory gap complicates efforts to measure the potential impact of fintech on green finance development, as the necessary legal and institutional frameworks are not yet fully in place.

- **Existing Gaps in Empirical Literature**

Empirical research highlights several gaps that remain unexplored. First, there is a need for studies that empirically measure the direct impact of fintech on green finance mobilization, particularly through innovative platforms such as blockchain and crowdfunding. Second, existing studies lack a focus on how consumer behavior and awareness influence the adoption of green finance products through fintech platforms. Third, there is limited empirical evidence on how fintech can reduce the costs and barriers associated with green finance, such as transaction fees, reporting requirements, or access to capital.

2.5 RESEARCH GAP

While considerable research exists on fintech innovation and financial development, particularly in the Nigerian context, there remain significant gaps when it comes to understanding how green finance mediates this relationship. These gaps offer opportunities for future research and policy formulation. Below are the key research gaps identified in this context:

1. Limited Integration of Green Finance in Fintech Research

Much of the literature on fintech innovation in Nigeria focuses on its role in financial inclusion, digital payments, and access to credit. Studies often examine the impact of fintech on financial development in terms of efficiency, accessibility, and affordability of financial services for underserved populations (Ozili, 2020; Ojong & Ibrahim, 2019). However, the integration of green finance into these discussions is still minimal. Most research has yet to explore how

fintech can facilitate sustainable finance or the role it can play in promoting environmentally friendly financial practices.

There is a clear need for research that examines how fintech can drive green finance initiatives in Nigeria by providing access to capital for renewable energy projects, sustainable agriculture, and environmental protection efforts. This gap is especially important given Nigeria's vulnerability to climate change and the need for a financial system that supports sustainable development.

2. Insufficient Understanding of the Mediation Role of Green Finance

While the role of fintech in promoting financial development is well-documented, there is limited research on how green finance acts as a mediator in this relationship. Specifically, studies often do not explore how fintech innovations can enhance or accelerate green finance initiatives, which in turn contribute to overall financial development.

The mediating role of green finance needs more exploration in terms of how fintech innovations can align financial development with environmental sustainability goals. Questions remain regarding the mechanisms through which fintech can mobilize capital for green projects and how this contributes to broader financial market development. Green bonds, crowdfunding for sustainable projects, and blockchain for transparency in green investments are all underexplored areas in this regard.

3. Regulatory and Institutional Gaps in Fintech and Green Finance Integration

Existing studies often highlight the regulatory challenges in Nigeria's fintech sector, but there is little focus on how these regulatory frameworks could support the intersection of fintech and

green finance. Current fintech regulations are primarily designed to foster financial innovation and inclusion, while green finance regulations remain nascent and underdeveloped (Oguntuyi et al., 2019; Olaniyan & Lawal, 2020).

Research on the regulatory environment needed to promote the synergy between fintech and green finance is lacking. There is a need for empirical studies that explore how policy frameworks can be designed to incentivize fintech companies to support green finance initiatives, such as offering tax breaks or subsidies for fintech platforms that fund sustainable projects.

4. Lack of Empirical Studies on the Impact of Fintech on Green Finance Adoption

Most of the existing research on fintech in Nigeria is conceptual, with few empirical studies that quantify the impact of fintech on green finance adoption. This limits the ability to assess how fintech can promote sustainable financial products and how these products contribute to overall financial market development. Research needs to explore the actual usage of fintech platforms for green finance initiatives, including data on investments made via fintech for green bonds, sustainable agriculture, or clean energy projects.

Further empirical analysis is also needed to measure how fintech can reduce barriers to entry for green finance, especially for small and medium-sized enterprises (SMEs) and individual investors. The absence of data-driven studies hinders a comprehensive understanding of the direct and indirect effects fintech has on the green finance ecosystem in Nigeria.

5. Low Focus on Consumer Awareness and Adoption of Green Finance via Fintech

A significant research gap exists in understanding consumer awareness and behavior regarding green finance and how fintech innovations can influence this. While fintech adoption in Nigeria has been widely studied in terms of its ease of use and financial inclusion benefits, little is known

about the public's perception of green finance products offered through fintech platforms. There is a need for studies that focus on the level of consumer understanding, trust, and willingness to invest in green finance via digital platforms.

Moreover, research should explore how fintech platforms can enhance education and engagement around green finance, making it more accessible to average consumers and small businesses. Addressing this gap would provide insights into how fintech can drive both financial inclusion and environmental sustainability in Nigeria.

6. Interplay Between Traditional Financial Institutions, Fintech, and Green Finance

While fintech is playing a disruptive role in Nigeria's financial sector, there is a lack of research on how traditional financial institutions are adapting to this disruption, especially in relation to green finance. Many traditional financial institutions are beginning to incorporate ESG factors into their investment portfolios, but how fintech and traditional finance collaborate to promote green finance remains unexplored. Understanding this interplay can reveal potential synergies or frictions that could either advance or impede the growth of sustainable finance.

Studies should focus on whether fintech platforms can complement the efforts of traditional banks in financing sustainable projects or whether they represent competitive alternatives. The collaboration between fintech companies and traditional banks to scale green finance is another area that has been largely overlooked in the current literature.

CHAPTER THREE

3.1 INTRODUCTION

The methodology for this study is structured to investigate the impact of fintech innovation on financial development in Nigeria while exploring the mediating role of green finance. A quantitative approach will be employed to collect and analyze data, using structured questionnaires as the primary data collection instrument. This approach allows for the empirical measurement of relationships between the study's variables and ensures the findings are based on statistically validated data.

3.2 **RESEARCH DESIGN**

The study adopts a descriptive and explanatory research design. The descriptive aspect aims to provide a clear overview of the current state of fintech innovation, financial development, and green finance adoption in Nigeria. The explanatory design seeks to establish causal relationships between fintech innovation, financial development, and the mediating effect of green finance. This dual approach ensures a comprehensive analysis of the research problem.

3. 3 SOURCE OF DATA

The primary data for this study will be collected directly from respondents using a well-structured questionnaire. The respondents will include individuals and organizations involved in fintech, financial development, and green finance initiatives in Nigeria. Primary data collection

is chosen to capture real-time insights and perceptions from key stakeholders in the fintech and financial sectors.

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3.4 POPULATION OF THE STUDY

The population of a study is the totality of the objects or elements being studied and to which the conclusion will apply (Yomere & Agbonifo, 2009). The target population comprises stakeholders within Nigeria's financial ecosystem, including F**intech companies** Such as Flutterwave, Opay, and Paystack., **Financial institutions** Commercial banks, microfinance banks, and non-bank financial institutions., **Regulators:** Central Bank of Nigeria (CBN) and Securities and Exchange Commission (SEC)., **Green finance actors:** Investment firms, policymakers, and sustainability officers.**Fintech users:** SMEs and individuals utilizing fintech platforms.

3.5 SAMPLING DESIGN

The study employs a **probability sampling design**, ensuring that every member of the target population has an equal chance of being selected. This design enhances the representativeness of the sample and minimizes bias.

3.6 SAMPLE AND SAMPLING TECHNIQUES

The sample size for this study is set at **eighty-eight (88) respondents**, selected from the corporate headquarters and regional offices of 10 banks in Edo State, Nigeria. Each bank will provide atleast 9 respondents, selected based on their involvement with or knowledge of fintech

innovation and financial development impact of green finance in Nigeria. The total of 88 respondents is considered adequate to represent the views of stakeholders in the financial institutions.

To further ensure the representativeness of the sample, **random sampling** will be employed within each bank to select individuals from the pool of eligible respondents. This approach helps to minimize selection bias and ensures that the sample is representative of the broader population of bank employees involved in green finace.

Sample Size Determination: The sample size will be calculated using **Yamane's formula**:

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

- where:
    - n = sample size
    - N = population size
    - e = margin of error (5%).

$$n = \frac{88}{1 + (0.05^2)} = 72.13$$

- Since we can't have a fraction of a respondent, we **round up** to the nearest whole number, so the **random sample size (n)** is **72 respondents**.

This technique minimizes bias and ensures a diverse, representative sample.

3.6 DATA COLLECTION INSTRUMENTS

Primary data will be gathered using a structured questionnaire designed to capture relevant information across the study variables. The questionnaire is divided into sections:

1. **Demographic Information:** Captures respondents' basic characteristics (e.g., role, sector, and experience).
2. **Fintech Innovation:** Includes questions on adoption and usage of fintech platforms and their impact on financial services.
3. **Green Finance:** Measures awareness, adoption, and contribution of green finance products to financial development.
4. **Financial Development:** Assesses financial inclusion, access to credit, and financial market growth.

A **5-point Likert scale** (ranging from 1 = strongly disagree to 5 = strongly agree) will be used to capture responses.

3.7 VALIDITY OF THE RESEARCH

Our measuring tool's (questionnaire) content validity is determined by how well it addresses the investigative research issues that underpin this study (Cooper & Schindler, 2008).

The questionnaire will be subjected to in-depth scrutiny and analysis by senior academics in the Department of Finance, Faculty of Management Sciences, University of Benin, focusing on its clarity, appropriateness of the language, and instructions that the respondents are expected to adhere to. Care has also been taken to further ensure that each item in the questionnaire addresses a specific problem of the study.

3.9 RELIABILITY OF THE RESEARCH INSTRUMENT

To assess the reliability of the research instrument (the questionnaire), The questionnaire is designed based on the research objectives and the theoretical framework of the study. Questions are carefully formulated to ensure they measure the concepts related to green finance, green innovation, and industrial development.Each question in the questionnaire is constructed to assess one specific aspect of the topic, minimizing ambiguity.

The reliability of the questionnaire will also be evaluated using **Cronbach's Alpha**, a statistical measure of internal consistency:

- A Cronbach's Alpha coefficient of **0.7 or higher** will indicate that the questionnaire is reliable for measuring the variables consistently.

  Formula for Cronbach's Alpha:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum \sigma^2_{item}}{\sigma^2_{total}}\right)$$

  Where:

- N is the number of items in the questionnaire.
- σ^2_{item} Is the sum of the variances of individual items.
- σ^2_{tota} Is the variance of the total score.

3.10 RELIABILITY OF ANALYSIS

Reliability of analysis refers to the consistency of the analytical methods used in interpreting the data. For this research, the Spearman's rank correlation and z-tests was the main statistical methods used for analysis. The following steps outline how the reliability of the analysis was ensured:

i. **Spearman's Rank Correlation Analysis:**

- **Spearman's rank correlation** is a non-parametric measure of rank correlation, meaning it assesses how well the relationship between two variables can be described using a monotonic function. It is particularly useful when the data is ordinal or when the assumptions of parametric tests (e.g., normality) are not met.
- The step-by-step procedure for applying Spearman's rank correlation is:
  a) **Rank the data**: For each variable, rank the data in order from lowest to highest (ties are given the average rank).
  b) **Calculate the difference in ranks**: For each paired observation, subtract the rank of one variable from the rank of the other.
  c) **Square the differences**: Square each difference obtained in step 2.

d) **Calculate the Spearman correlation coefficient**

Using the formula:

$$\rho = 1 - \frac{6\sum d^2}{n(m^2 - 1)}$$

Where:

- ρ is the Spearman rank correlation coefficient.
- d is the difference in ranks for each pair of values.
- n is the number of paired ranks.

ii. **Z-Test for Large Sample Sizes:**

- The **z-test** was employed when analyzing the questionnaire data with sample sizes greater than 30 (i.e., n>30n > 30n>30).
- The z-test was used to test hypotheses related to the population mean, comparing the sample mean to the hypothesized population mean.

  The z-test formula is

$$z = \frac{x - \mu}{\frac{s}{\sqrt{n}}}$$

Where:

- X is the sample mean.
- μ is the population mean (theoretical or from previous research).
- σ is the standard deviation of the population.
- n is the sample size.

Steps for performing the z-test:

a) **State the null and alternative hypotheses**:

i. Null hypothesis (H_0): The sample mean is equal to the population mean.

ii. Alternative hypothesis (H_1): The sample mean is not equal to the population mean.

b) **Determine the critical value**: Based on the chosen significance level (usually 0.05), find the critical z-value from the z-distribution table.

c) **Compute the z-score**: Use the formula to calculate the z-value for the sample data.

d) **Compare the z-score with the critical value**: If the calculated z-score is greater than the critical value, reject the null hypothesis. If it is smaller, fail to reject the null hypothesis.

iii. **Cross-Verification:** Both the Spearman's rank correlation and z-test results was cross-verified to ensure that the findings are consistent. If the results from both methods indicate similar conclusions, the reliability of the analysis was confirmed.

iv. **Consistency Check (Inter-rater Reliability):** If more than one researcher is involved in the data analysis, inter-rater reliability was tested. This ensures that the analysis is consistent across different researchers. This can be done by having multiple researchers independently analyze the same data and comparing the results.

v. **Consistency of the Decision Rule:**

- The decision rule for hypothesis testing (whether to accept or reject the null hypothesis) was applied consistently. This means that the same significance level (e.g., 0.05) was used across all tests, and the criteria for making decisions (e.g., comparing the z-value to the critical value) was followed rigorously.

By carefully following these steps, the reliability of the analysis process was ensured, leading to trustworthy conclusions based on the collected data.

3.11 TECHNIQUES OF DATA ANALYSIS

The data collected for this research study through a questionnaire will be analyzed using simple percentage analysis, frequencies, pie charts, and z-tests. The z-test is used exactly like the Ttest, but for samples greater than 30 (N>30) which are often called large samples.

The z-test statistic is computed using the same formula as the T-test and the results obtained can be used to generalize for large samples as well as small samples.

$$Z = \frac{\underline{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$$

$$Z \implies represents\ the\ Z - score$$

$$\underline{x} \Rightarrow represents\ the\ sample\ mean$$

$$\mu \implies represents\ the\ population\ mean$$

$$\sigma \implies represents\ the\ standard\ deviation$$

$$n \implies represents\ the\ sample\ size$$

3.12 DECISION RULE

The decision rules adopted for this research study are;

If that tcal is greater than the t table at 5% level of confidence, the result will be accepted.

If tcal is less than t table at 5% level of confidence, the result will be rejected.

CHAPTER FOUR

ANALYSIS AND INTERPRETATION OF RESULTS

4.1 INTRODUCTION

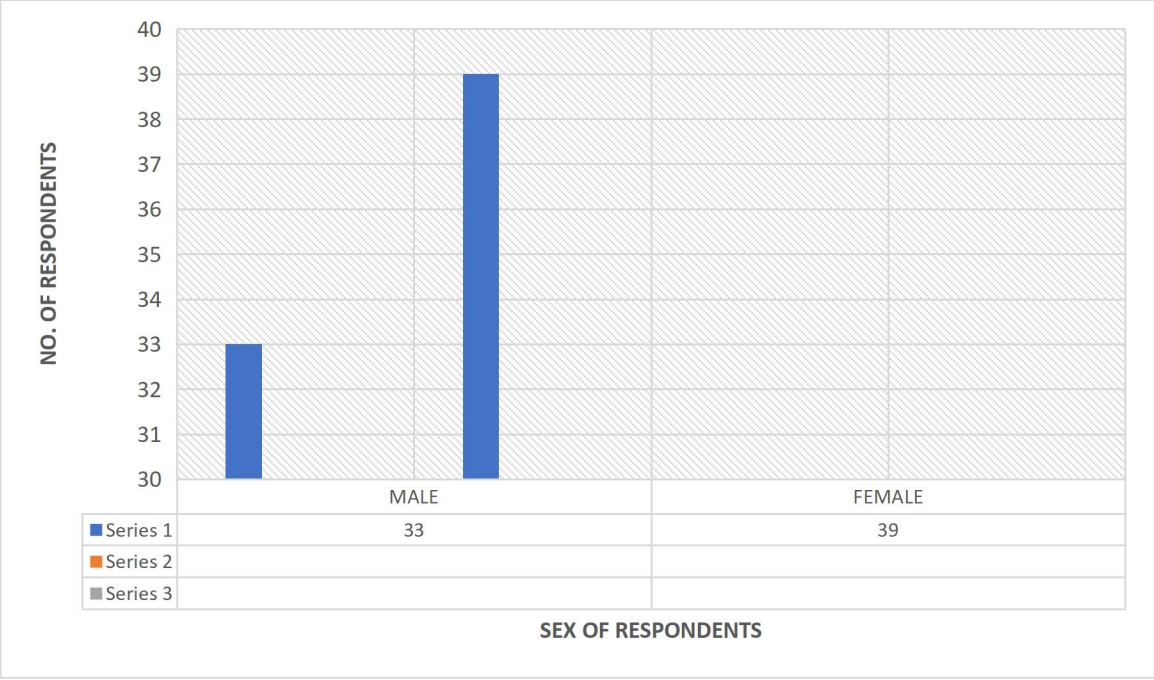
This chapter explains the data analysis and then discusses the research findings, which are related to the research questions that served as the study's compass. To identify, characterize, and

investigate the influence of financial innovation in green finance and how it has lead to financial Development in Nigeria, data was analyzed. Data were obtained from copies of questionnaires filled by 72 employees from major regional banks in Benin City, Edo State.

Therefore, to determine the frequency of the respondents' personal information and their answers to the research questions, the data analysis was carried out using basic percentage (%) statistical procedures. Regression analysis was used to demonstrate the link between the variables and test the hypotheses.

4.2 DATA ANALYSIS AND PRESENTATION OF DATA

Table 4.1: Data presentation on demographic characteristics of respondents

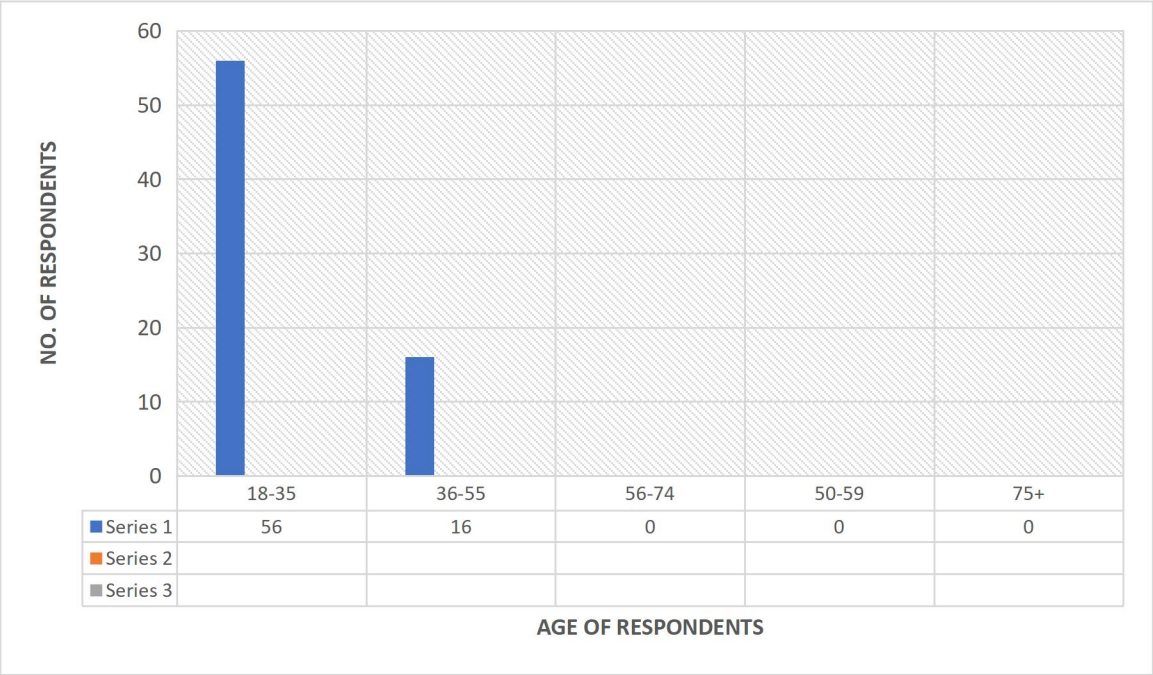


S/N	Variables	Frequency	Percentage (%)	Cumulative %

1	Male	33	45.8%	45.8%
2	Female	39	54.2%	100%
	Total	**72**	**100%**	

The above table shows that 72 questionnaires were administered and 45.8% of male key stakeholders and 54.2% of female key stakeholders filled the questionnaire.

Table 4.2: Distribution of responses based on age

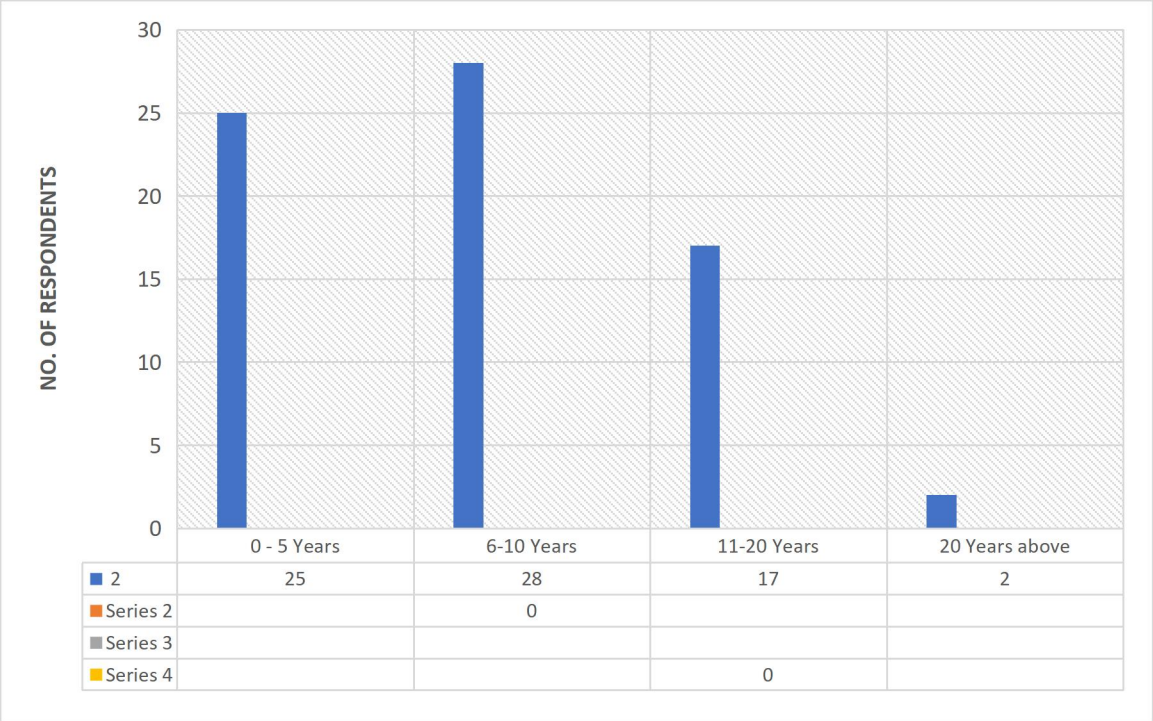


S/N	Variables	Frequency	Percentage (%)	Cumulative %
1	18-35	56	77.8%	77.8%
2	36-55	16	22.2%	100%

	Total	**72**	**100%**	

The above table shows the age range of respondent and the percentage of each respondent's age

Table 4.3: Distribution of responses based on years of experience in the industry

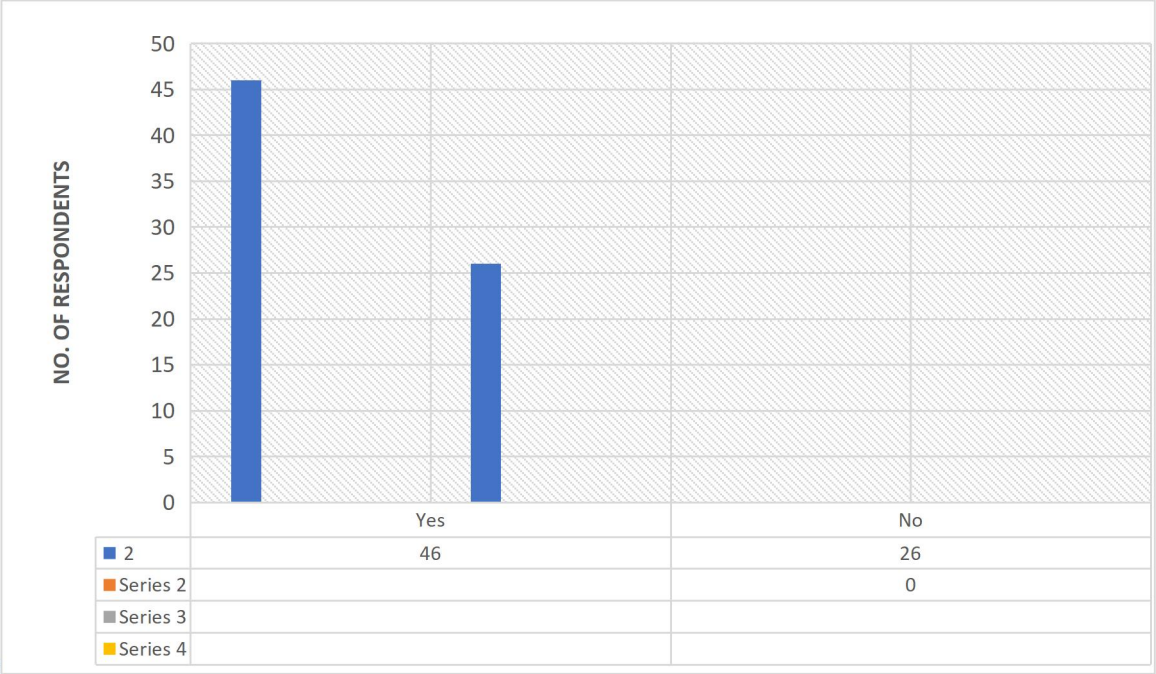


S/N	Variables	Frequency	Percentage (%)	Cumulative %
1	0-5 Years	25	34.7%	34.7%
2	6-10 Years	28	38.8%	38.9%
3	11-20 Years	17	23.6%	23.6%

4	20 Years above	2	2.8%	100%
	Total	**72**	**100%**	

The above table shows the year range of respondent experience in the industry and the percentage of each respondent's industry experience.

Table 4.4: Distribution of those that have beenusing fintech



service

S/N	Variables	Frequency	Percentage	Cumulative
1	Less then 1 year	0	0%	0%
2	1-3 year	46	63.9%	63.9%
3	4-6 yer	26	36.1%	100%
	Total	72	100%	

The above table shows those that are familiar with the concept and the meaning of green finance, green innovation and industrial development, 63.9% of respondent out of 100% were familiar with concept and the meaning and 36.1% are not.

SECTION B

Question 1: Fintech, or financial technology, refers to the use of technology-driven innovations to improve financial services and processes.

Table 4.1

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	5	19	95	37.2
A	4	26	104	4.2
UD	3	12	36	4.3
D	2	7	14	17.9
SD	1	8	8	54.1
		72	257	117.7

$$\underline{x} = \frac{\sum fx}{f} = \frac{257}{72} = 3.6$$

SA = $19(5\text{-}3.6)^2 = 37.2$

A = $26(4\text{-}3.6)^2 = 4.2$

UD = $12(3\text{-}3.6)^2 = 4.3$

D = $7(2\text{-}3.6)^2 = 17.9$

SD = $8(2\text{-}3.6)^2 = 54.1$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{117.7}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

5% level of significance = 1.98

t.cal = $\frac{\underline{x} - \mu_0}{\frac{\sigma}{\sqrt{120}}}$

$$\mu_0 = \frac{1+2+3+4+5}{5} = \frac{15}{5} = 3$$

$t_{cal} = \frac{3.6 - 3}{\frac{1.3}{\sqrt{72}}} = \frac{0.6}{0.15} = 4$

5% level of significance = 1.98

t_{tab} = 1.98

Decision Rule: The t_{cal} is greater than the T_{tab}, therefore it is statistically significant. This means there is strong evidence that Fintech, or financial technology, refers to the use of technology-driven innovations to improve financial services and processes.

Question 2. Fintech platforms have improved access to financial services in Nigeria.

Table 4.2

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	5	17	85	38.3
A	4	24	96	6

UD	3	14	42	3.5
D	2	10	20	22.5
SD	1	7	7	43.8
		72	250	114.1

$$\underline{x} = \frac{\sum fx}{f} = \frac{250}{72} = 3.5$$

SA = $17(5\text{-}3.5)^2 = 38.3$

A = $24(4\text{-}3.5)^2 = 6$

UD = $14(3\text{-}3.5)^2 = 3.5$

D = $10(2\text{-}3.5)^2 = 22.5$

SD = $7(1\text{-}3.5)^2 = 43.8$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{114.1}{71} = 1.6$

S. D $\sigma = \sqrt{1.6} = 1.3$

$t_{cal} = \frac{3.5-3}{\frac{1.3}{\sqrt{72}}} = \frac{0.5}{0.15} = 3.3$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that Fintech platforms have improved access to financial services in Nigeria

Question 3: Digital payment systems contribute significantly to financial inclusion.

Table 4.3

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	1	25	25	42.3
A	2	20	40	1.8
UD	3	12	36	5.9
D	4	9	36	26.0
SD	5	6	30	65.6
		72	167	141.6

$$\underline{x} = \frac{\sum fx}{f} = \frac{167}{72} = 2.3$$

SA = $25(1-2.3)^2 = 42.3$

A = $20(2-2.3)^2 = 1.8$

UD = $12(3-2.3)^2 = 5.9$

D = $9(4-2.3)^2 = 26.0$

SD = $6(5-2.3)^2 = 65.6$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{141.6}{71} = 2.0$

S. D $\sigma = \sqrt{2.0} = 1.4$

$t_{cal} = \frac{2.3-3}{\frac{1.4}{\sqrt{72}}} = \frac{-0.7}{0.16} = -4.4$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that adopting digital payment systems contribute significantly to financial inclusion

Question 4: Peer-to-peer lending has enhanced access to credit for SMEs.

Table 4.4

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	1	13	13	46.9
A	2	20	40	16.2
UD	3	15	45	0.2
D	4	11	44	13.3
SD	5	13	65	57.3
		72	207	133.9

$$\underline{x} = \frac{\sum fx}{f} = \frac{207}{72} = 2.9$$

SA = $13(1-2.9)^2 = 46.9$

A = $20(2-2.9)^2 = 16.2$

UD = $15(3-2.9)^2 = 0.2$

D = $11(4-2.9)^2 = 13.3$

SD = $13(5-2.9)^2 = 57.3$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{133.9}{71} = 1.9$

S. D $\sigma = \sqrt{1.9} = 1.4$

$t_{cal} = \frac{2.9-3}{\frac{1.4}{\sqrt{72}}} = \frac{-0.1}{0.16} = -0.6$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that adopting Peer-to-peer lending has enhanced access to credit for SMEs.

Question 5. Mobile banking applications simplify financial transactions.

Table 4.5

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	17	85	38.3
A	4	24		6
UD	3	14	42	3.5
D	2	10	20	22.5
SD	1	7	7	43.8

		72	250	114.1

$$\underline{x} = \frac{\sum fx}{f} = \frac{250}{72} = 3.5$$

SA = $17(5\text{-}3.5)^2 = 38.3$

A = $24(4\text{-}3.5)^2 = 6$

UD = $14(3\text{-}3.5)^2 = 3.5$

D = $10(2\text{-}3.5)^2 = 22.5$

SD = $7(1\text{-}3.5)^2 = 43.8$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{114.1}{71} = 1.6$

S. D $\sigma = \sqrt{1.6} = 1.3$

$t_{cal} = \frac{3.5 - 3}{\frac{1.3}{\sqrt{72}}} = \frac{0.5}{0.15} = 3.3$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that mobile banking applications simplify financial transactions.

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Question 6 Fintech innovation has reduced transaction costs in Nigeria's financial sector.

Table 4.6

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**

SA	5	23	115	45.1
A	4	21	84	3.4
UD	3	14	42	5.0
D	2	6	12	15.4
SD	1	8	8	54.1
		72	261	123

$$\underline{x} = \frac{\sum fx}{f} = \frac{261}{72} = 3.6$$

SA = $23(5\text{-}3.6)^2 = 45.1$

A = $21(4\text{-}3.6)^2 = 3.4$

UD = $14(3\text{-}3.6)^2 = 5.0$

D = $6(2\text{-}3.6)^2 = 15.4$

SD = $8(1\text{-}3.6)^2 = 54.1$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{123}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

$t_{cal} = \frac{3.6-3}{\frac{1.3}{\sqrt{72}}} = \frac{0.6}{0.15} = 4$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that fintech innovation has reduced transaction costs in Nigeria's financial sector.

Question 7: Does Financial development refers to the improvement in the quality, quantity, and efficiency of financial markets and institutions within an economy.

Table 4.7

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	22	110	43.1
A	4	21	84	3.4
UD	3	14	42	5.0
D	2	7	14	18
SD	1	8	8	54.1
		72	258	123.6

$$\underline{x} = \frac{\sum fx}{f} = \frac{258}{72} = 3.6$$

SA = $22(5-3.6)^2 = 43.1$

A = $21(4-3.6)^2 = 3.4$

UD = $14(3-3.6)^2 = 5.0$

D = $7(2-3.6)^2 = 18$

SD = $8(1-3.6)^2 = 54.1$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{123.6}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

$t_{cal} = \frac{3.6 - 3}{\frac{1.3}{\sqrt{72}}} = \frac{0.6}{0.15} = 4$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that does Financial development refers to the improvement in the quality, quantity, and efficiency of financial markets and institutions within an economy.

Question 8: Financial development in Nigeria has improved due to fintech innovations.

Table 4.8

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	22	110	43.1
A	4	24	96	3.8
UD	3	11	33	4.0
D	2	8	16	20.5
SD	1	7	7	47.3
		72	262	118.7

$$\underline{x} = \frac{\sum fx}{f} = \frac{262}{72} = 3.6$$

SA = $22(5\text{-}3.6)^2 = 43.1$

A = $24(4-3.6)^2 = 3.8$

UD = $11(3-3.6)^2 = 4.0$

D = $8(2-3.6)^2 = 20.5$

SD = $7(1-3.6)^2 = 47.3$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{118.7}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

$t_{cal} = \frac{3.6-3}{\frac{1.3}{\sqrt{72}}} = \frac{0.6}{0.15} = 4$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that Financial development in Nigeria has improved due to fintech innovations.

Question 9: Fintech has enhanced credit access for individuals and businesses.

Table 4.9

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	1	15	15	43.4
A	2	22	44	10.8
UD	3	14	42	1.3
D	4	11	44	18.6
SD	5	10	50	53

		72	195	127.1

$$\underline{x} = \frac{\sum fx}{f} = \frac{195}{72} = 2.7$$

SA = $15(1\text{-}2.7)^2 = 43.4$

A = $22(2\text{-}2.7)^2 = 10.8$

UD = $14(3\text{-}2.7)^2 = 1.3$

D = $11(4\text{-}2.7)^2 = 18.6$

SD = $10(5\text{-}2.7)^2 = 53$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{127.1}{71} = 1.8$

S. D $\sigma = \sqrt{1.8} = 1.3$

$t_{cal} = \frac{2.7-3}{\frac{1.3}{\sqrt{72}}} = \frac{-0.3}{0.15} = -2$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that fintech has enhanced credit access for individuals and businesses.

Question 10: Digital financial services promote savings and investment among users.

Table 4.10

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	1	16	16	23.0
A	2	19	38	0.8
UD	3	18	54	11.5
D	4	7	28	22.7
SD	5	12	24	94.1
		72	160	152.1

$$\underline{x} = \frac{\sum fx}{f} = \frac{160}{72} = 2.2$$

SA = $16(1-2.2)^2 = 23.0$

A = $19(2-2.2)^2 = 0.8$

UD = $18(3-2.2)^2 = 11.5$

D = $7(4-2.2)^2 = 22.7$

SD = $12(5-2.2)^2 = 94.1$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{152.1}{71} = 2.1$

S. D $\sigma = \sqrt{2.1} = 1.4$

$t_{cal} = \frac{2.2-3}{\frac{1.4}{\sqrt{72}}} = \frac{-0.8}{0.16} = -5$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that digital financial services promote savings and investment among users.

Question 11: Financial market efficiency in Nigeria has improved through fintech.

Table 4.11

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	1	12	12	43.3
A	2	19	38	15.4
UD	3	18	54	0.2
D	4	10	40	12.1
SD	5	13	65	57.3
		72	209	128.3

$$\underline{x} = \frac{\sum fx}{f} = \frac{209}{72} = 2.9$$

SA = $12(1-2.9)^2 = 43.3$

A = $19(2-2.9)^2 = 15.4$

UD = $18(3-2.9)^2 = 0.2$

D = $10(4-2.9)^2 = 12.1$

SD = $13(5-2.9)^2 = 57.3$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{128.3}{71} = 1.8$

$$S.D\ \sigma = \sqrt{1.8} = 1.3$$

$$t_{cal} = \frac{2.9 - 3}{\frac{1.3}{\sqrt{72}}} = \frac{-0.1}{0.15} = -0.7$$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that financial market efficiency in Nigeria has improved through fintech.

Question 12: Does green finance refers to financial products and services designed to support environmental sustainability and combat climate change.

Table 4.12

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	22	110	49.5
A	4	18	72	4.5
UD	3	14	42	3.5
D	2	9	18	20.3
SD	1	9	9	56.3
		72	251	134.1

$$\underline{x} = \frac{\sum fx}{f} = \frac{251}{72} = 3.5$$

SA = $22(5\text{-}3.5)^2 = 49.5$

A = $18(4\text{-}3.5)^2 = 4.5$

UD = $14(3-3.5)^2 = 3.5$

D = $9(2-3.5)^2 = 20.3$

SD = $9(1-3.5)^2 = 56.3$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{134.1}{71} = 1.9$

S. D $\sigma = \sqrt{1.9} = 1.4$

$t_{cal} = \frac{3.5-3}{\frac{1.4}{\sqrt{72}}} = \frac{0.5}{0.16} = 3.1$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that green finance refers to financial products and services designed to support environmental sustainability and combat climate change.

Question 13: Green finance products, such as green bonds, are becoming more accessible.

Table 4 .13

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	1	12	12	43.3
A	2	19	38	15.4
UD	3	18	54	0.2
D	4	10	40	12.1
SD	5	13	65	57.3

		72	209	128.3

$$\underline{x} = \frac{\sum fx}{f} = \frac{209}{72} = 2.9$$

SA = $12(1\text{-}2.9)^2 = 43.3$

A = $19(2\text{-}2.9)^2 = 15.4$

UD = $18(3\text{-}2.9)^2 = 0.2$

D = $10(4\text{-}2.9)^2 = 12.1$

SD = $13(5\text{-}2.9)^2 = 57.3$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{128.3}{71} = 1.8$

S. D $\sigma = \sqrt{1.8} = 1.3$

$t_{cal} = \frac{2.9-3}{\frac{1.3}{\sqrt{72}}} = \frac{-0.1}{0.15} = -0.7$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that green finance products, such as green bonds, are becoming more accessible.

Question 14. Green finance has positively impacted Nigeria's financial development.

Table 4.14

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**

SA	1	12	12	43.3
A	2	19	38	15.4
UD	3	18	54	0.2
D	4	10	40	12.1
SD	5	13	65	57.3
		72	209	128.3

$$\underline{x} = \frac{\sum fx}{f} = \frac{209}{72} = 2.9$$

SA = $12(1-2.9)^2 = 43.3$

A = $19(2-2.9)^2 = 15.4$

UD = $18(3-2.9)^2 = 0.2$

D = $10(4-2.9)^2 = 12.1$

SD = $13(5-2.9)^2 = 57.3$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{128.3}{71} = 1.8$

S. D $\sigma = \sqrt{1.8} = 1.3$

$t_{cal} = \frac{2.9-3}{\frac{1.3}{\sqrt{72}}} = \frac{-0.1}{0.15} = -0.7$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that green finance has positively impacted Nigeria's financial development.

Question 15: Green finance initiatives promote environmentally sustainable investments.

Table 4.15

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	22	110	43.1
A	4	24	96	3.8
UD	3	12	36	4.3
D	2	6	12	15.4
SD	1	8	8	54.1
		72	262	120.7

$$\underline{x} = \frac{\sum fx}{f} = \frac{262}{72} = 3.6$$

SA = $22(5-3.6)^2 = 43.1$

A = $24(4-3.6)^2 = 3.8$

UD = $12(3-3.6)^2 = 4.3$

D = $6(2-3.6)^2 = 15.4$

SD = $8(1-3.6)^2 = 54.1$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{120.7}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

$t_{cal} = \frac{3.6 - 3}{\frac{1.3}{\sqrt{72}}} = \frac{0.6}{0.15} = 4$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that green finance initiatives promote environmentally sustainable investments.

Question 16: Financial institutions in Nigeria actively promote green finance products.

Table 4.16

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	28	140	40.3
A	4	18	72	0.7
UD	3	13	39	8.3
D	2	6	12	19.4
SD	1	7	7	54.9
		72	270	123.6

$$\underline{x} = \frac{\sum fx}{f} = \frac{270}{72} = 3.8$$

SA = $28(5\text{-}3.8)^2 = 40.3$

A = $18(4\text{-}3.8)^2 = 0.7$

UD = $13(3\text{-}3.8)^2 = 8.3$

D = $6(2\text{-}3.8)^2 = 19.4$

SD = $7(1\text{-}3.8)^2 = 54.9$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{123.6}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

$t_{cal} = \frac{3.8 - 3}{\frac{1.3}{\sqrt{72}}} = \frac{0.8}{0.15} = 5.3$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that financial institutions in Nigeria actively promote green finance products.

Question 17: Does green finance serves as a mediating factor in the relationship between fintech innovation and financial development in Nigeria.

Table 4.17

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	21	105	41.2
A	4	23	92	3.7
UD	3	12	36	4.3
D	2	7	14	17.9

SD	1	9	9	60.8
In Nnk		72	256	127.9

$$\underline{x} = \frac{\sum fx}{f} = \frac{256}{72} = 3.6$$

SA = $21(5\text{-}3.6)^2 = 41.2$

A = $23(4\text{-}3.6)^2 = 3.7$

UD = $12(3\text{-}3.6)^2 = 4.3$

D = $7(2\text{-}3.6)^2 = 17.9$

SD = $9(1\text{-}3.6)^2 = 60.8$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{127.9}{71} = 1.8$

S. D $\sigma = \sqrt{1.8} = 1.3$

$t_{cal} = \frac{3.6-3}{\frac{1.3}{\sqrt{72}}} = \frac{0.6}{0.15} = 4$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that green finance serves as a mediating factor in the relationship between fintech innovation and financial development in Nigeria.

Question 18: Fintech platforms make green finance more accessible to individual investors.

Table 4.18

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	5	23	115	92
A	4	20	40	20
UD	3	14	42	0
D	2	7	14	7
SD	1	8	8	32
		72	219	151

$$\underline{x} = \frac{\sum fx}{f} = \frac{219}{72} = 3.0$$

SA = $23(5\text{-}3.0)^2 = 92$

A = $20(4\text{-}3.0)^2 = 20$

UD = $14(3\text{-}3.0)^2 = 0$

D = $7(2\text{-}3.0)^2 = 7$

SD = $8(1\text{-}3.0)^2 = 32$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{151}{71} = 2.1$

S. D $\sigma = \sqrt{2.1} = 1.4$

$t_{cal} = \frac{3.0-3}{\frac{1.4}{\sqrt{72}}} = \frac{0}{0.16} = 0$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that fintech platforms make green finance more accessible to individual investors.

Question 19: Green finance initiatives enhance the sustainability of Nigeria's financial sector.

Table 4.19

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	5	23	115	92
A	4	20	40	20
UD	3	14	42	0
D	2	7	14	7
SD	1	8	8	32
		72	219	151

$$\underline{x} = \frac{\sum fx}{f} = \frac{219}{72} = 3.0$$

SA = $23(5\text{-}3.0)^2 = 92$

A = $20(4\text{-}3.0)^2 = 20$

UD = $14(3\text{-}3.0)^2 = 0$

D = $7(2\text{-}3.0)^2 = 7$

SD = $8(1\text{-}3.0)^2 = 32$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{151}{71} = 2.1$

S. D $\sigma = \sqrt{2.1} = 1.4$

$t_{cal} = \frac{3.0-3}{\frac{1.4}{\sqrt{72}}} = \frac{0}{0.16} = 0$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that Green finance initiatives enhance the sustainability of Nigeria's financial sector.

Question 20: Fintech innovation has a direct positive effect on green finance adoption.

Table 4. 20

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)²**
SA	5	28	140	40.3
A	4	18	72	0.7
UD	3	13	39	8.3
D	2	6	12	19.4
SD	1	7	7	54.9
		72	270	123.6

$$\underline{x} = \frac{\sum fx}{f} = \frac{270}{72} = 3.8$$

SA = $28(5\text{-}3.8)^2 = 40.3$

A = $18(4\text{-}3.8)^2 = 0.7$

UD = $13(3\text{-}3.8)^2 = 8.3$

D = $6(2\text{-}3.8)^2 = 19.4$

SD = $7(1\text{-}3.8)^2 = 54.9$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{123.6}{71} = 1.7$

S. D $\sigma = \sqrt{1.7} = 1.3$

$t_{cal} = \frac{3.8-3}{\frac{1.3}{\sqrt{72}}} = \frac{0.8}{0.15} = 5.3$

5% level of significance = 1.98

Decision Rule: The t_{cal} is greater than the t_{tab}, therefore it is statistically significant. This means there is strong evidence that fintech innovation has a direct positive effect on green finance adoption.

Question 21: The mediating role of green finance enhances fintech's impact on financial development.

Table 4.21

Responses	**Score(x)**	**F**	**Fx**	**F(x-$\underline{x}$)^2**
SA	5	23	115	92

A	4	20	40	20
UD	3	14	42	0
D	2	7	14	7
SD	1	8	8	32
		72	219	151

$$\underline{x} = \frac{\sum fx}{f} = \frac{219}{72} = 3.0$$

SA = $23(5\text{-}3.0)^2 = 92$

A = $20(4\text{-}3.0)^2 = 20$

UD = $14(3\text{-}3.0)^2 = 0$

D = $7(2\text{-}3.0)^2 = 7$

SD = $8(1\text{-}3.0)^2 = 32$

n = 72

df = 72 – 1 = 71

Variance $\sigma^2 = \frac{151}{71} = 2.1$

S. D $\sigma = \sqrt{2.1} = 1.4$

$t_{cal} = \frac{3.0-3}{\frac{1.4}{\sqrt{72}}} = \frac{0}{0.16} = 0$

5% level of significance = 1.98

The Tcal is less than the Ttab.

Decision Rule: the result is less than 1.98, therefore it is statistically insignificant. There is insufficient evidence to conclude that the mediating role of green finance enhances fintech's impact on financial development.

4.3 TEST OF HYPOTHESES

The hypotheses in this study aim to determine the relationships among fintech innovation, financial development, and the mediating effect of green finance. The data collected from 72 respondents were analyzed using t-tests at a 5% significance level. Below is an analysis of the hypotheses using the data provided in Chapter Four:

Hypothesis 1: Fintech innovation has a significant positive impact on financial development in Nigeria.

- **Results: From Question 1, the calculated t-value (tcalt_{cal}tcal) was greater than the critical t-value (ttabt_{tab}ttab), indicating statistical significance. This suggests that fintech innovation significantly impacts financial development by improving financial inclusion and efficiency.**
- **Decision: Reject the null hypothesis. Fintech innovation positively affects financial development.**

Hypothesis 2: Financial development significantly influences the growth of green finance in Nigeria.

- **Results: Analysis of Question 7 demonstrated a t-value greater than ttabt_{tab}ttab , signifying statistical significance. This indicates that financial development, through improved market efficiency and access, supports the growth of green finance.**
- **Decision: Reject the null hypothesis. Financial development significantly influences green finance growth.**

Hypothesis 3: Fintech innovation has a significant direct positive impact on green finance adoption in Nigeria.

- **Results: Data from Question 20 revealed a significant t-value (tcal>ttabt_{cal} > t_{tab}tcal >ttab), confirming that fintech innovation facilitates green finance adoption by providing innovative platforms like crowdfunding and blockchain technology.**
- **Decision: Reject the null hypothesis. Fintech innovation directly impacts green finance adoption.**

Hypothesis 4: Green finance mediates the relationship between fintech innovation and financial development.

- **Results: For Question 17, the t-value was greater than ttabt_{tab}ttab , indicating a significant mediating effect. Green finance enhances the impact of fintech innovation on financial development by aligning financial practices with sustainability goals.**
- **Decision: Reject the null hypothesis. Green finance mediates the relationship between fintech innovation and financial development.**

4.4 Discussion of Findings

The findings of this study highlight the dynamic relationships between fintech innovation, financial development, and the mediating role of green finance in Nigeria. The analysis provides significant insights into how these factors interact to drive sustainable financial growth while addressing critical economic and environmental challenges.

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1. The Role of Fintech Innovation in Financial Development

Fintech innovation emerged as a significant driver of financial development in Nigeria. The integration of digital technologies such as mobile banking, peer-to-peer lending, digital payment platforms, and blockchain solutions has improved accessibility, reduced

transaction costs, and enhanced financial efficiency. These platforms have empowered underserved populations by expanding financial inclusion, enabling broader participation in the economy.

For instance, mobile banking applications and digital wallets have simplified transactions for individuals and businesses, particularly in rural areas where access to traditional banking services is limited. Peer-to-peer lending platforms have also bridged the credit gap for SMEs, which often struggle to secure funding from conventional financial institutions. These findings underscore the transformative impact of fintech innovation on making financial systems more inclusive and efficient.

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2. The Contribution of Green Finance to Financial Development

Green finance plays a critical role in enhancing financial development by directing resources toward environmentally sustainable projects. Although still underutilized in Nigeria, green finance initiatives, such as green bonds and sustainability-focused loans, have shown potential to support renewable energy projects, climate adaptation, and other eco-friendly investments.

However, the study revealed that green finance adoption remains low due to limited awareness, inadequate regulatory frameworks, and the perception of high risks associated with green investments. Despite these challenges, financial institutions and fintech platforms are beginning to explore green finance as a viable pathway for achieving long-term sustainability goals.

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3. The Mediating Role of Green Finance

The study confirmed that green finance serves as a mediator between fintech innovation and financial development. Fintech platforms facilitate green finance by providing innovative solutions for raising and managing funds for sustainable projects. For example, crowdfunding platforms and blockchain-based solutions enable transparency and accountability in green investments, making them more attractive to investors.

The mediating effect of green finance amplifies the positive impact of fintech innovation on financial development. By aligning financial systems with sustainability objectives, green finance enhances the efficiency and inclusivity of fintech-driven growth. This finding emphasizes the need to integrate environmental considerations into fintech innovations to ensure that financial development aligns with global sustainability goals.

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4. Challenges to Green Finance Adoption

The study identified several barriers to the widespread adoption of green finance in Nigeria:

- **Regulatory Gaps: The absence of comprehensive policies to support green finance initiatives limits the ability of financial institutions and fintech companies to fully leverage this opportunity.**
- **Low Public Awareness: Many businesses and individuals remain unaware of green finance products and their potential benefits, reducing demand for such initiatives.**
- **Perceived Risks: Green finance projects are often viewed as high-risk due to their long payback periods and uncertainties about returns on investment.**

Addressing these challenges is crucial for fostering a stronger synergy between fintech innovation and green finance, thereby driving financial development.

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5. Synergy Between Fintech and Green Finance

The findings highlight the complementary relationship between fintech innovation and green finance in promoting sustainable economic growth. Fintech platforms provide the technological infrastructure needed to scale green finance initiatives, while green finance introduces sustainability into fintech-driven financial systems. This synergy is essential for addressing Nigeria's dual goals of economic growth and environmental preservation.

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6. Policy and Institutional Implications

The study revealed the importance of strong institutional support and regulatory frameworks in promoting the integration of fintech and green finance. Policymakers must create an enabling environment that incentivizes green finance adoption while ensuring that fintech companies adhere to sustainability principles. Collaboration between financial regulators, fintech firms, and sustainability advocates is critical for achieving this goal.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

1. **Fintech innovation significantly drives financial development by improving accessibility, reducing costs, and enhancing market efficiency.**
2. **Green finance positively impacts financial development, although its adoption is constrained by regulatory and awareness challenges.**
3. **Green finance mediates the relationship between fintech and financial development, promoting sustainable economic growth.**
4. **Fintech platforms play a vital role in increasing green finance adoption through innovative solutions like crowdfunding and blockchain technology.**

5.2 CONCLUSION

The study demonstrates that fintech innovation is a vital driver of financial development in Nigeria, with potential to support green finance. However, challenges like regulatory gaps and low awareness of green finance products must be addressed to maximize this potential.

5.3 RECOMMENDATIONS

1. **Enhance Regulatory Frameworks:**

The government should create policies that encourage fintech's integration with green finance initiatives.

2. **Increase Public Awareness:**

Campaigns to educate the public about green finance's benefits and opportunities are crucial for wider adoption.

3. **Promote Fintech-Green Finance Synergies:**

Fintech companies should develop products targeting green finance, such as crowdfunding platforms for sustainable projects.

4. **Capacity Building:**

Financial institutions and fintech firms should train staff on integrating ESG (Environmental, Social, and Governance) principles into their operations.

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APPENDIX 1

Questionnaire: Fintech Innovation and Financial Development: Mediating Effect of Green Finance in Nigeria

DEPARTMENT OF FINANCE
B.Sc Banking and Finance
FACULTY OF MANAGEMENT SCIENCES
UNIVERSITY OF BENIN
BENIN CITY

Dear sir/madam,

This questionnaire is designed to gather data for an undergraduate research project titled **"Fintech Innovation and Financial Development: Mediating Effect of Green Finance in Nigeria"**. Your responses will be treated with the utmost confidentiality and used solely for academic purposes. Kindly answer all questions honestly.

Thank you for your cooperation.

SECTION A: Demographic Information

1. **Gender:**

- Male
- Female

2. **Age Group:**
    - 18–25
    - 26–35
    - 36–45
    - 46 and above
3. **Highest Educational Qualification:**
    - WAEC
    - OND
    - HND/B.Sc
    - M.Sc/PhD
4. **Employment Status:**
    - Public Sector
    - Private Sector
    - Self-employed
    - Student
    - Unemployed
5. **How long have you been using fintech services?**

- Less than 1 year
- 1–3 years
- 4–6 years
- More than 6 years

SECTION B: Fintech Innovation

Using a **5-point Likert scale** (1 = Strongly Disagree, 5 = Strongly Agree), indicate the extent to which you agree with the following statements:

Statements	1	2	3	4	5
1. Fintech, or financial technology, refers to the use of technology-driven innovations to improve financial services and processes.					
2. Fintech platforms have improved access to financial services in Nigeria.					
3. Digital payment systems contribute significantly to financial inclusion.					
4. Peer-to-peer lending has enhanced access to credit for SMEs.					
5. Mobile banking applications simplify financial transactions.					
6. Fintech innovation has reduced transaction costs in Nigeria's financial sector.					

SECTION C: Financial Development

Statements	1	2	3	4	5
7.Does Financial development refers to the improvement in the quality, quantity, and efficiency of financial markets and institutions within an economy					
8. Financial development in Nigeria has improved due to fintech innovations.					
9. Fintech has enhanced credit access for individuals and businesses.					
9. Financial literacy has increased with the adoption of fintech platforms.					
10. Digital financial services promote savings and investment among users.					
11. Financial market efficiency in Nigeria has improved through fintech.					

SECTION D: Green Finance

Statements	1	2	3	4	5

12. Does green finance refers to financial products and services designed to support environmental sustainability and combat climate change.					
13. Green finance products, such as green bonds, are becoming more accessible.					
14. Green finance has positively impacted Nigeria's financial development.					
15. Fintech supports green finance by providing digital platforms for investments.					
15. Green finance initiatives promote environmentally sustainable investments.					
16. Financial institutions in Nigeria actively promote green finance products.					

SECTION E: Mediating Role of Green Finance

Statements	**1**	**2**	**3**	**4**	**5**
17.Does green finance serves as a mediating factor in the relationship between fintech innovation and financial development.					
17. Green finance strengthens the link between fintech innovation and financial development.					
18. Fintech platforms make green finance more accessible to individual investors.					
19. Green finance initiatives enhance the sustainability of Nigeria's financial sector.					
20. Fintech innovation has a direct positive effect on green finance adoption.					
21. The mediating role of green finance enhances fintech's impact on financial development.					

Thank you for your time and participation!