



ACCESS TO DIGITAL INFRASTRUCTURE AND ITS IMPACT ON WOMEN'S ENTREPRENEURSHIP IN LAGOS STATE, NIGERIA

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Abstract: Digitalization is increasingly playing an important role in the growth of businesses and is leading to strategic, cultural and structural transformations among women entrepreneurs. This study was conducted to assess digital infrastructure and its impact on women entrepreneurs in Lagos, Nigeria. The objective of the study was to ascertain the influence of digital skill training on women's entrepreneurship; assess the effect of innovation on women's entrepreneurship also to examine the impact of digital financial service on women's entrepreneurship in Lagos State. The study adopted a survey research design in a population of 3446 women entrepreneurs of Agege, Oshodi-Isolo and Ikeja, a sample size of 200 women. Simple regression analysis was used for data analyses and test of hypotheses. The result shows that digital infrastructure have significant positive effect on women entrepreneurs in Lagos State Nigeria. Based on the findings, it was concluded that digital infrastructure has significant positive effect on women entrepreneurs in Lagos State Nigeria. It was recommended that entrepreneurs should partner with local digital training providers or NGOs that focus on skill development, incorporate innovation challenges or competitions as part of data collection to encourage participation. government should consider conducting workshops or training programs on how women can use digital financial services to improve their businesses.

Keywords: Digital Infrastructure; Digital Skill Training; Innovation; Digital Financial Service; Women Entrepreneurship

1. Introduction

Social media has become a potent instrument in recent years that is changing the way businesses operate (Mahoney and Tang, 2024, Wang, 2021). Its influence goes

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well beyond conventional marketing and communication tactics, impacting how companies interact with clients, advertise goods, and develop their identities as brands. Social media's contribution to gender equality and the empowerment of women entrepreneurs has been one of its most significant consequences (Chakraborty and Biswal, 2022; Rahman, *et al.*, 2023).

Businesses are growing more and more dependent on digitalization, which also brings about structural, cultural, and strategic changes. Utilizing digital advances creates new opportunity for firms who choose to expand globally to thrive in foreign markets by offering a distinctive value proposition (Schmitt & Baldegger, 2020).

Delivering digital commodities, products, and services requires the use of digital infrastructure components. Cybersecurity, which can stop hacking, copyright violations, and other cybercrimes, is crucial to the success of digital infrastructure in promoting connectivity (Shareer, 2019). For businesses to operate effectively and compete in increasingly interconnected global marketplaces, digital infrastructure is essential. Furthermore, new technologies like 5G, IoT, and artificial intelligence (AI) are changing how businesses operate and increasing customer demand. However, without the appropriate digital infrastructure, digital transformation is not possible (Obialor & Effiom, 2023).

Globally, entrepreneurship is a notion that advances the social and economic growth of any nation and has a favorable correlation with prosperity. But historically, women's role in Nigeria has been limited to the home, where they take care of all household duties and obligations. However, as a result of urbanization, technological advancement, industry, and education, women are eroding from the old stereotype and entering the workforce. Women understand that in order to improve society and the family, they must work. For this reason, women's entrepreneurship requires a fresh direction in the thriving field of entrepreneurship, particularly in countries where women are marginalized because of cultural and religious considerations. Nevertheless, in a society where women are largely marginalized, women who own a variety of small and medium-sized enterprises (SMEs) find it difficult to find employment. In the meantime, Anderson and Gerbing (2023) saw the growth of female entrepreneurs in the digital age as evidence of the transformative potential of technology as well as their inventiveness.

This suggests that as the digital age has advanced, traditional barriers to entry have virtually vanished, providing opportunities for women to carve out successful careers in business. They do this by utilizing cutting-edge technologies, digital platforms, and online communities to launch and expand their businesses with

previously unheard-of ease and efficiency (Babin *et al.*, 2021; Carter *et al.*, 2021). Prior research (Özbilgin and Woodward, 2016; Bertrand *et al.*, 2021) has demonstrated that the digital age has provided entrepreneurs with numerous chances to demonstrate their abilities and concepts on a worldwide scale. These opportunities include software development, social media impact, and digital internet marketplaces. They have created a level playing field where ingenuity and willpower are paramount (Goyal and Parkash, 2023). For instance, entrepreneurs can access a wide range of tools and resources to hone their abilities, grow their networks, and negotiate the challenges of managing a successful company in the rapidly evolving digital era by utilizing the power of the aforementioned platforms (Bertrand *et al.*, 2021 Cardella *et al.*, 2024). Nevertheless, despite the enormous potential, women encounter particular difficulties when utilizing digital tools to grow their enterprises, particularly in remote locations because of cultural and religious obligations (Adejumo, 2021).

According to Autio (2017), every digital innovation may be thought of as a brand-new technology whose creators that is, digital businesses rarely have enough ex-ante knowledge about what features will make it more likely that people will adopt it. The use of digital technologies to alter a business model and offer new chances for revenue generation and value creation is known as “digitalization” in the business world. The digitalization of business contributes to increased process efficiency, uniformity, and quality. By combining traditional records and files into a digital format and removing duplication and shortening the communication chain, digitalization can enhance and enable better information flow.

As the earlier research has shown, there is a gap that has to be filled with particular attention to digital infrastructure and female entrepreneurs in Nigeria. Consequently, it is uncommon for worldwide company customers to discover a specific digital innovation among a sea of rivals, as the ease of invention in a digital domain is filling cyberspace with millions of digital innovations (Eckhardt, 2016). As a result, there is typically a clear separation between innovations that these global users are aware of and actively seek out and ideas that may be desirable to businesses and users worldwide. This study aims to investigate the impact of digital infrastructure (digital skill training, innovation and digital financial services) by women entrepreneurs in Lagos State, Nigeria, the following particular goals are to be attained:

- i. ascertain the influence of digital skill training on women's entrepreneurship in Lagos State

- ii. assess the effect of innovation on women's entrepreneurship in Lagos State
- iii. examine the impact of digital financial service on women's entrepreneurship in Lagos State

Hypotheses

In line with the objectives of the study, the following hypotheses were formulated to guide the study.

- i. H01: Digital skill training has no significant influence on women's entrepreneurship in Lagos State
- ii. H02: Innovation has no significant effect on women's entrepreneurship in Lagos State
- iii. H03: Digital financial service has no significant impact on women's entrepreneurship in Lagos State

2. Literature Review

2.1. Concept of Digital Infrastructure

The entire hardware and software infrastructure required to supply digital commodities, products, and services is referred to as digital infrastructure. Digital infrastructure is essential for businesses to operate effectively in increasingly interconnected global marketplaces. According to Wrike (2023), digital infrastructure has the ability to alter corporate operations by enabling firms to improve customer service, increase efficiency, cut costs, and gain a competitive advantage. It also powers transformation and links people worldwide.

In order to guarantee that corporate activities run smoothly, digital infrastructure is essential. It gives workers the hardware and software tools they need to complete their jobs quickly and effectively. For example, having a strong digital infrastructure guarantees that staff members have dependable internet access, which is necessary for teamwork, research, and communication. Additionally, it facilitates the use of software tools and business applications that improve a number of operations, including financial reporting, project management, and customer relationship management. Furthermore, digital infrastructure enables safe data backup and storage, guaranteeing that vital company data is shielded from theft or unwanted access. This enables companies to continue operations and bounce back fast in the case of a crisis or system failure (Obialor and Effiom, 2023). Virtualization is the

process of turning physical assets like servers and storage devices into digital counterparts. This technology allows businesses to run several virtual systems with various operating systems on a single piece of hardware. To stimulate the hardware required for a whole system out of a pool of shared resources, a layer known as a hypervisor is added. One effective method of achieving strong scalability while cutting costs on technology is through virtualization. Benefits from an effective digital virtualization implementation include increased productivity and efficiency, cost savings, resource optimization, improved resiliency and reduced downtime, increased flexibility, increased greenness, improved handling of legacy systems, and increased scalability and flexibility (Chow, 2021).

2.2. Digital Skill Training

The main goal of training programs is to impart fundamental digital skills, such as familiarity with computers, operating systems, and software. Entrepreneurs acquire the skills necessary to collaborate, communicate, and work as a team with clients, stakeholders, and staff members using digital tools. The significance of data privacy and cybersecurity measures in protecting consumer and company information is covered in training. Entrepreneurs acquire knowledge and skills related to social media marketing, internet advertising, SEO, content production, and customer relationship management. Online business setup and management, payment gateways, inventory control, and customer experience improvement in the digital marketplace are all covered in training. Sariwulan *et al.* (2020) Entrepreneurs learn how to use data analytics tools to examine consumer behavior, make decisions based on facts, and enhance marketing and operational strategies. Training in digital skills opens up new business options by allowing entrepreneurs to use online platforms to reach a global audience and tap into bigger markets. Entrepreneurs are able to adapt and innovate in the ever changing digital landscape because they possess the skills necessary to stay abreast of developing technology and trends. Entrepreneurs can become more competitive in the digital age by streamlining business operations, increasing productivity, and cutting expenses with the aid of digital tools and automation. Through practical learning opportunities provided by industry partners, entrepreneurs can gain an early understanding of market trends, client preferences, and industry dynamics. In order to facilitate business development and partnerships, entrepreneurs can gain significant access to networks consisting of professionals, potential consumers, suppliers, and other entrepreneurs by working with industry partners. By forming alliances with well-known companies in the

field, entrepreneurs gain credibility for their businesses and the faith and confidence of stakeholders like investors and customers. Working together with business partners helps close the knowledge gap between the theoretical concepts taught in entrepreneurship education and their practical implementation in real-world situations. In order to make sure that entrepreneurship education programs are in line with the demands and trends of the industry today, industry partners can offer feedback on curriculum development. Collaboration between academic institutions and business sectors stimulates creativity and research, motivating entrepreneurs to create products that solve business problems and progress technology.

2.3. Innovation

In a culture that is driven by innovation and changing quickly, the internet and the technologies that enable people to access it are essential parts of peoples' lives. The way individuals live their lives has been profoundly altered by technological breakthroughs, leading to significant social and economic transformation. The country's economy is benefiting greatly from its involvement in the digital revolution. Women still face numerous obstacles while using technology and the internet, even in spite of nationwide advancements in digital literacy. The primary factors influencing how women could benefit from technological innovation to reach higher levels are their level of literacy and social class. It is undeniable that rural women use technology and the internet less than their metropolitan counterparts. (Dhanamalar, 2020)

By developing novel input combinations, technological innovation in manufacturing related to goods, services, and procedures aims to lower production costs (Jin and Choi, 2019). Innovative technology benefit businesses. The organization of production, the quality of the final product, and the level of services are all significantly altered by the new technology incorporated into the process. Furthermore, according to Nham *et al.* (2016), technical innovation is the knowledge that is utilized to create and carry out concepts and operations at every stage of the business process. Enhancing operational performance and fostering competitiveness both depend on technological innovation. Innovation is even a business unto itself in certain industries, such as biotechnology and high tech (Cusick, 2013). Therefore, in order to help businesses grow stronger in a competitive climate built on sustainable values, innovation is crucial in the business world.

Businesses differ in their financial resources and technological know-how. As a result, they will think about making various judgments about technological

advancement. In order to make sure that technological innovation is the appropriate move and increases efficiency, the board of management will evaluate the financial status, the need for innovation, and a number of other variables. Many businesses, particularly small and medium-sized ones, lack the resources to implement technology improvements. Under these circumstances, a company's performance following technological innovation may fall short of expectations.

Accordingly, business management must take into account factors that influence technological innovation before deciding on an innovation strategy (Azarmi, 2015). By doing this, the risks associated with implementing new technologies will be reduced.

2.4. Digital Financial Service

Digital Financial Services (DFS), also known as Financial Technology (FinTech), are the technological means by which financial services are accessible to even the most remote locations in the most convenient manners. Digital Financial Services (DFS) are defined as financial services that are made possible or provided by digital technology, such as credit cards, smartphones, and the internet, by the United States Agency for International Development (USAID).

Fintech is helping governments reach out to people with all forms of financial aid and cash transfers, as well as businesses with emergency liquidity, in a timely and secure manner, according to a report by the World Bank (2020) that highlights digital finance tools, successful business models, and policies to promote their growth.

Commercial banks are increasingly becoming more digitally integrated and digitally literate as a result of digital finance (Zuo *et al.*, 2023). Furthermore, the advent of digital technology has led to the emergence of a new category of online financial services providers that compete with conventional commercial banking services and products. Zuo *et al.* (2023) state that the digitalization of commercial banks was achieved through digital finance and technology investment with the aim of business transformation and efficiency improvement. The three main channels through which factor productivity improvement was triggered were production, the use of financial technology and digital toolkits, and management, which enhances internal management.

2.5. Concept of Women Entrepreneurship

Given the worldwide job crisis, entrepreneurship is also recognized as a critical engine of economic growth and development. As a result, it is critical to encourage women to consider entrepreneurship as a viable career option. Women make up half of the world's population and actively participate in its economic activities (Cardella *et al.*, 2020).

Women who start, plan, and run enterprises to show off their resilience and strength in creative and competitive fields are known as women entrepreneurs. They often start these businesses because they recognize a need or opportunity for profit. A woman who has created her own business, taken on the associated financial and managerial risks, including social responsibilities, and is operationally in control of its day-to-day operations is considered a woman entrepreneur, according to Abasilim (2020).

According to an IMF report from 2023, women-owned businesses are more likely to be found in the retail and informal sectors, are typically smaller, employ fewer people, exhibit lower growth rates, higher closure rates, and use less external financing. Other common barriers mentioned by the report include a lack of capital, strong societal constraints, and a lack of time and expertise. The time that women entrepreneurs can dedicate to growing their enterprises is sometimes restricted since they often have to juggle running their businesses with typical household tasks. The obstacles faced by female entrepreneurs are similar to those faced by entrepreneurs in general, and they typically center on the business environment, as well as access to markets and financial products (Fareed *et al.*, 2017).

Women who initiate, organize, and manage businesses while taking on the risks inherent in entrepreneurship are referred to as women entrepreneurs. These women are defying gender norms and barriers and showcasing their abilities in a variety of fields, including technology, fashion, healthcare, and finance (DeSantis and Durante, 2016; Amine and Staub, 2019). According to Capelleras and Greene (2022), women entrepreneurs are people who start and run their own businesses, managing companies in a variety of industries such as technology, healthcare, finance, fashion, cosmetics, and education, among others, and taking on financial risks in search of opportunities. In fact, a crucial quality of female entrepreneurs is their capacity to contribute a variety of viewpoints and creative solutions (Welter and Brush, 2023).

Studies have indicated that gender-diverse teams, among other varied teams, tend to be more innovative and perform better (Acs and Audretsch, 2020). For instance, female entrepreneurs frequently spot gaps in the market and fill them by creating goods and services that appeal to a wider clientele.

The Organization for Economic Co-operation and Development (OECD) report on women's entrepreneurship states that non-financial factors, such as job satisfaction, the opportunity to positively impact the community, or the desire to achieve a healthy work-life balance, are the main reasons why more women than men launch their own businesses. The latter reason is particularly significant for women since self-employment gives them greater freedom to manage their duties to their families and their careers (Ogundana *et al.*, 2021).

3. Theoretical Review

3.1. Social Construction Theory

According to the social constructivism thesis, which was put forth by academics such as Lev Vygotsky (2018) and Jean Piaget (1964), people build their knowledge and understanding of the world via their experiences and interactions with others in social settings (Vygotsky and Cole, 2018). According to this idea, within a specific cultural environment, shared beliefs, norms, and values shape reality. According to Cardella *et al.* (2024), social constructivism seeks to explain how people interpret their surroundings and how their understanding is influenced by the society in which they live. Social constructivism emphasizes people's active participation in constructing their own thinking and learning, in contrast to traditional cognitive theories that place an emphasis on intrinsic talents. However, social constructivism provides important insights into how gender norms and cultural expectations affect women entrepreneurs' experiences in business (Vygotsky and Cole, 2018). Because of ingrained gender conventions and preconceptions, women typically encounter particular difficulties and obstacles when pursuing entrepreneurship. The significance of scrutinizing these social constructs and their influence on women's conceptions of their business prospects and capacities is emphasised by social constructivism. Women's confidence in pursuing entrepreneurial endeavors, for instance, may be impacted by cultural perceptions on their duties as caregivers or their alleged lack of risk-taking behavior (Sarasvathy, 2008).

3.2. Entrepreneurship Theory

Joseph Schumpeter created the idea of entrepreneurship, which views innovation and creative destruction as the main drivers of economic growth (Schumpeter, 1949). By bringing novel goods, procedures, and business models, entrepreneurs can disrupt established markets and establish new ones, according to Schumpeter (1949). The theory of entrepreneurship offers valuable perspectives on the

entrepreneurial process, encompassing the identification of opportunities, procurement of resources, and establishment of ventures (Katoch and Bukhari, 2021). Furthermore, the theory aims to comprehend the variables that affect entrepreneurial activity, including personal traits, external circumstances, and institutional frameworks (Schumpeter, 1949). However, researchers like Sarasvathy (2008) made a significant contribution to the creation of theories that particularly address the methods and approaches used by women entrepreneurs. The need for a more nuanced understanding of women's entrepreneurship within varied socio-cultural contexts is highlighted, in her opinion, by the growing emphasis being paid to the intersections of gender with other elements including race, ethnicity, and class.

3.3. Feminist Theory

The cornerstone of this hypothesis is the notion that the factors affecting the performance of women-owned firms would be significantly different from those influencing enterprises owned by men. The basis of this argument is liberal ideology and social feminism. Liberal feminist theory is based on liberal political philosophy, which maintains that humans are essentially rational, self-interested beings and that all other animals are equal. The liberal feminist perspective holds that structural positions held by men and women, along with the varying opportunities and powers they have in society, are the root cause of gender inequality (Beasley, 1999). As a result, differences between the achievements of men and women are ascribed to the fact that women are not afforded the same options for employment and resources, which keeps them from realizing their full potential. Women now find it more challenging to acquire the traits and abilities needed to compete with men on an equal basis.

According to the liberal feminist view, gender differences in performance seem to disappear as soon as equal access to resources is ensured (Carter *et al.*, 1997). In contrast to the liberal feminist theory, the social feminist theory asserts that men and women are fundamentally different from one another from the earliest stages of life. It is drawn from psychoanalysis and the social learning theory. These differences can be seen in how men and women create and understand reality, as well as how these factors influence how their values and intentions are developed (Carter *et al.*, 1997). Men and women differ from one other in basic ways because of differences in socialization, training, and experiences prior to assuming particular job positions. Inequalities in upbringing lead to differing self-perceptions, motivations, and

ideology. According to Fischer (1993), women approach their work differently than do men, and these approaches may or may not be more successful.

3.4. Empirical Review

In their assessment of the relationship between women's entrepreneurship and economic growth in Nigeria's Benue State, Burga *et al.* (2021) concluded that women's business in Benue State is not now able to boost economic growth. According to research by Al-Qahtani *et al.* (2022), nations that do not place a high priority on women's empowerment would continue to see slower rates of economic growth. This study focused on the influence of empowerment on Pakistan's economic development. According to Deepa *et al.* (2022), women's entrepreneurship boosts economic expansion in both developed and developing nations.

In France, Vial and Richomme-Huet (2017) studied female managers of small and medium-sized businesses employing between 10 and 250 people. The purpose was to give a general picture of women's roles in these businesses' management. The 483 SME managers' data that were gathered for the Ariane study were statistically analyzed by the study. Based on a phone survey and measuring scales that have been confirmed in the literature, the analysis was conducted. The data was arranged by both authors according to two themes: first, a profile and description of the female leader; second, their objectives, management approach, and investments in the network of women leaders. The study found that although gender inequality in many areas of French society is still present, there has been significant progress in the management of small and medium-sized enterprises (SMEs). Interestingly, 35% of female executives integrate their spouses into the company, compared to 24% of men-run businesses.

Kuri (2024) investigated the connection between Japan's corporate revolutions and the advantages of robust digital infrastructure networks. Correlation analysis was employed by the researcher to analyze and interpret the data. The findings indicate a strong positive correlation between business revolution and digital infrastructure. The study comes to the conclusion that Japan's corporate revolutions greatly benefit digital infrastructure networks.

Dyer (2024) assessed the effects of employing data to successfully manage risks in Brazil. Simple regression analysis was performed to examine data for a population of 236 employees of an entrepreneurial company in Brazil. The findings show that an entrepreneurial firm's ability to navigate risk is significantly influenced by how

it uses data. It was found that the effective use of data significantly influences the risk management strategies employed by Brazilian entrepreneurial enterprises. In a similar spirit, UNEP (2020) focused on the entrepreneurial climate and its impact on social and economic progress while studying Moroccan women entrepreneurs. The study attempts to describe and investigate the experiences of Moroccan women entrepreneurs who work in extremely difficult, if not hostile, socioeconomic and cultural environments.

Wrike (2023) conducted a study on how to best utilize IT infrastructure services to help American businesses succeed. The study employed a survey research design with 180 IT organizations in the United States as the population. The data analysis method employed was multiple regression analysis. The findings indicate that the success of US businesses is significantly impacted by the optimization of IT infrastructure services. The study comes to the conclusion that improving IT infrastructure services has a big impact on American company success.

Chow (2021) investigated the advantages of IT virtualization for businesses in France. Using the mean and standard deviation, descriptive research was conducted on a population of 860 micro enterprises in France. Results showed that the benefits of IT virtualization for business in France are contingent. The study comes to the conclusion that IT virtualization has a major impact on business benefits in France.

Cox (2023) conducted research on Cambridge University's adoption of mobile telephony. In a cohort of 4,386 students chosen at random using the simple random technique, the researcher used a literature review strategy. The findings showed that the installation of mobile telecommunications at Cambridge University greatly improved message exchanges within the institution.

The World Bank Group (2020) examined how Kenyan women entrepreneurs contribute to the fight against poverty. Data was gathered by interviewing 26 women entrepreneurs and distributing a questionnaire, based on a 15% sample chosen from a target pool of 664 women entrepreneurs. With the aid of SPSS software and a qualitative and quantitative data processing approach, the study came to the conclusion that women entrepreneurs are crucial to the fight against poverty in Kenya. The study specifically shown a notable improvement in the economic and social standing of women employed in small and medium-sized businesses that sold apparel, shoes, porcelain, and sculpture. Indicators of a society that is moving away from poverty, such as having a good standard of life, being able to pay for children's education, being able to satisfy basic necessities, and having easy access to healthcare, were also highlighted by the study.

A study on the determinants of women's business in Bukavu was carried out by UN Women in 2022. Using a combination of quantitative (questionnaires) and qualitative (interviews with thirty women) methods, the study sought to determine the primary drivers of women's entrepreneurship in Bukavu. Following processing using SPSS version 16.0, factor analysis, content analysis, and multiple regression using the ANOVA test, data collected from a sample of 213 female entrepreneurs revealed a number of independent variables, including the entrepreneur's age, marital status, number of children, level of education, experience, motivation, goals, and parent's occupation. Women entrepreneurs were 39.6 years old on average, 53.09% of whom were married and had four children on average, which is the average age of children. In addition to this significant study, the OECD (2021) examined women's entrepreneurship in 34 nations, concentrating on the connection between women's entrepreneurship and GDP per capita (using GEM data). This study concludes that women's entrepreneurship is frequently entrepreneurship by necessity by demonstrating a strong correlation between the amount of GDP per capita and the variations in entrepreneurial behavior between men and women. Individual demographic and economic factors are essentially inconsequential, but individual views also matter. Therefore, if we discuss the most recent study in this field, numerous studies highlight numerous limitations based on the body of information regarding women's entrepreneurship.

Satpayeva et al. (2020), for instance, point out methodological problems but also propose that more information is needed on a few of the subjects covered. More investigation may shed light on the contribution that women can make to the creation of wealth, women's status in society and the factors that encourage them to engage in it, as well as the traits of female entrepreneurship and the challenges that they encounter while launching a company.

The economic impact of digital marketplaces on women entrepreneurs in Bangladesh is evaluated in the Ripa *et al.*, 2023 study. Its main goal was to highlight the benefits of internet platforms for female entrepreneurs while illuminating their experiences, challenges, and driving forces. The study used a questionnaire with 28 questions to assess the extent of business operations, financial gains, and hurdles among 50 female entrepreneurs who operate on digital platforms. The results demonstrate how digital marketplaces, by increasing market access, reducing operating costs, and reaching a wider clientele, provide women entrepreneurs flexible working conditions. The authors propose that in order to fully realize the potential of women entrepreneurs in the digital economy, legislative changes that

improve financial accessibility, support digital literacy programs, and eliminate cultural barriers should be put into place.

Kedir *et al.*, (2022) analysis examined the connection between FinTech and entrepreneurship to assist women in the global South in choosing more fulfilling careers. It made use of large-scale data sets to ascertain whether and when financial technology use can result in self-employment and how it can raise the standard of living for underprivileged social groups. The majority of studies on financial inclusion in Africa have concentrated on the usage of and access to formal bank-based lending. Other research, however, argues that much more intricate mechanisms are at work, with FinTech engaging with a convoluted web of official and informal financial institutions in addition to transactional patterns. Financial inclusion was assessed by means of a survey and data collection based on in-person interviews, including access to and utilization of formal, informal, mobile money, and digital financial services, along with comprehensive information on each financial product. The statistical method used for data analysis was the probit model, and the results showed that women who use mobile money accounts are more likely to launch their own businesses. This shows how FinTech can support financial inclusion and highlights how innovations like mobile money help people from all socioeconomic groups raise their standard of living.

According to Khan *et al.* (2021), women can be great entrepreneurs because they are motivated, have favorable traits, and have the ability to significantly increase economic growth. A total of 181 registered SMEs in Pakistan were targeted through the use of standardized questionnaires.

AMOS and SPSS were employed to analyze a constructed conceptual model. The findings show that a variety of internal and external factors, such as self-assurance, a willingness to take calculated risks, and a desire for success, have a positive and significant impact on the success of women-owned businesses. These external factors include sociocultural and economic factors.

4. Methodology

Study Area

Lagos State in Nigeria serves as the study's geographic focus. Nigeria's southwest region contains the state in question. Although it has the smallest total area, it is the second most populated state. Twenty local government areas and five districts make up Lagos State.

Sources of Data

Primary data were used in the research. A well-structured questionnaire was used as the data collection tool in this investigation. Respondents who are literate are given access to both closed-ended and open-ended versions of the questionnaire.

Population of The Study

The population of the study was 3,446 women entrepreneurs in Agege, Ikeja and Oshodi-Isolo local government area of Lagos state. A total of two hundred and fifty women were used as target population. The justification for this number of sample size is because not all women will be able to reach.

Sampling Size and Sampling Techniques

For the purpose of this study, a sample size of two hundred (200) women entrepreneurs were selected using simple random sampling technique. The simple random sampling techniques allows each sub-set an equal chance of being selected for the study.

Method of Data Collection

In carrying out this research work, the researcher employed primary. The primary data obtained by using the structured questionnaires which will be distributed to the respondents.

Method of Data Analysis

In order to analyze the data that would need to be gathered, the study looked at both descriptive and inferential statistics. Means, frequencies, and percentages are used in descriptive statistics, whereas inferential statistics are used to draw conclusions about a large sample of the population. As a result, this variable is qualitative and can be categorical or discrete. It involves an evaluation based on the information gathered from the distribution of surveys. Digital infrastructure's impact on women entrepreneurs in Lagos, Nigeria, was examined using Ordinary Least Square Regression analysis. There was a 100% return rate among the 200 questionnaires that were given to the respondents; all of them were carefully completed and returned in a usable condition.

Test of Hypothesis

H01: Digital skill training has no significant influence on women's entrepreneurship in Lagos State

Table 1. Simple Regression result on digital skill training on women's entrepreneurship in Lagos State

Variables	R	R-square	Effect size (%)
Digital skill training Women entrepreneurship	0.821	0.748	74.8

Source: Authors own work

The result in Table 1 shows a strong positive influence of digital skill training on women's entrepreneurship in Lagos State. This implies that improvement in digital skill training would lead to increase in women entrepreneurship. It also revealed that digital skill training contributed 74.8% to the variance observed in women entrepreneurship.

Table 2. Significant determinant of digital skill training on women's entrepreneurship in Lagos State

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression 1	502.527	1	375.632	2269.638	.000
Residual	37.404	198	.166		
Total	1539.931	200			

Source: Authors own work

From the regression analysis shown in Table 2, the statement of hypothesis one is rejected; implying that digital skill training significantly influence women entrepreneurship in Lagos state. This is because the p-value (Sig. = 0.000) is less than 0.05 alpha level of significance.

H02: Innovation has no significant effect on women's entrepreneurship in Lagos State.

Table 3. Simple Regression result on innovation on women's entrepreneurship in Lagos State

Variables	R	R-square	Effect size (%)
Innovation Women entrepreneurship	0.796	0.634	63.4

Source: Authors own work

The result in Table 3 shows a strong positive effect of innovation on women's entrepreneurship in Lagos State. This implies that improvement in innovation would lead to increase in women entrepreneurship. It also revealed that innovation contributed 63.4% to the variance observed in women entrepreneurship.

Table 4. Significant determinant of innovation on women's entrepreneurship in Lagos State

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression 1	1515.587	4	216.512	1983.314	.000
Residual	24.344	208	.109		
Total	1539.931	200			

Source: Authors own work

From the regression analysis shown in Table 4, the statement of hypothesis three is rejected; implying that innovation significantly impacts women entrepreneurship in Lagos state. This is because the p-value (Sig. = 0.000) is less than 0.05 alpha level of significance.

H03: Digital financial service has no significant impact on women's entrepreneurship in Lagos State.

Table 5. Simple Regression result on digital financial service on women's entrepreneurship in Lagos State

Variables	R	R-square	Effect size (%)
Digital financial service Women entrepreneurship	0.136	0.016	1.60

Source: Authors own work

The result in Table 5 shows a strong positive impact of digital financial service on women's entrepreneurship in Lagos State. This implies that improvement in digital financial service would lead to increase in women entrepreneurship. It also revealed that digital financial service contributed 1.6% to the variance observed in women entrepreneurship.

Table 5. Significant determinant of digital financial service on women's entrepreneurship in Lagos State

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression 1	1507.706	2	301.541	2105.451	.000
Residual	27.204	196	.143		
Total	1539.931	200			

Source: Authors own work

From the regression analysis shown in Table 6, the statement of hypothesis three is rejected; implying that digital financial service significantly impacts women entrepreneurship in Lagos state. This is because the p-value (Sig. = 0.000) is less than 0.05 alpha level of significance.

5. Results and Discussion of Findings

The result in this study shows a strong positive influence of digital skill training on women's entrepreneurship in Lagos State, with an adjusted R² result of 0.748 representing 74.8%. From the regression analysis shown in this study, the statement of hypothesis one is rejected; implying that digital skill training on women's entrepreneurship in Lagos State. This is because the p-value (Sig. =0.000) is less than 0.05 alpha level of significance.

Result from hypothesis two also shows a strong positive impact of innovation on women's entrepreneurship in Lagos State with an adjusted R² result of 0.634 representing 63.4%. From the regression analysis shown in this study, the statement of hypothesis two recorded an F-statistics result of 1983.314 and a p-value (Sig. = 0.000) less than 0.05 alpha level of significance is rejected. Implying that innovation on women's entrepreneurship in Lagos State.

Lastly, hypothesis three result also indicated a strong positive impact of digital financial service on women's entrepreneurship in Lagos State. From the regression analysis shown in this study, the statement of hypothesis three that recorded an F-statistics result of 2105.451 and a p-value (Sig. = 0.000) less than 0.05 alpha level of

significance is rejected. Implying that digital financial service on women's entrepreneurship in Lagos State.

6. Conclusion and Recommendation

The study shows the revolutionary potential of digital infrastructure for empowering women in business in addition to verifying its influence on women entrepreneurs. When the variables are positively correlated, the result demonstrates the catalytic effect of digital financial services, innovation, and digital skill training for female entrepreneurs. It also gives them access to real-time data, enables them to make data-driven decisions, and streamlines their financial management procedures.

Based on the findings of this research, the following recommendations were made:

- i. Entrepreneurs should partner with local digital training providers or NGOs that focus on skill development.
- ii. Incorporate innovation challenges or competitions as part of data collection to encourage participation.
- iii. Government should consider conducting workshops or training programs on how women can use digital financial services to improve their businesses

7. Limitations and Suggestions for Further Studies

The study was limited to digital infrastructure on and its impact on women entrepreneurs in Lagos, Nigeria which focused on Agege, Ikeja and Oshodi-Isolo local government area of Lagos state and covered variables such as digital financial services, innovation and digital skill training. The study having studied digital infrastructure on women entrepreneurs in Lagos, further research should be carried out in other zones of the country by examining other digital infrastructure variables other than the ones' being studied.

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