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## Access to Digital Financial Services and the Performance of Women Entrepreneurs in Abuja Municipal Area Council

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### ABSTRACT

Recent economic trend has recorded increasing adoption of digital technology in the world of finance, yet the challenge of financial literacy and poor access to digital financial services by women entrepreneurs in Nigeria continues to plague the entrepreneurial endeavors of women, triggering a great concern to policy makers. Access to digital finance represents not just a formidable opportunity but a crucial imperative in empowering women entrepreneurs, therefore this research investigated the transformative potential of digital financial services in improving the performance and empowerment of women entrepreneurs in Abuja municipal area council (AMAC). The paper employed a descriptive research design based on primary data, using survey questionnaires, targeted at three hundred and eighty-four (384) respondents, and administered to both registered and unregistered women entrepreneurs. Responses to questionnaires were collated and analyzed using the ordinal logistic regression method to reveal a significant and beneficial correlation between the variables. The paper confirmed that access to digital financial services (DFS) has a positive impact on the performance and empowerment of female entrepreneurs as it provided crucial financial tools, improved decision making and encouraged financial independence. Based on the findings, the paper therefore recommended the implementation of specialized financial solutions offering credit and savings products, robust digital infrastructure development by the government, and advocacy for gender-responsive policies to further drive practical changes for women entrepreneurs. The paper concluded by advocating a joint action to promote women's empowerment and economic growth by leveraging the transformative power of digital financial services.

### INTRODUCTION

The worldwide forecast for the future of financial services is generally pumped up, with AI and international affairs dominating the conversation. The macro regime change, the energy transition, the restructuring of international commerce, and the rewiring of credit extension are among the major transformations that are hotly contested. The Nigerian Bureau of Statistics (NBS), reported that over One Hundred and Thirty Million Nigerians were living below poverty as at November, 2022. Mostly women and children were affected during the period of high level of unemployment and inflation, hence the need to promote entrepreneurship among women. Recent studies have shown that to promote inclusive economic growth, the women gender ought to be engaged in necessary skills to help them contribute meaningfully to the growth and development of Small and Medium Scale Enterprises (SMEs). The participation of women entrepreneurs by leveraging the digital economy becomes very imperative to harness the formidable opportunity of a rapidly evolving economic landscape. African Development Bank (AfDB) in a bid to promote food security in Africa, emphasized the need to engage women more on the need for financial inclusion framework and the need for agricultural business being driven by women entrepreneurs in the Continent (AfDB Report, 2020).

In Nigeria, some policy measures have been incorporated to tackle the challenges of poverty among women in Nigeria. Amongst them are The National Gender Policy aimed at promoting gender equality, women's empowerment, and the elimination of discrimination; the National Cash Transfer Programme (NCTP) which is aimed at providing cash transfers to low-income households to alleviate poverty among vulnerable groups, including women; the Women's Fund for Economic Empowerment (WOFEE) and the Women's Entrepreneurship Day (WED) aimed at promoting women's economic empowerment by providing training, mentorship, access to markets, and financial support for women entrepreneurs, thereby enhancing women's capacity to generate income, create jobs, and contribute to poverty reduction; Legal reform measures such as the Violence Against Persons (Prohibition) Act, the Discrimination Against Persons with Disabilities (Prohibition) Act, and the Child Rights Act enacted to enhance and safeguard women's rights, improving their access to justice, and protect them from gender-based violence and discrimination.

Despite all of these and many more, in the Abuja Municipal Area Council (AMAC) and beyond, the underrepresentation and challenges faced by women in entrepreneurship form a compelling backdrop to

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the prevailing economic landscape. The disparities in access to resources, financial tools, and support systems create formidable barriers that impede the full potential of women-led businesses to flourish and thrive. By embracing the transformative power of Digital Financial Services, a gateway opens towards dismantling these barriers and fostering an environment where women entrepreneurs can not only survive but truly excel. Digital Financial Services, with their ability to democratize access to financial resources, optimize operational efficiency, and spur innovation, stand as a beacon of hope in levelling the playing field for women entrepreneurs. There has been a global explosion of digital banking since the covid-19 pandemic with experts projecting 3.6 billion users globally by 2024.

Unfortunately, in developing nations, more than fifty percent of formal women-owned Small and Medium-Sized Enterprises (SMEs) are either excluded through digital financial services, turned down by financial institutions or cannot obtain financing on conditions that are suitable for their requirements, as reported in the Women Entrepreneurs Finance Initiative (We-Fi). According to a McKinsey (2020) report, DFS in Africa have been gaining traction with Nigeria for example, having a flourishing fintech sector with over 200 fintech stand-alone businesses and its fintech industry storing more than \$600 million in capital between 2014 and 2019. The report also claims that the conditions for a flourishing fintech sector are favourable due to a young majority of its population, rising smartphone adoption, and a concentrated regulatory push to promote financial inclusion and cashless payments. However, the adoption of DFS, most notably mobile money, is still lower than in peer nations. It would therefore be necessary to enhance digital financial literacy, modernize digital infrastructure, and support the incubation and ethical business practices of fintech companies (IMF, 2023).

The Financial Inclusion policies in Nigeria has recently focused on agent banking and network creation. The CBN established SANEF (Shared Agent Network Expansion Facilities) in 2019 in collaboration with Mobile Money Operators (MMOs), commercial banks, and the national payments system Nigeria Inter-Bank Settlement System Plc (NIBSS) with definite goals of increasing financial literacy, encouraging the use of bank verification numbers (BVNs), and providing a platform for account opening at any agent location. The banks have sponsored agents, so also has Development partners who even went to the extent of training entrepreneurs. Other policies have captured the “national peer group program for financial inclusion of youths” while improving the financial capabilities of citizens and public employees. Digital financial services can include a range of financial products and services, such as mobile banking, online payments, and digital wallets and these Digital technologies are critical enablers of small business performance (Orser *et al.* 2019).

These services are available via a number of channels,

including mobile phones, personal computers, and other digital devices. There are various advantages to using digital banking services for female entrepreneurs amongst which can include reducing the costs associated with traditional banking services, such as travel expenses and waiting time. They can also help to enhance financial inclusion and improve the financial health of women entrepreneurs, their families, as well as the local economy. Financial technology (FinTech) in the form of mobile money accounts and transactions is expected to be a major development catalyst by addressing central issues in financial access (Kedir & Kouame, 2022). In many nations, the evolution of finance has resulted in improved and more affordable access to services, as well as the introduction of new products such as safer formal deposits and new types of loans, aiding individuals, households, and businesses in improving their resilience, pursuing economic possibilities, and sustaining their livelihoods (USAID).

Despite the potential benefits of digital financial services, there are also a number of challenges that must be addressed. For example, many women entrepreneurs may lack the necessary digital skills to access and use these services effectively. There may also be cultural barriers that prevent women entrepreneurs from accessing these services, such as social norms that discourage women from using digital devices. Khan *et al.* (2021) characterizes emerging nations as having distinct cultures, religions, and cultural activities, not to mention the enormous uncertainties in the economic and government sectors that impede women investors’ investment decisions. This progress has brought forth new risks and intensified those that already existed, including severe debt collection tactics, cyberattacks, online fraud, money laundering, gender differences in financial inclusion, over-indebtedness, careless data practices, and cyberattacks (USAID).

Producers, suppliers, vendors, and customers-along with almost all other agents participating in an economic cycle-can now interact in a shared virtual area linked by the Internet, which allows them to exchange information, opportunities, products, services, and money (Mivehchi, 2019). Information and communication technology expansion has fueled and assisted society’s shift to entrepreneurship. Due to this, profitable businesses may now be launched digitally for little to no capital at first, creating new economic value for the community and the entrepreneur (Mivehchi, 2019).

ICTs have a positive impact on business success, but women entrepreneurs are typically less aware of this, thereby making ICT adoption consequently not at the top of the list of priorities for female entrepreneurs. The Global Partnership for Financial Inclusion (2020) in its paper, has recognized some DFS enablers to increase women’s entrepreneurship participation which has ranged from operating mobile money accounts that were directly linked to the female entrepreneurs, leading to increased household decision making power with

increased consumption and savings; to digitization of government remittances and social benefit payments resulting in meeting women's safety needs, increased cost and time savings, and a greater labor force participation.

The objectives achieved by the paper are:

i Analyse the effect of Point-of-Sale machines on the performance of women entrepreneurs in Abuja Municipal Area Council

ii Investigate the impact of mobile money on the performance of women entrepreneurs in Abuja Municipal Area Council

iii Examine the influence of Automatic Teller Machines (ATM) on the performance of women entrepreneurs in Abuja Municipal Area Council

This paper therefore investigated the effect that access to Digital Financial Services has on the Performance of Women Entrepreneurs in Abuja Municipal Area Council by determining the significance of DFS to performance of women entrepreneurs.

## LITERATURE REVIEW

### Conceptual Review

#### Women Entrepreneur

Women entrepreneurs are women who commence, organize, and manage businesses in order to demonstrate their endurance and fortitude in innovative and competitive occupations, creating businesses because they see a profit opportunity or need. According to Abasilim (2020), a woman entrepreneur is a woman who has founded her own company, assumed the financial and managerial risks involved, including social obligations, and is operationally in charge of its day-to-day operations.

IMF (2023) reported that women-owned firms which are more concentrated in the retail and informal sectors, are often smaller, employ fewer people, and showing lower growth rates, greater closing rates, and make less use of external finance, with insufficient capital base, strong societal limitations, and limited time and skills frequently cited as barriers. Women entrepreneurs frequently have to balance traditional home chores with running their businesses, which limits the amount of time they can devote to the expansion of their activity. The challenges that women entrepreneurs confront are comparable to those that entrepreneurs encounter in general, and they are generally focused on access to financial products and markets, as well as the business climate (Fareed *et al.*, 2017).

#### Women's Entrepreneurship

Women's entrepreneurship has received increasing attention in recent years as a critical contributor to economic growth, innovation, and social progress. Women entrepreneurs, who have historically been excluded in traditional economic realms, are progressively breaking down barriers and making great progress in a variety of industries around the world. According to research, women-led firms are distinguished by a focus on social impact, sustainability, and community engagement.

Furthermore, studies show that women entrepreneurs are resilient and adaptable in overcoming adversities, which contributes to the resilience of economies during times of crisis.

Access to money is an important part of women's entrepreneurship, as it enables women to establish and grow their firms. However, women entrepreneurs frequently face major challenges to acquiring financial resources, such as gender bias, a lack of collateral, and insufficient financial awareness. Addressing these barriers necessitates focused interventions and regulatory actions aimed at promoting gender-responsive financial products, improving financial education, and creating a supportive environment for female entrepreneurs. In addition to financial access, digital technology plays an increasingly important role in women's entrepreneurship. Women entrepreneurs can use digital platforms and technologies to gain market access, network, and better run their firms. However, women entrepreneurs continue to face discrepancies in internet access, digital skills, and online visibility.

#### Digital Financial Services (DFS)

Digital Financial Services (DFS) sometimes called Financial Technology (FinTech) can be defined as those technological pathways through which financial services are made available to the remotest of areas and in the most convenient of ways. According to the United States Agency for International Development (USAID), Digital Financial Services (DFS) are financial services that are enabled or delivered by digital technology (e.g., mobile phones, cards, and the internet). According to EFINA, Digital Financial Services (DFS) is a strategic opportunity to increase access and reach of basic financial services to Nigeria's unbanked population by leveraging innovative financial technology and platforms.

The current experience of societal alienation, declining demand, decreased input supply, stricter lending conditions, and more uncertainty, made worse by the COVID-19 pandemic, has heightened crucial need for the increased use of fintech to keep financial institutions operating and people safe (Adusei, 2020). World Bank (2020) in its report which highlights digital finance tools, effective business models, and policies to promote their growth, has stated that Fintech is assisting governments in reaching 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.

Digital finance encourages commercial banks to integrate with digital technology and increases the degree of digitization of commercial banks (Zuo *et al.*, 2023). In addition, the use of digital technology has given rise to a new class of online financial services provider that rivals traditional commercial banking services and offerings. Production, the use of financial technology and digital toolkits, and management, which enhances internal management, are the three main channels through which factor productivity improvement was triggered

by the digitalization of commercial banks, which was accomplished through digital finance and technology investment with the goal of business transformation and efficiency improvement. (Zuo *et al.*, 2023).

According to Kambale (2018), DFS includes a broad range of digitally accessed and provided financial services, including credit, savings, insurance, remittances, payments, and credit. Digital financial services (DFS) include cutting-edge technology such as mobile banking, Internet banking, and mobile payments (Rana *et al.*, 2020). Kambale (2018) listed DFS indicators to include Mobile Banking, Internet Banking, Mobile Money Operators (MNOs), Automated Teller Machines (ATMs) and Point-of-Sale (POS). EfnA lists its strategic areas through which DFS is achieved as electronic payments and Agent networks.

### Mobile Banking

According to Kambale (2018) Mobile Banking, a technology that has revolutionized the financial industry by providing consumers with a platform for convenient, round-the-clock banking services is a subset of Digital Financial Services (DFS), that uses mobile devices, primarily smartphones, to perform banking activities and financial transactions. The fintech sector offers a wide range of financial services, but due to a preference for cash transactions, concerns about cost and trust, and other factors, the acceptance of digital financial services—most notably mobile money—is still lower than in peer nations (IMF, 2023). It is a comprehensive service portfolio for consumer segments that access and use retail and business banking and payment services via mobile devices (Shaikh *et al.*, 2022).

Mobile banking services often provided through a downloadable mobile application, ranges from account balance checking, to paying of bills, to funds transfer, application for loans and a variety of financial activities (Kambale, 2018). According to Shaikh *et al.* (2022), The mobile applications that may be downloaded for mobile payment aim mainly at banked and unbanked customers, to offer more and better protection, along with a variety of features and payment alternatives. Shakh *et al.* (2022) has categorized other channels as mobile payment, mobile wallets and mobile money to be linked with mobile banking, considering that they are accessed through hand-held devices to conduct micro and macro payments electronically.

The advancement of monetary accessibility is one of mobile banking's most significant benefits. Most people on the planet have not had access to traditional financial institutions, especially those who live in rural or distant places. However, the availability of mobile banking has allowed those who are excluded to obtain financial services, which has boosted economic expansion and decreased income disparity (World Bank, 2020). The COVID-19 pandemic underscores the significance of mobile banking as it has made it possible for customers to

conduct financial transactions without having to interact in person, thanks to physical distancing measures in place. Moreover, governments have made use of this technology to give money to people and companies impacted by the pandemic (World Bank, 2020).

Even with these developments, mobile banking has a lot more room to expand. Prospective avenues for study encompass investigating strategies to further reduce expenses, enhance transaction velocity and security, and offer more customized financial services (Shaikh *et al.*, 2022). In order to facilitate the growth of mobile banking services, further infrastructure investments are required, such as digital identity systems and mobile broadband (World Bank, 2020). The financial landscape has changed as a result of DFS's mobile banking feature, which makes banking services more convenient and accessible. This technology has the potential to significantly advance financial inclusion and economic prosperity as it develops.

### Point-of-Sale (POS)

A POS is a hand-held machine where a consumer pays for goods or services receipts with receipts that can be electronic or paper in nature. This cloud-based POS systems are been used by retailers in a large scale in recent times. This hardware is a credit and debit card readers that allow contactless, chip, and swipe payments that can be plugged into devices or connected wirelessly. They are terminals that scan barcodes, print receipts, and accept payments; displays for customers by giving order and payment details and can function as self-ordering kiosks. Cash drawers, scales, kitchen printers, label printers, receipt printers, and barcode scanners are examples of POS equipment.

### Automated Teller Machines (ATM)

ATMs have become an essential element of our culture, efficiently reaching out to a vast consumer base at a minimal cost (Geetha & Bharathl, 2019). They were introduced to the world in 1983 and were favorably appreciated by consumers because they allowed people to conduct transactions without having to engage with a bank personnel. According to Valenzuela, Moquillaza, and Paz (2022), ATMs did not evolve in isolation but rather, as a result of general technology progress, they were included by financial institutions as one of their primary strategy channels to decentralize services.

ATMs provide a self-service delivery mechanism that enables banks to give more convenient information and services to their customers (Geetha & Bharathl, 2019). The primary purpose of ATMs was to enable businesses to increase service quality while lowering transaction costs even though the growing distance between banks and clients as a result of the use of ATMs may raise security issues and a lack of trust (Valenzuela *et al.*, 2022). Despite these obstacles, ATMs have continued to emerge as an essential channel for both financial institutions and their clients due to the numerous benefits they provide.

## Theoretical Review

### Theory of Financial Inclusion

Financial inclusion is the process of providing financial services as well as access to these resources, with a focus on the impoverished and other marginalised groups. It also involves offering banking services to a significant portion of the underprivileged and low-income population at a reasonable cost. (Ozili, 2020). The Theory of financial inclusion provides a system of ideas that explain financial inclusion objectives, processes, and outcomes, as well as a set of principles on which financial inclusion practice is based, and would allow for the detection of abnormal patterns in financial inclusion practice, eliciting additional research to improve our understanding of why deviations exist in practice (Ozili, 2020).

The notion of financial inclusion, which encompasses the availability and utilization of financial services by both individuals and enterprises, has garnered significant interest in academic research because of its capacity to promote equitable economic development. Fundamentally, financial inclusion tackles the differences in bank, credit, and other financial resource accessibility, especially for underprivileged and excluded groups. According to scholars, financial inclusion is not only economically necessary but also a key factor in reducing poverty and promoting social development (Demirgüç-Kunt *et al.*, 2018). The complexity of financial inclusion is frequently emphasized by theoretical frameworks, which take into account a variety of elements including human behaviors, institutional contexts, and policy frameworks. The function of regulatory frameworks and financial institutions is central to the theoretical discourse on financial inclusion, with various approaches having emerged. The institutional approach enhances financial access and promotes economic inclusion which are largely dependent on strong financial institutions and supportive regulatory frameworks. The behavioral approach theory centers on identifying and resolving the social and psychological determinants of people's financial behaviors and access to financial services. The technology-driven theoretical approach, highlights the transformative influence of fintech on financial inclusion by emphasizing the importance of digital innovations in lowering transaction costs, increasing efficiency, and expanding the reach of financial services (Duflos *et al.*, 2019).

According to Ozili (2020), the Theory is described based on three qualities, the beneficiary, the mode of delivery and the funding. This notion has its share of detractors. Knowing that having a bank account does not ensure significant financial participation and effect, Financial Inclusion programs frequently concentrate on expanding access to financial services without sufficiently addressing the issue of actual usage. Sometimes, the emphasis on extending the availability of financial services obscures how crucial it is to guarantee the appropriateness and quality of those services. In varied sociocultural contexts where there are already informal finance systems that are

disregarded and challenged, a one-size-fits-all strategy would not work. There are still gender biases in financial inclusion initiatives, and women have particular difficulties getting access to and using financial services.

### Theory of Entrepreneurship

The theory of entrepreneurship, more precisely the theory of entrepreneurial value creation, explains the whole range of the entrepreneurial experience. This covers the pursuit of entrepreneurial goals and opportunities, developing one's capacity for entrepreneurship, and seizing the benefits of entrepreneurship (Mishra & Zachary, 2015). As part of the entrepreneurial process, an entrepreneur must identify an external opportunity, weigh the opportunity to exercise entrepreneurial competence against the resources at hand, secure additional resources if needed, create long-term value, and appropriate the entrepreneurial reward in order (Mishra & Zachary, 2015). According to the Innovation Theory of Schumpeter, entrepreneurship is the spark that starts and maintains the process of development by upsetting the economy's immobile circular flow.

Mishra and Zachary (2015) put forth two phases to the entrepreneurial process: venture formulation and venture commercialization. The entrepreneur applies their entrepreneurial competence at the venture formulation stage when they perceive an outside opportunity. Achieving growth for the entrepreneur may require seeking outside resources during the venture monetization stage, such as venture capital or strategic alliances. An essential component of the entrepreneurial process, the entrepreneur uses the resources at their disposal to cultivate an entrepreneurial competence, by coordinating the available entrepreneurial resources with the recognized opportunity.

Different scholars have put out a number of theories that centre on different aspects of entrepreneurship, such as innovation, achievement, organisation building, group activities, managerial abilities and leadership, and gap-filling activities, all vying to explain the motivations, methods and results of entrepreneurial activities. Schumpeter's theory of innovation, creative destruction and invention play a major part in the role of entrepreneurs in promoting economic progress. Psychological theories centre on the special qualities and attributes of entrepreneurs, like their inclination for taking risks, drive for success, and sense of control. Sociological theories emphasise how social networks, social structures, cultural elements, social capital, and community support all affect entrepreneurial behaviour. Institutional theories study how normative, regulatory, and cognitive institutions affect entrepreneurship and whether they help or hinder development. Finally, the Resource-Based View (RBV) theory, emphasises the significance of obtaining and utilising special resources and competencies in order to forge competitive advantages and succeed as an entrepreneur.

Despite its growing prominence in the understanding of innovation and economic development, the theory of entrepreneurship is not without constraints and drawbacks. First of all, an excessive focus is placed on the personal qualities and attributes of entrepreneurs, ignoring the diversity of entrepreneurial environments and the degree to which variables like gender, race, and socioeconomic status are considered. Second, the failings, uncertainties, and losses that come with starting a business are not sufficiently articulated. Thirdly, the dynamic, progressive, and learning-oriented character of contemporary entrepreneurial activities may not be adequately captured in classic theoretical frameworks, thus not reflecting the ongoing adaptation and change that characterize real-world entrepreneurship. Lastly, traditional models don't always fully address how institutions such as legal frameworks and cultural norms, shape entrepreneurial activity because many entrepreneurial studies are cross-sectional and miss the elements that lead to long-term success or failure.

### Empirical Review

Having observed that SMEs continue to be financially excluded despite their important role in Using an explanatory research approach and the theories of financial intermediation and diffusion of innovation, Kenya *et al.* (2023) assessed the relationship between digital transformation and financial inclusion. Purposive sampling and basic random sample were the methods used in the study to choose 200 respondents from Kenya's top 100 small and medium-sized businesses. Out of all the small and medium-sized businesses that satisfied the requirements to be included in the sample, two respondents were chosen. A response rate of 81.5 percent was achieved through the use of questionnaires. The study stated that digital transformation is essential and recommended small- and medium-sized firm management to fully commit to it in order to maximise the underlying benefits of flexible financial services. It also discovered a strong link between its variables.

Pyoko *et al.*, (2023) explored the association between digital transformation and financial inclusion among Kenyan SMEs. In order to gain a complete understanding of the problem, the study uses a mixed-methods approach, utilising both qualitative and quantitative techniques. Data collecting methods included surveys distributed to a sample of SMEs and in-depth interviews with key stakeholders in the banking and business sectors. Descriptive and inferential statistics were used to evaluate the quantitative data, while thematic analysis of the interviewees' qualitative data allowed for the nuanced discovery of insights. The findings show a significant positive relationship between digital technology usage and greater financial inclusion among SMEs, emphasising how digital tools enhances access to financial services, increase operational efficiencies, and encourage business growth.

The study by Ripa *et al.*, (2023) assesses the economic impact of digital marketplaces on women entrepreneurs

in Bangladesh. Its focus was to shed light on the experiences, obstacles, and motivations of women entrepreneurs while revealing the advantages of digital platforms for them. The study utilised a questionnaire consisting of 28 questions, with a target audience of 50 female entrepreneurs who operate on digital platforms, in order to evaluate the scope of business operations, financial gains, and obstacles. The findings show that digital marketplaces provide women entrepreneurs with flexible working conditions by greatly improving market access, lowering operating expenses, and expanding client reach. To fully realise the potential of women entrepreneurs in the digital economy, the authors suggest implementing governmental changes that will enhance financial accessibility, boost digital literacy initiatives, and remove cultural barriers.

The influence of digital technology revolution on Indonesian small and medium-sized enterprises (SMEs) is examined in Kawung *et al.*, (2022). It examines how Indonesian SMEs adjust to the digital age and the changes on their business' operations. The study uses a sample size of 150 SMEs in Manado City, North Sulawesi Province, Indonesia, with quantitative and qualitative techniques. Surveys conducted online and questions similar to interviews were used to gather data. SMEs' technological preparedness for digital transformation was evaluated using multiple regression analysis. The research findings highlight the significance of improved and effective governance for digital transformation as it relates to SMEs in Indonesia by the government, in line with the needs of the changing business landscape, and show how prepared Indonesian SMEs are to implement digital technology transformation.

Kedir *et al.*, (2022) analysed the relationship between FinTech and entrepreneurship to help women in the global South make better career decisions. It employed the use of extensive data sets to determine whether and when using financial technology can lead to self-employment and how it can help marginalized social groups' standard of living. The majority of research that has been done on financial inclusion in Africa has focused on how to use and obtain formal bank-based financing. However, other studies contend that the dynamics at play are far more complicated, with FinTech interacting with a complex network of formal and informal financial institutions as well as transactional patterns. A survey was undertaken and data collected based on face-to-face interviews with financial inclusion measured via their access to and use of formal, informal and mobile money/digital financial services with thorough details on every financial product. The probit model was the statistical technique employed for data analysis and according to the findings, women are more likely to start their own businesses when they use mobile money accounts, demonstrating how FinTech can promote financial inclusion and observing that FinTech developments, like mobile money, help people from all social categories improve their standard of living.

In their study, Malaquias and Malaquias (2022) looked at the effect of DFS adoption on the degree of satisfaction with business performance, using a sample of responses from mothers who run their own businesses, or mompreneurs. From the database, 177 surveys were looked through. Confirming factor analysis and the structural equation model are used. The main conclusions suggest that attitudes towards information and communication technology have a positive effect on the adoption of DFS. Additionally, the use of DFS improved the satisfaction with business performance, suggesting that using technology to manage their business bank account, make electronic payments, and provide an alternative payment method to their clients can increase the satisfaction of female entrepreneurs with their business performance.

Khan *et al.* (2021) recognised that women are driven, possess positive attributes, and have the potential to generate significant economic growth, thus making them successful entrepreneurs. Using standardised questionnaires, 181 SMEs in Pakistan that were registered were targeted. AMOS and SPSS were used for the analysis of a conceptual model that was developed. The results demonstrate that both external and internal factors, including sociocultural and economic factors as well as internal traits like the desire for success, willingness to take calculated risks, and self-assurance, have a positive and significant impact on the success of women-owned businesses.

Rakshit *et al.* (2021) in their Mobile Apps for SME Business Sustainability During COVID-19 and Onwards study, filled a vacuum in literature by integrating mobile app-based operations to Theories of Consumption Values and Planned Behaviour of SMEs. 343 SMEs received data from three Indian Industrial Development Corporations (IDCs). Using the covariance-based structural equation modelling method, they investigated the efficacy of a conceptual model of a mobile-app-based company for SMEs. The results demonstrated how customer choice behaviour, perceived behaviour control, subjective behaviour control, and attitude towards the mobile app affect SMEs' decision-making and business strategy. SMEs hence need a robust mobile app-based business network in order to prosper in the entrepreneurial business process. Furthermore, the study found that increased use of mobile apps significantly improves the long-term productivity of SMEs through the use of instrumental variable analysis. The analysis also revealed a number of theoretical and managerial ramifications.

In 2019, Mivehchi investigated the role of IT in women entrepreneurship with a touch light on 40 Oriflame Sales representatives in Iran having identified that the most significant aspect of the modern world is the speed at which information technology is developing because it creates the conditions for each nation's social and economic advancement and allows women to have access to one of the most powerful tools available for economic and social contributions. A descriptive research method was used, random sampling and questionnaire

administration. The study utilized both primary and secondary data to provide a detailed picture of the impact of IT on Iranian women entrepreneurs. The results show that IT has a significant proportion of over 90 percent impact on the growth of sales and access to job opportunities of the Iranian women.

Durai and Stella (2019), conducted a study to investigate how digital finance affects financial inclusion. According to the study, there has been an inclusive growth that is concentrated on financial inclusion. This growth is made possible by the development of new banking technology, or digital finance, which is provided through digital payment cards, smartphones, laptops, and the internet. Multiple choice and Likert scale items were included in the questionnaire, and the data was analysed using the One-way ANOVA and Reliability test statistical techniques. Additionally, a post hoc test was run between the groups. According to the study's findings, digital finance has a big influence on financial inclusion.

## MATERIALS AND METHODS

### Research Design and Method

This paper employs a descriptive research design and depended on primary data gotten from well-questionnaires administered to the target population of women entrepreneurs. It combines the questionnaire survey with advanced statistical analysis to unravel the intricate relationship between access to digital financial services and the performance of women entrepreneurs in Abuja Municipal Area Council (AMAC).

### Population and Sample Size

The paper focuses on both registered and unregistered women entrepreneurs in the Abuja Municipal Area Council of the FCT. This is one of the area councils of the capital city of the nation Nigeria. The sample size is aimed at allowing for meaningful generalizations following Corbetta's (2003) recommendation for standard deviation, 95 percent confidence interval, and a 5 percent sampling error, therefore the sample size has been determined using the Topman formula.

$$n = (Z^2 pq) / e^2$$

N = required sample size

z = degree of confidence (i.e., 1.96)

p = probability of positive response (0.5)

q = probability of negative response (0.5)

e = tolerable error (0.05)

Therefore,  $n = (1.96^2 * 0.5 * 0.5) / 0.05^2 = 384$

### Model Specification

The model employed in this paper is stated as follows:

$$Y = \phi + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \quad (1)$$

Where: Y is the dependent variable,

$X_i$  are the independent variables,

$\phi$  is the intercept

$\beta_i$  are the coefficients of the respective independent variables and

$\epsilon$  is the error term

$$WEP = \phi + \beta_1APM + \beta_2AMM + \beta_3AATM + \epsilon \quad (2)$$

Where: WEP = Women Entrepreneurial Performance

$\phi$  is the intercept

$\beta_i$  = The coefficient of the independent variable parameter

APM = Access to Point-of-sale Machine

AMM = Access to Mobile Money

AATM = Access to Automatic Teller Machine

$\epsilon$  = The error term

## RESULTS AND DISCUSSIONS

The paper started by analyzing the descriptive statistics which result is shown in the table below:

**Table 1:** Descriptive Statistics

	WEP	APM	AMM	AATM
Mean	3.8650	3.5935	3.9365	3.9940
Std. Deviation	0.50763	0.74878	0.55687	0.52528
Variance	0.258	0.561	0.310	0.276
Skewness	-0.113	-0.244	-0.302	-0.247
Kurtosis	-0.305	-0.497	0.048	0.230
Observations	397	397	397	397

Source: Author's Computation, 2024 (SPSS-26)

The average performance of women entrepreneurs stands at 3.865 with a standard deviation of 0.508 showing that there is a relationship between the responses received to be quite agreeable. The negative values shown by the skewness and kurtosis measures, at -0.113 and -0.305 respectively, depict that the variable is not normally distributed as they fall below  $\pm 1.96$

Access to Point-of-sales averaged at 3.59, with responses deviating at 0.749. The skewness of the variable is positioned at a negative value of -0.244 and the kurtosis also at negative value of -0.497, all falling lower than the boundaries of  $\pm 1.96$  to show that the variable is also not normally distributed.

Furthermore, the average of 3.937 for access to mobile money platforms suggests a relatively good participation of women entrepreneurs. The standard deviation of

0.557 demonstrates a moderate variability with the skewness at -0.302 and kurtosis at 0.048 showing a near-normal distribution with minimal deviation from the normal curve.

The average Access to Automatic Teller Machines score is around 3.99, indicating adequate access to automated teller machines. The 0.53 standard deviation indicates that ATM access varies moderately. The skewness of -0.247 indicates a little negative skewed distribution, while the kurtosis of 0.230 indicates a somewhat more peaked distribution than normal, but within acceptable boundaries.

Following the descriptive analysis that have shown the variables to be not-normally distributed, the non-parametric methods of data analysis will be employed. The paper therefore analyses using the Ordinal Regression Analysis and the Spearman Rank Correlation.

**Table 2:** Descriptive Statistics

Parameter Estimates						
Variables	Estimates	Std. Error	Wald	df	Sig.	Exp(B)
APM	0.381	0.154	6.129	1	0.013	1.463
AMM	-0.648	0.509	1.620	1	0.203	0.523
AATM	1.858	0.535	12.042	1	0.001	6.409
Link function: Logit., Dependent Variable.: WEP						

Source: Author's Computation, 2024 (SPSS-26)

The calculated coefficient for APM is 0.381. This means that for every unit increase in Access to Point-of-Sale Machine, the log chances of Women Entrepreneurial Performance (WEP) rise by 0.381, while other factors remain unchanged. The Wald statistic of 6.129 with one degree of freedom results in a significance level of 0.013. This shows that the correlation between APM and WEP is statistically significant at the 0.05 level.

The estimated coefficient for AMM is -0.648. This implies that for each unit increase in Access to Mobile Money, the log odds of WEP reduce by 0.648, while other variables remain unchanged. However, the Wald statistic of 1.620

with one degree of freedom produces a significance level of 0.203, implying that the association between AMM and WEP is not statistically significant at the 0.05 level.

Access to Automatic Teller Machines has a significant positive influence on Women Entrepreneurial Performance as shown by the calculated coefficient for AATM at 1.858. This means that for every one unit increasing change that occurs in Access to Automatic Teller Machine, there is a 1.858 percentage increase that occurs on WEP, while other variables remain unchanged. The Wald statistic of 12.042 with one degree of freedom produces a p-value of 0.001, showing that the association

between AATM and WEP is highly statistically significant at the 0.05 level.

The odd ratios as shown in table 2 reflect a positive relationship between APM and AATM to WEP. For every one unit increase in Access to POS Machine and Access to Automatic Teller Machines, there is a 46.3% and 540.9% respectively, chance of women entrepreneurial performance improvement. For every one unit of increase in Access to Mobile Money, there is a 47.7% fall in the likelihood of women entrepreneurs performing better.

These findings indicate that APM and AATM are critical indicators impacting women’s entrepreneurial

performance, whereas AMM does not appear to play a significant role in this context. Access to Point-of-Sale Machines (APM) and Automatic Teller Machines (ATM) show statistically significant relationships with Women Entrepreneurial Performance (WEP), as evidenced through their low p-values (0.013 and 0.001, respectively). Access to Mobile Money (AMM) does not have a statistically significant correlation with WEP, since the p-value (0.203) exceeds the significance level of 0.05. According to Malaquias & Malaquias (2022), the adoption of DFS can contribute performance to the satisfaction of mompreneurs.

**Table 3:** Correlation Results

	WEP	APM	AMM	AATM
WEP	----			
APM	0.315 (0.000)	----		
AMM	0.381 (0.000)	0.613 (0.000)	----	
AATM	0.406 (0.000)	0.587 (0.000)	0.953 (0.000)	----

Source: Author’s Computation, 2024 (SPSS-26)

The results in Table 3 show that there is a positive correlation between all three independent variables (APM, AMM and AATM) and the dependent variable (WEP); meaning that a higher access to each of those variables will increase and improve women entrepreneurship performance. The p-value also shows that this is significant at less than 5% level. Despite the fact that the regression analysis indicates that APM and AATM have statistically significant effects on WEP, excluding AMM, the correlation analysis confirms that all three independent variables (APM, AMM, and AATM) are positively correlated with WEP, supporting the regression findings.

**Statistical Test of Hypotheses**

The hypothesis to this paper states as follows:

**H<sub>0</sub>**

Access to Point-of-Sale machine has no significant impact on the performance of women entrepreneurs in Abuja Municipal Area Council

**H<sub>1</sub>**

Access to Mobile Money has no significant impact on the performance of women entrepreneurs in Abuja Municipal Area Council

**H<sub>2</sub>**

Access to Automatic Teller Machine has no significant impact on the performance of women entrepreneurs in Abuja Municipal Area Council

The results of the analysis shows that the performance of

women entrepreneurs in Abuja Municipal Area Council is significantly impacted by their access to digital financial services. Therefore, the paper rejects the null hypothesis and accepts the alternative that:

- i. Access to Point-of-Sale Machines has a positive and significant impact on the performance of women entrepreneurs.
- ii. Access to Mobile Money has a positive and significant impact on the performance of women entrepreneurs.
- iii. Access to Automatic Teller Machines has a positive and significant impact on the performance of women entrepreneurs.

**CONCLUSION**

The paper verifies the intrinsic importance of digital financial inclusion, and also demonstrates its transformative potential for empowering women in business. The outcome of a positive relationship between the variables, show the catalytic influence of technology-enabled financial tools, effectively breaking down traditional barriers to financial inclusion of women entrepreneurs, and providing them with real-time information, data-driven decision-making capabilities, and more efficient financial management processes. The paper is limited by the data gotten from self-reported questionnaire responses, which is prone to biases like recollection or social desirability; the cross-sectional design that captured only female entrepreneurs, restricting the conclusions about the relationship between entrepreneurial success and access to digital financial services; and its reflection on the dynamic and quickly changing landscape of digital financial services and all potential confounding factors,

like educational background, access to other sources of capital, or external economic conditions that can affect the results. The paper therefore recommends that financial institutions and fintech companies should collaborate to improve the accessibility of POS machines and launch comprehensive training programs to enhance women entrepreneurs' digital literacy, financial management skills, and entrepreneurial intelligence; the Ministry of Communications and Digital Economy with the National Information Technology Development Agency (NITDA) should prioritize maximum investment in developing robust digital infrastructure, such as reliable connection, inexpensive cell phones, and secure online payment systems; and Independent ATM Deployers (IADs) can partner with the banks to install ATM's in remote areas, while The Central Bank of Nigeria focuses on instituting regulatory standards that support ATM security.

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